Texas Commission on Environmental Quality
INTEROFFICE MEMORANDUM

TO: Office of Chief Clerk **Date:** May 15, 2024

FROM: Contessa N. Gay
Amanda Kraynok
Staff Attorneys
Environmental Law Division

SUBJECT: Transmittal of Documents for Administrative Record

Applicant:	Corpus Christi Liquefaction, LLC
Proposed Permit Nos.:	105710, GHGPSDTX123M1, PSDTX1306M1
Program:	Air
Docket Nos.:	TCEQ Docket No. 2023-1474-AIR SOAH Docket No. 582-24-14737

In a contested case hearing, the administrative record includes copies of the public notices relating to the permit application, as well as affidavits of public notices that are filed by the Applicant directly with the Office of the Chief Clerk (OCC). In addition, the record includes the documents listed below that are provided to the OCC by the Executive Director's staff, as required by 30 TEX. ADMIN. CODE § 80.118.

This transmittal serves to also request that the OCC transmit the attached items and the public notice documents, including the notice of hearing, to the State Office of Administrative Hearings.

Documents included with this transmittal are indicated below:

- The final draft permit, including any special conditions or provisions
- Maximum Allowable Emission Rate Table (MAERT)
- The summary of the technical review of the permit application
- The Air Quality Analysis Audit memoranda
- The compliance summary of the Applicant
- The Executive Director's Preliminary Decision and the Executive Director's Decision on the Permit Application, if applicable.
- The Final Decision Letter
- The List of Actions from the Commissioner's Integrated Database (CID)
- Any agency documents determined by the Executive Director to be necessary to reflect the administrative and technical review of the application. The following documents are included:
    - The Executive Director's Response to Comments
    - A map of the Hearing Requestors' Locations in Relation to the Plant

Special Conditions

Permit Numbers 105710 and PSDTX1306M1

1. This permit authorizes emissions only from those emission points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," (MAERT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit. Also, this permit authorizes the emissions from planned maintenance, startup and shutdown.

Federal Applicability

2. Affected facilities shall comply with applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources, Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):

   A. Subpart A: General Provisions.

   B. Subpart Kb: Standards of Performance for Volatile Organic Liquid Storage Vessels.

   C. Subpart IIII: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

   D. Subpart KKKK: Standards of Performance for Stationary Combustion Turbines.

3. Affected facilities shall comply with applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants (HAPS) for Source Categories, 40 CFR Part 63:

   A. Subpart A: General Provisions.

   B. Subpart EEEE: National Emission Standards for HAPS: Organic Liquids Distribution (Non-Gasoline).

   C. Subpart YYYY: National Emission Standards for HAPS for Stationary Combustion Turbines.

   D. Subpart ZZZZ: National Emission Standard for HAPS for Stationary Reciprocating Internal Combustion Engines.

Emission Standards and Operating Specifications

4. This permit authorizes eighteen GE LM2500+G4 DLE natural gas fired combustion turbines. **(2/15)**

   A. The concentration of nitrogen oxides (NOx) from EPNs: TRB1 through TRB18 shall not exceed 25 parts per million by volume dry (ppmvd) per turbine corrected to 15 percent oxygen (O2) on a four-hour rolling average for routine operation, except during startup or shutdown, and a one-hour basis for stack emissions testing. **(2/15)**

   B. The concentration of carbon monoxide (CO) from EPNs: EPNs: TRB1 through TRB18 shall not exceed 29 ppmvd per turbine corrected to 15 percent O_2, on a one-hour average, except during startup and shutdown.

   C. Planned startup or shutdown of the turbines is limited to no more than 1 hour per turbine per event.

      (1) Startup is defined as beginning when fuel is fired in the combustor from a previously unfired state and ending when turbine loads exceed 50%.

(2) Shutdown is defined as beginning when turbine load drops below 50% and ending when fuel ceases to be fired.

5. The standby generators (EPNs: GEN1 through GEN 4) are limited to no more than 100 hours each of non-emergency operation per 12-month period. **(7/18)**

6. The firewater pump engines (EPNs: FWPUMP1 and FWPUMP2) are limited to no more than 100 hours each of non-emergency operation per 12-month period. **(7/18)**

7. Fuel for the facilities authorized by this permit is limited to the following:

   A. Thermal oxidizers and flare pilots are limited to fuel containing no more than 4 ppmv by volume H_2S on a 1-hour averaging period.

   B. The H_2S concentration of the fuel gas for thermal oxidizers and flare pilots shall be continuously monitored by an in-line analyzer and recorded at least once every 15 minutes. The analyzer shall be calibrated to the manufacturer's recommended frequency and specifications. **(XX/22)**

   C. The turbines are limited to fuel containing no more than 4 ppmv by volume H_2S. Records shall be maintained of the applicable pipeline H_2S tariff requirements.

   D. The standby generators and firewater pump engines are limited to ultra-low sulfur diesel containing no more than 15 ppm by weight sulfur.

   Upon request by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel, or shall allow air pollution control agency representatives to obtain a sample for analysis.

8. The condensate storage tank (EPN: IFRTK1) must meet the following conditions:

   A. An internal floating deck or "roof" or equivalent control shall be installed. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.

   B. The permit holder shall perform the visual inspections and seal gap measurements as specified in Title 40 Code of Federal Regulations § 60.113b (40 CFR § 60.113b) Testing and Procedures (as amended at 54 FR 32973, August 11, 1989) to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.

   C. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.

   D. Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. The storage tank must be equipped with permanent submerged fill pipes.

E. The maximum tank withdrawal rate is limited to 18,000 gallons per hour when condensate is transferred to pipeline and 9,000 gallons per hour when loaded to trucks. Truck loading of condensate must be submerged fill. **(7/18)**

F. The permit holder must maintain a record of total tank throughput for the previous month and the past consecutive 12-month period.

9. Fixed roof tanks uninsulated exterior surfaces exposed to the sun shall be white or aluminum. Storage tank EPN GDFTK2 must be equipped with permanent submerged fill pipes. **(11/20)**

10. VOC emissions from the spent scavenger tank (EPN TK1902) shall be controlled through carbon canister. The carbon canister shall be routinely monitored per EPA Method 21 (40 CFR 60, Appendix A) and replaced before breakthrough occurs. **(11/20)**

11. Each condensate tank truck shall be leak checked and certified annually in accordance with 40 CFR § 60.502(e).

    The permit holder shall not allow a tank truck to be filled unless it has passed a leak-tight test within the past year as evidenced by a certificate which shows the date the tank truck last passed the leak-tight test required by this condition and the identification number of the tank truck. **(11/20)**

12. Atmospheric truck loading of condensate shall be controlled by a vapor combustion unit. Vapor Combustors shall be designed and operated in accordance with the following requirements:

    The vapor combustor unit (VCU) shall achieve 99% control of the waste gas directed to it. This shall be ensured by maintaining the temperature in, or immediately downstream of, the combustion chamber above 1400 degrees Fahrenheit prior to the initial stack test performed in accordance with this Special Condition. Following the completion of that stack test, the six-minute average temperature shall be maintained above the minimum one-hour average temperature maintained during the last satisfactory stack test.

    The temperature measurement device shall reduce the temperature readings to an averaging period of 6 minutes or less and record it at that frequency. The temperature monitor shall be installed, calibrated or have a calibration check performed at least annually, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of ± 2 percent of the temperature being measured expressed in degrees Celsius or ± 2.5ºC.

    Quality assured (or valid) data must be generated when the VCU is operating except during the performance of a daily zero and span check. Loss of valid data due to periods of monitor break down, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the VCU operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

    The vapor combustor shall be operated with no visible emissions and have a constant pilot flame during all times waste gas could be directed to it. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated or have a calibration check performed at a frequency in accordance with, the manufacturer’s specifications. (Calibration check means, at a minimum, using a second device or method to verify that the monitor is accurate as specified in the permit.

Vapor Combustor Stack Sampling

The vapor combustor shall be stack sampled to determine a minimum temperature that achieves 99% DRE. This minimum temperature shall be the parameter that compliance is based on. **(7/18)**

13. Vents from each Acid Gas Removal Unit must be directed to the thermal oxidizers (TO) or the flare. The TO combustion chamber outlet temperatures for EPNs: TO-1, TO-2, and TO-3 shall be continuously monitored when waste gas is directed to the TO. The minimum outlet temperature shall be 1400 degrees Fahrenheit on an hourly average basis, until a minimum operating temperature is established by the testing required in Special Condition No. 20, when waste gas is directed to the TO. The outlet temperature must be recorded at least four times an hour (once per quarter of the hour) when waste gas is directed to the TO. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have accuracy the greater of 1 percent of the temperature being measured or 4.5 degrees Fahrenheit. **(7/18)**

14. The flare systems (EPNs: WTDYFLR1, WTDYFLR2, and MRNFLR), except as set forth herein, shall be designed and operated in accordance with the following requirements: **(XX/22)**

    A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal and maintenance flow conditions. The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements. EPN: MRNFLR shall not be subject to the minimum heating value requirement of 40 CFR § 60.18 during the process of venting inert gases from ships.

    B. The wet/dry flares (EPNs: WTDYFLR1 and WTDYFLR2) shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with the manufacturer’s specifications.

    C. The marine flare, EPN: MRNFLR, shall be operated with a flame present at all times when liquefied natural gas carriers (LNGCs) are connected to the vapor transfer arm. During all times when EPN: MRNFLR is in use, the pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with the manufacturer’s specifications.

    D. The flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.

       The requirements above are not applicable during emission events. Emission events are not authorized by this permit.

    E. The permit holder shall install a continuous flow monitor and composition analyzer or continuous flow monitor and calorimeter that provide a record of the vent stream flow and composition (total VOC or Btu content) to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at

least once every 15 minutes, except during periods when the flare is offline or the monitor is undergoing calibrations, and the average hourly values of the flow, composition and heating value shall be recorded each hour.

F. The monitors shall be calibrated or have a calibration check performed on an annual basis to meet the following accuracy specifications: the flow monitor shall be ±5.0%, temperature monitor shall be ±2.0% at absolute temperature, and pressure monitor shall be ±5.0 mm Hg.

G. If the VOC content of the vent stream is monitored for purposes of compliance with Special Condition 14.E, calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR §60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

H. A calorimeter may be used to directly measure the heating value of the flared gas. If used, the calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

I. The monitors and analyzers shall operate as required by this section at least 95% of the time when the flare is operational, averaged over a rolling 12-month period. Flared gas net heating value determined in accordance with 40 CFR §§60.18(f)(3) shall be recorded at least once every hour. Hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit application workbook received December 27, 2019.

J. The following requirements apply to the capture system for each flare:

(1) Conduct at least monthly visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or

(2) At least annually, verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

(3) The control device shall not have a bypass.

(4) A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

K. Records of the inspections required shall be maintained and if the results of any of the above inspections are not satisfactory, the permit holder shall promptly take necessary corrective action.

L. The flare systems shall comply with Paragraphs E through K of this condition no later than 18 months after issuance of the permit amendment associated with NSR Project No. 327940.

During the 18-month interim period, data from the existing flare flow monitors shall be used in conjunction with stream compositions and calculation methods represented in the permit application (PI-1 dated April 19, 2021, as revised) to demonstrate compliance with the short-term (lb/hr) and annual (tpy) emission limits specified by the MAERT.

M. Flow and composition data required by Special Condition No. 14.E for the flares (EPNs WTDYFLR1, WTDFLR2, and MRNFLR) shall be used to calculate a mass emission rate for each pollutant expressed in lb/hr. The only exceptions to this requirement are when a flare is off line or during periods of monitor calibration or other authorized monitor downtime.

N. Flow and composition data required by Special Condition No. 14.E for the flares shall be used to calculate a monthly mass emission rate for each pollutant expressed in tons per month. Operations of units and processes controlled by the flares shall be limited such that the combined flared waste gas emissions do not exceed the MAERT limits for the Wet/Dry Flare Cap (Normal Operations, EPNs WTDFLR1 and WTDFLR2) or the Marine Flare (EPN MRNFLR) on a rolling 12-month basis. All flare emission calculations shall be performed using TCEQ approved emission factors.

15. When conditioning a marine vessel to accept liquefied natural gas (LNG), any associated emissions from the LNGC must be routed to EPN: MRNFLR so that EPN: MRNFLR can act as a vent stack during purging of any inert gases. When loading LNGCs, boil off gas that meets the quality and temperature specification must be returned to the process. **(7/18)**

16. No more than two marine vessels may be conditioned or vented to the marine flare (EPN MRNFLR) at any given time. **(XX/22)**

17. During required emergency shutdown (ESD) testing at the upstream Sinton Compressor Facility, boil-off gas (BOG) from the LNG tanks that cannot be routed back to the process shall be vented to the marine flare (EPN MRNFLR). During the ESD testing, all LNG loading of marine vessels shall commence shutdown and remain inactive during the duration of the ESD testing process. Records of the date, time, and duration of ESD testing events and associated cessation of marine loading shall be maintained to demonstrate compliance with this condition. **(XX/22)**

18. Opacity of emissions from any one stack, other than the flares, authorized by this permit shall not exceed five percent averaged over a six-minute period from each stack, except during planned maintenance, startup, and shutdown where it shall not exceed 15 percent. This determination shall be made by first observing for visible emissions while each facility is in operation. Observations shall be made at least 15 feet and no more than 0.25 miles from the emission point(s). Up to three emissions points may be read concurrently, provided that all three emissions points are within a 70-degree viewing sector or angle in front of the observer such that the proper sun position (at the observer's back) can be maintained for all three emission points.

    If visible emissions are observed from an emission point, then the opacity shall be determined and documented within 24 hours for that emission point using Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60), Appendix A, Test Method 9. Instead of determining opacity as described above, the permit holder may choose to consider any observed visible emissions a violation of the opacity limit and record it as such. Observations shall be performed and recorded quarterly. If the opacity exceeds five percent or 15 percent, as applicable, corrective action to eliminate the source of visible emissions shall be taken promptly and documented within one week of first observation.

Initial Determination of Compliance

19. Sampling ports and platforms shall be incorporated into the design of all exhaust stacks according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities." Alternate sampling facility designs may be submitted for approval by the TCEQ Regional Director.

20. The holder of this permit shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from EPNs: TRB1 through TRB18 and TO-1 through TO-3 and to determine initial compliance with all emission limits for EPNs: TRB1 through TRB18 established in this permit. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and in accordance with the appropriate EPA Reference Methods to be determined during the pretest meeting.

    Fuel sampling using the methods and procedures of 40 CFR § 60.4415 may be conducted in lieu of stack sampling for sulfur dioxide (SO_2) or the permit holder may be exempted from stack and fuel monitoring of SO_2 as provided under 40 CFR § 60.4365(b). If fuel sampling is used, compliance with New Source Performance Standards (NSPS) Subpart KKKK, SO_2 limits shall be based on 100 percent conversion of the sulfur in the fuel to SO_2. Any deviations from those procedures must be approved by the Executive Director of the TCEQ prior to sampling. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling.

    The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

    A. The TCEQ Corpus Christi Regional Office shall be contacted as soon as testing is scheduled but not less than 45 days prior to sampling to schedule a pretest meeting.

        The notice shall include:

        (1) Date for pretest meeting.

        (2) Date sampling will occur.

        (3) Name of firm conducting sampling.

        (4) Type of sampling equipment to be used.

        (5) Method or procedure to be used in sampling.

        (6) Procedure used to determine turbine loads during and after the sampling period.

        The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports. A written proposed description of any deviation from sampling procedures specified in permit conditions, or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures. Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate or equivalent procedure proposals for NSPS testing which must have EPA approval shall be submitted to the EPA and copied to TCEQ Regional Director.

    B. For EPNs: TRB1 through TRB18, air contaminants and diluents to be sampled and analyzed include (but are not limited to) NOx, O_2, CO, volatile organic compounds (VOC), and SO_2.

Fuel sampling using the methods and procedures of 40 CFR § 60.4415. For SO_2, the exemptions from emissions testing and fuel monitoring in 40 CFR § 60.4365(b) will apply.

C. Each turbine shall be tested at or above 90% of maximum load operations. Each tested turbine load shall be identified in the sampling report. The permit holder shall present at the pretest meeting the manner in which stack sampling will be executed in order to demonstrate compliance with emission standards found in 40 CFR Part 60, Subpart KKKK.

D. For EPNs: TO-1 through TO-3, a VOC destruction efficiency of at least 99.9% or a VOC outlet concentration of 10 ppmvd or less at 3 percent oxygen on a one-hour average must be demonstrated. The minimum operating temperature shall be the one-hour average temperature at which compliance with the above was demonstrated.

E. Sampling as required by this condition shall occur within 60 days after achieving the maximum production rate at which each facility will be operated, but no later than 180 days after initial start-up of each facility. Additional sampling may be required by TCEQ or EPA.

F. Within 60 days after the completion of the testing and sampling required herein, one copy of the sampling report shall be sent to the TCEQ Corpus Christi Regional Office.

Continuous Demonstration of Compliance

21. The holder of this permit shall install, calibrate, maintain, and operate a system to continuously monitor and record the fuel consumption in the turbines (EPNs: TRB1 through TRB18). The system shall be accurate to ± 5.0% of the unit's maximum flow rate and calibrated according to the manufacturer's instructions **(2/15)**

22. After every hot section (gas generator) change-out, the holder of this permit shall perform the testing described in Special Condition No. 20 for that turbine(s) again.

Piping, Valves, Connectors, Pumps, and Compressors - 28VHP

23. Except as may be provided for in the special conditions of this permit, the following requirements apply to all piping, valves, connectors, pumps, and compressors:

A. These conditions shall not apply (1) where the VOC have an aggregate partial pressure or vapor pressure of less than 0.044 pound per square inch, absolute (psia) at 68ºF or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure; or (3) to components in pipeline quality natural gas or BOG service. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);

(2) a written or electronic database;

(3) color coding;

(4) a form of weatherproof identification; or

(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Subparagraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

   Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling or other such periods where flow through the valve(s) is necessary for maintenance, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 24 hours. If the repair or replacement is not completed within 24 hours, the line or valve must have a cap, blind flange, plug, or second valve installed.

F. Accessible valves shall be monitored by leak checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

   A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly and recorded in the unit log.

   The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR Part 60, Appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. If a response factor less than 10 cannot be achieved using methane, then the instrument may be

calibrated with one of the VOCs to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leaks described in this paragraph must be made within 5 days. Records of the first attempt to repair shall be maintained.

I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC § 115.782(c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC § 115.782(c)(1)(B)(i)(I), the TCEQ Regional Manager, and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 and 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

Maintenance, Startup, and Shutdown

24. The permit holder shall establish, implement, and update, as appropriate, a program to maintain and repair facilities. The minimum requirements of this program must include:

    A. A maintenance program developed by the permit holder for all equipment that is consistent with good air pollution control practices, or alternatively, manufacturer's specifications and recommended programs applicable to equipment performance and the effect on emissions;

    B. Cleaning and routine inspection of all equipment;

    C. Repair of equipment on timeframes that minimize equipment failures and maintain performance;

    D. Training of personnel who implement the maintenance program; and

    E. Records of conducted planned MSS activities.

25. Sections of the plant handling ethylene or propane undergoing shutdown or maintenance that requires breaking a line or opening a vessel shall be depressurized, emptied, degassed, and placed in service in accordance with the following requirements.

    A. The process equipment shall be emptied to the pressurized refrigerant storage vessels, pumping as much liquid as practicable to the storage vessels, prior to venting to atmosphere, degassing, or draining liquid. Facilities shall be degassed using good engineering and best management practices as developed per Special Condition No. 24 to ensure air contaminants are removed from the system through the control device (EPNs: WTDYFLR1 and WTDYFLR2) to the extent allowed by process equipment or storage vessel design. The facilities to be degassed shall not be vented directly to atmosphere, except as necessary to establish isolation of the work area or to monitor VOC concentration following controlled depressurization. The venting shall be minimized to the maximum extent practicable and actions taken recorded. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application. **(11/20)**

    B. The locations and/or identifiers where the purge gas enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded (process flow diagrams [PFDs] or piping and instrumentation diagrams [P&IDs] may be used to demonstrate compliance with the requirement).

    C. If the process equipment requires purging, it will be conducted using best management and good air pollution control practices.

    D. Propane depressurization shall be limited to 56 hours per year, on a rolling 12-month basis. **(XX/22)**

26. All contents from process equipment or storage tanks must be removed to the maximum extent possible practicable prior to opening equipment to commence degassing and maintenance. Liquid

and solid removal must be directed to covered containment, recycled, or disposed of properly. If it is necessary to drain liquid into an open pan or the sump, the liquid must be covered and transferred to a covered vessel within one hour of being drained.

Recordkeeping

27. The following records must be kept at the plant for the life of the permit. All records required in this permit must be made available at the request of personnel from the TCEQ, EPA, or any air pollution control agency with jurisdiction:

    A. A copy of this permit.

    B. Permit application dated August 31, 2017, and subsequent representations submitted to the TCEQ.

    C. A complete copy of the testing reports and records of performance testing completed pursuant to Special Condition No. 20.

28. The following information must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction: **(XX/22)**

    A. Records of hourly fuel consumption of EPNs: TRB1 through TRB18.

    B. For records of MSS:

        (1) Date, time and duration of the event; and

        (2) Emissions from the event.

    C. Records of condensate load-out kept on a monthly basis.

    D. Records of H_2S concentration in the fuel gas used as required by Special Condition No. 7B.

    E. Records of flare waste gas flow data, waste gas composition or heating value data, and capture system inspections as required by Special Condition No. 14.

    F. Records of short-term mass emission rates at the flares as required by Special Condition No. 14.M.

    G. Records of visible emission checks and opacity readings as required by Special Condition No. 18 and any corrective actions taken.

    H. Hours of operation on a monthly and 12-month period for the standby generators and the firewater pumps.

    I. Records of thermal oxidizer temperature as required by Special Condition No. 13.

    J. Records required by the monitoring program in Special Condition No. 23.

Other Authorizations

29. The following sources and/or activities are authorized under a Permit by Rule (PBR) by Title 30 Texas Administrative Code Chapter 106 (30 TAC Chapter 106). This list is not intended to be all inclusive and can be altered without modifications to this permit.

Authorization	Source or Activity
PBR 106.261	Facilities (Emission Limitations) - Fugitives
PBR 106.262	Facilities (Emission and Distance Limitations) - Fugitives
PBR 106.263	Planned Maintenance, Startup and Shutdown
PBR 106.355	Pipeline Metering, Purging, and Maintenance
PBR 106.359	Planned Maintenance, Startup, and Shutdown (MSS) at Oil and Gas Handling and Production Facilities - Abrasive Blasting
PBR 106.472	Diesel Storage Tanks - EPNs DSLTK6, DSLTK7, DSLTK8
PBR 106.473	Gasoline Storage Tank - EPN GDFTK3
PBR 106.478	Diesel Storage Tank - EPN DSLTK5
PBR 106.511	Portable and Emergency Engines and Turbines - EPNs GEN5, GEN7
PBR 106.512	Stationary Engines and Turbines - EPNs GEN6, GEN8, GEN9, GEN11, GEN12

Date: DRAFT

Special Conditions

Permit Number GHGPSDTX123M1

1. This permit authorizes emissions only from those emission points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates," (MAERT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating conditions specified in this permit. Also, this permit authorizes the emissions from planned maintenance, startup and shutdown.

Emission Standards and Operating Specifications

2. This permit authorizes eighteen (18) GE LM2500+G4 DLE natural gas fired combustion turbines.

   A. Permittee shall follow manufacturer's emission-related written instructions for maintenance activities including prescribed maintenance intervals to assure good combustion. Compressors shall be inspected and maintained according to a written maintenance plan.

   B. Planned startup or shutdown of the turbines is limited to no more than 1 hour per turbine per event.

      (1) Startup is defined as beginning when fuel is fired in the combustor from a previously unfired state and ending when turbine loads exceed 50%.

      (2) Shutdown is defined as beginning when turbine load drops below 50% and ending when fuel ceases to be fired.

3. The standby generators (EPNs: GEN1 through GEN4) are limited to no more than 100 hours each of non-emergency operation per 12-month period. Each generator shall be equipped with a non-resettable elapsed run time meter.

4. The firewater pump engines (EPNs: FWPUMP1 through FWPUMP2) are limited to no more than 100 hours each of non-emergency operation per 12-month period. Each engine shall be equipped with a non-resettable elapsed run time meter.

5. Fuel for the facilities authorized by this permit is limited to the following:

   A. Thermal oxidizers and flare pilots are limited to fuel containing no more than 4 ppmv by volume H_2S on a 1-hour averaging period.

   B. The H_2S concentration of the fuel gas for thermal oxidizers and flare pilots shall be continuously monitored by an in-line analyzer and recorded at least once every 15 minutes. The analyzer shall be calibrated to the manufacturer's recommended frequency and specifications. **(XX/22)**

   C. The turbines are limited to fuel containing no more than 4 ppmv by volume H_2S. Records shall be maintained of the applicable pipeline H_2S tariff requirements.

   D. The standby generators and firewater pump engines are limited to ultra-low sulfur diesel containing no more than 15 ppm by weight sulfur.

      Upon request by the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuel, or shall allow air pollution control agency representatives to obtain a sample for analysis.

6. Vents from each Acid Gas Removal Unit must be directed to the thermal oxidizers (TO) or the flares.

   A. The TO combustion chamber outlet temperatures for EPNs: TO-1, TO-2, and TO-3 shall be continuously monitored when waste gas is directed to the TO. The minimum outlet temperature shall be 1400 degrees Fahrenheit on an hourly average basis, until a minimum operating temperature is established by the testing required in Special Condition No. 10, when waste gas is directed to the TO. The outlet temperature must be recorded at least four times an hour (once per quarter of the hour) when waste gas is directed to the TO. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have accuracy the greater of 1 percent of the temperature being measured or 4.5 degrees Fahrenheit.

   B. A minimum exhaust oxygen content of 3 percent must be maintained on an hourly average. Except for a total duration not to exceed 5% of total thermal oxidizer operating hours, oxygen analyzers shall continuously monitor and record oxygen concentration when waste gas is directed to the thermal oxidizers. It shall record the oxygen readings at least four times an hour (once per quarter of the hour) when waste gas is directed to the TO and averaged hourly for compliance demonstration. A partial operational hour with greater than 30 minutes of data shall count as a valid hour. The oxygen analyzers shall be quality-assured at least semiannually using cylinder gas audits (CGAs) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.2. In lieu of CGAs, the permit holder may elect to replace the oxygen sensor semiannually.

7. The flare systems (EPNs: WTDYFLR1, WTDYFLR2, and MRNFLR) shall achieve a 99% destruction rate efficiency (DRE) for compounds up to three carbons and a 98% DRE for all other compounds. These flares (EPNs: WTDYFLR1, WTDYFLR2, and MRNFLR), except as set forth herein, shall be designed and operated in accordance with the following requirements: **(XX/22)**

   A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal and maintenance flow conditions. The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements. EPN: MRNFLR shall not be subject to the minimum heating value requirement of 40 CFR § 60.18 during the process of venting inert gases from ships.

   B. The wet/dry flares (EPNs: WTDYFLR1 and WTDYFLR2) shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to within manufacturer’s specifications and shall be calibrated at a frequency in accordance with the manufacturer’s specifications.

   C. The marine flare, EPN: MRNFLR, shall be operated with a flame present at all times when liquefied natural gas carriers (LNGCs) are connected to the vapor transfer arm. During all times when EPN: MRNFLR is in use, the pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to within manufacturer’s

specifications, and shall be calibrated at a frequency in accordance with the manufacturer's specifications.

D. The flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours.

The requirements above are not applicable during emission events. Emission events are not authorized by this permit.

E. The permit holder shall install a continuous flow monitor and composition analyzer or continuous flow monitor and calorimeter that provide a record of the vent stream flow and composition (total VOC or Btu content) to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes, except during periods when the flare is offline or the monitor is undergoing calibrations, and the average hourly values of the flow, composition and heating value shall be recorded each hour.

F. The monitors shall be calibrated or have a calibration check performed on an annual basis to meet the following accuracy specifications: the flow monitor shall be ±5.0%, temperature monitor shall be ±2.0% at absolute temperature, and pressure monitor shall be ±5.0 mm Hg.

G. If the VOC content of the vent stream is monitored for purposes of compliance with Special Condition 7.E, calibration of the analyzer shall follow the procedures and requirements of Section 10.0 of 40 CFR Part 60, Appendix B, Performance Specification 9, as amended through October 17, 2000 (65 FR 61744), except that the multi-point calibration procedure in Section 10.1 of Performance Specification 9 shall be performed at least once every calendar quarter instead of once every month, and the mid-level calibration check procedure in Section 10.2 of Performance Specification 9 shall be performed at least once every calendar week instead of once every 24 hours. The calibration gases used for calibration procedures shall be in accordance with Section 7.1 of Performance Specification 9. Net heating value of the gas combusted in the flare shall be calculated according to the equation given in 40 CFR §60.18(f)(3) as amended through October 17, 2000 (65 FR 61744).

H. A calorimeter may be used to directly measure the heating value of the flared gas. If used, the calorimeter shall be calibrated, installed, operated, and maintained, in accordance with manufacturer recommendations, to continuously measure and record the net heating value of the gas sent to the flare, in British thermal units/standard cubic foot of the gas.

I. The monitors and analyzers shall operate as required by this section at least 95% of the time when the flare is operational, averaged over a rolling 12-month period. Flared gas net heating value determined in accordance with 40 CFR §§60.18(f)(3) shall be recorded at least once every hour. Hourly mass emission rates shall be determined and recorded using the above readings and the emission factors used in the permit application workbook received December 27, 2019.

J. The following requirements apply to the capture system for each flare:

(1) Conduct at least monthly visual, audible, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or

(2) At least annually, verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

(3) The control device shall not have a bypass.

(4) A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when it is required to be in service.

K. Records of the inspections required shall be maintained and if the results of any of the above inspections are not satisfactory, the permit holder shall promptly take necessary corrective action.

L. The flare systems shall comply with Paragraphs E through K of this condition no later than 18 months after issuance of the permit amendment associated with NSR Project No. 327940.

During the 18-month interim period, data from the existing flare flow monitors shall be used in conjunction with stream compositions and calculation methods represented in the permit application (PI-1 dated April 19, 2021, as revised) to demonstrate compliance with the short-term (lb/hr) and annual (tpy) emission limits specified by the MAERT.

8. When conditioning a marine vessel to accept liquefied natural gas (LNG), any associated inert emissions from the LNGC must be routed to EPN: MRNFLR so that EPN: MRNFLR can act as a vent stack during purging of any inert gases. When loading LNGCs, boil off gas that meets the quality and temperature specification must be returned to the process.

Initial Determination of Compliance

9. Sampling ports and platforms shall be incorporated into the design of all exhaust stacks according to the specifications set forth in the attachment entitled “Chapter 2, Stack Sampling Facilities.” Alternate sampling facility designs may be submitted for approval by the TCEQ Regional Director.

10. The holder of this permit shall perform stack sampling and other testing as required to establish the actual quantities of air contaminants being emitted into the atmosphere from EPNs: TO-1 through TO-3. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and in accordance with the appropriate EPA Reference Methods to be determined during the pretest meeting.

Any deviations from those procedures must be approved by the Executive Director of the TCEQ prior to sampling. The TCEQ Executive Director or his designated representative shall be afforded the opportunity to observe all such sampling.

The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

A. The TCEQ Corpus Christi Regional Office shall be contacted as soon as testing is scheduled but not less than 45 days prior to sampling to schedule a pretest meeting.

The notice shall include:

(1) Date for pretest meeting.

(2) Date sampling will occur.

(3) Name of firm conducting sampling.

(4) Type of sampling equipment to be used.

(5) Method or procedure to be used in sampling.

B. For EPNs: TO-1 through TO-3, a CH_4 destruction and removal efficiency (DRE) of at least 99.9% on a one-hour average must be demonstrated. The minimum operating temperature shall be the average temperature at which compliance with the above was demonstrated.

C. The carbon content (CC) of the fuels, except for diesel, shall be obtained by using the methods of 40 CFR § 98.34(b)(4). The molecular weight (MW) of the fuels, except for diesel, shall be determined, by the procedures contained in 40 CFR § 98.34(a)(6). The fuel gross calorific value (GCV) [high heat value (HHV)] of the fuels, except for diesel, shall be determined by the procedures contained in 40 CFR § 98.34(a)(6).

D. Sampling as required by this condition shall occur within 60 days after achieving the maximum production rate at which each facility will be operated, but no later than 180 days after initial start-up of each facility. Additional sampling may be required by TCEQ or EPA.

E. Within 60 days after the completion of the testing and sampling required herein, one copy of the sampling report shall be sent to the TCEQ Corpus Christi Regional Office.

Continuous Demonstration of Compliance

11. The permit holder shall install, calibrate, maintain, and operate a system to continuously monitor and record the average hourly fuel consumption of each turbine (EPNs: TRB1 through TRB18) with individual flow measurements being taken no less frequently than once every 15 minutes. The fuel flow meter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. The flow meters shall be accurate to ± 5.0 percent of the unit's maximum flow.

12. The permit holder shall continuously monitor and record (1) the average hourly flow rate to each thermal oxidizer from the vent of each Acid Gas Removal Unit and (2) the average hourly fuel consumption of each TO with individual flow measurements being taken no less frequently than once every 15 minutes. The flow meter shall be installed, calibrated, maintained, and operated according to the manufacturer's instructions. The flow meters shall be accurate to ± 5.0 percent of the unit's maximum flow.

13. The volumetric concentration of CO_2 from each TO stack shall be sampled and analyzed according to 40 CFR §98.234(b) annually. The volumetric concentration of CH_4 from the vent of each Acid Gas Removal Unit shall be sampled and analyzed according to 40 CFR §98.234(b) annually.

14. At each shutdown where the TO is opened for internal inspection or maintenance, each TO (EPNs: TO-1 through TO-3) shall be inspected for damaged internal components, settling of packing, and other degradation of the equipment that would affect system performance. Corrective action shall be taken and documented if degradation is found.

Piping, Valves, Connectors, Pumps, and Compressors - 28M

15. Except as may be provided for in the special conditions of this permit, the following requirements apply to all piping, valves, connectors, pumps, and compressors in pipeline quality natural gas service:

A. These conditions shall not apply where the operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made readily available upon request.

The exempted components may be identified by one or more of the following methods:

(1) piping and instrumentation diagram (PID);

(2) a written or electronic database;

(3) color coding;

(4) a form of weatherproof identification; or

(5) designation of exempted process unit boundaries.

B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.

D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made readily available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in Subparagraph A above. If an unsafe to monitor component is not considered safe to monitor within a calendar year, then it shall be monitored as soon as possible during safe to monitor times. A difficult to monitor component for which quarterly monitoring is specified may instead be monitored annually.

E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling or other such periods where flow through the valve(s) is necessary for maintenance, both valves shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 24 hours. If the repair or replacement is not completed within 24 hours, the line or valve must have a cap, blind flange, plug, or second valve installed.

F. Accessible valves shall be monitored by leak checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief

valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly and recorded in the unit log.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR Part 60, Appendix A. The gas analyzer shall be calibrated with methane.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

H. Damaged or leaking valves or connectors found to be emitting CH_4 in excess of 10,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting CH_4 in excess of 10,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leaks described in this paragraph must be made within 5 days. Records of the first attempt to repair shall be maintained.

I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC § 115.782(c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC § 115.782(c)(1)(B)(i)(I), the TCEQ Regional Manager, and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall

indicate dates and times, test methods, and instrument readings. Records of physical inspections shall be noted in the operator's log or equivalent.

K. Alternative monitoring frequency schedules of 30 TAC §§ 115.352 and 115.359 or National Emission Standards for Organic Hazardous Air Pollutants, 40 CFR Part 63, Subpart H, may be used in lieu of Items F through G of this condition.

L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard (NSPS), or an applicable National Emission Standard for Hazardous Air Pollutants (NESHAPS) and does not constitute approval of alternative standards for these regulations.

Maintenance, Startup, and Shutdown

16. The permit holder shall establish, implement, and update, as appropriate, a program to maintain and repair facilities. The minimum requirements of this program must include:

A. A maintenance program developed by the permit holder for all equipment that is consistent with good air pollution control practices, or alternatively, manufacturer's specifications and recommended programs applicable to equipment performance and the effect on emissions;

B. Cleaning and routine inspection of all equipment;

C. Repair of equipment on timeframes that minimize equipment failures and maintain performance;

D. Training of personnel who implement the maintenance program; and

E. Records of conducted planned MSS activities.

Calculation Methodology

17. Compliance with the emission limits of the MAERT shall be demonstrated using the data generated through valid monitoring and the applicable equations of 40 Code of Federal Regulations Part 98, Mandatory Greenhouse Gas Reporting. Global warming potentials are to be based on values listed in footnote #3 of the MAERT.

18. In lieu of the requirements of Special Condition No. 17, for a given turbine or TO the permit holder may install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for CO_2 emission measurements. The CEMS shall meet the specifications and test procedures for CO_2 emission monitoring system at stationary sources, 40 CFR Part 98; or meet the requirements of 40 CFR Part 60, Appendix B, Performance Specification 3 and follow the monitoring requirements of 40 CFR § 60.13. The permit holder shall also measure volumetric flow and install a data acquisition and handling system to record all measurements.

Recordkeeping

19. The following records must be kept at the plant for the life of the permit. All records required in this permit must be made available at the request of personnel from the TCEQ, EPA, or any air pollution control agency with jurisdiction:

A. A copy of this permit.

B. Permit application dated 8/31/2017, and subsequent representations submitted to the TCEQ.

C. Any turbine or compressor emissions-related written maintenance plans pursuant to Special Condition No. 2.A.

D. A complete copy of the testing reports and records of performance testing completed pursuant to Special Condition No. 10.

20. The following information must be maintained by the holder of this permit in a form suitable for inspection for a period of five years after collection and must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction:

A. For each emergency engine and generators (EPNs: GEN1 through Gen-4, FWPUMP1, and FWPUMP2) hours of operation on a monthly and rolling 12-month basis to show compliance with Special Condition Nos. 3 and 4.

B. For each turbine (EPNs: TRB1 through TRB18)

(1) Monthly and rolling 12-month CO_{2e} emissions data in tons

(2) Monthly and rolling 12-month fuel flow data

(3) Dates and activity performed for emissions related inspections and maintenance pursuant to Special Condition No. 2.A.

C. For each EPNs: TO-1 through TO-3

(1) Hourly combustion chamber outlet temperature

(2) Hourly exhaust oxygen content

(3) Monthly, and rolling 12-month fuel consumption

(4) Monthly, and rolling 12-month vent flow from each Acid Gas Removal Unit

(5) Results of CO_2 sampling required by Special Condition No. 13

(6) Dates of visual inspections and any corrective action required by Special Condition No. 14

D. For each flare system (EPNs: WTDYFLR1, WTDYFLR2, and MRNFLR), records of date and time of pilot flame loss. **(11/20)**

E. For records of MSS:

(1) Date, time and duration of the event; and

(2) Emissions from the event.

F. Records required by the monitoring program in Special Condition No. 15.

G. Monitoring, quality assurance/quality control requirements, emission calculation methodologies, recordkeeping and reporting requirements related to GHG emissions shall adhere to the applicable requirements in 40 CFR Part 98 and this permit. **(11/20)**

21. Permit holders must keep records sufficient to demonstrate compliance with 30 TAC §116.164. If construction, a physical change or a change in the method of operation results in Prevention of Significant Deterioration (PSD) review for criteria pollutants, records shall be sufficient to demonstrate the amount of emissions of GHGs from the source as a result of construction, a physical change or a change in the method of operation does not require authorization under 30

TAC §116.164(a). If there is construction, a physical change or a change in the method of operation that will result in a net emissions increase of 75,000 tpy or more CO_2e and PSD review is triggered for criteria pollutants, greenhouse gas emissions are subject to PSD review.

Allowable emission rates and special conditions are updated to be consistent with records required by 30 TAC §116.164. **(11/20)**

Date: DRAFT

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 105710 and PSDTX1306M1

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

Air Contaminants Data

TRB1 TRB2 TRB7 TRB8 TRB13 TRB14	Propane Refrigeration Turbines Emission rates are per turbine	NO_x	39.60	See Annual CAP limits below.
		CO	24.10	
		VOC	0.	
		SO_2	0.44	
		H_2S	<0.01	
		PM	0.98	
		PM_{10}	0.98	
		$PM_{2.5}$	0.98	
TRB3 TRB4 TRB9 TRB10 TRB15 TRB16	Ethylene Refrigeration Turbines Emission rates are per turbine	NO_x	39.60	
		CO	24.10	
		VOC	0.90	
		SO_2	0.44	
		H_2S	<0.01	
		PM	0.98	
		PM_{10}	0.98	
		$PM_{2.5}$	0.98	
TRB5 TRB6 TRB11 TRB12 TRB17 TRB18	Methane Refrigeration Turbines Emission rates are per turbine	NO_x	39.60	
		CO	24.10	
		VOC	0.90	
		SO_2	0.44	
		H_2S	<0.01	
		PM	0.98	
		PM_{10}	0.98	
		$PM_{2.5}$	0.98	

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
TRB1-TRB18	Annual CAP Six Propane, Six Ethylene, and Six Methane Refrigeration Turbines	NO_x	See hourly limits per turbine above.	3121.92
		CO		1900.26
		VOC		71.28
		SO_2		34.74
		H_2S		0.18
		PM		77.58
		PM_{10}		77.58
		$PM_{2.5}$		77.58
TO-1	Thermal Oxidizer	NO_x	4.69	17.31
		CO	13.84	46.86
		VOC	0.24	0.56
		SO_2	1.44	3.36
		H_2S	<0.01	0.02
		PM	0.58	2.15
		PM_{10}	0.58	2.15
		$PM_{2.5}$	0.58	2.15
TO-2	Thermal Oxidizer	NO_x	4.69	17.31
		CO	13.84	46.86
		VOC	0.24	0.56
		SO_2	1.44	3.36
		H_2S	<0.01	0.02
		PM	0.58	2.15
		PM_{10}	0.58	2.15
		$PM_{2.5}$	0.58	2.15

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
TO-3	Thermal Oxidizer	NO_x	4.69	17.31
		CO	13.84	46.86
		VOC	0.24	0.56
		SO_2	1.44	3.36
		H_2S	<0.01	0.02
		PM	0.58	2.15
		PM_{10}	0.58	2.15
		$PM_{2.5}$	0.58	2.15
WTDYFLR1	Wet/Dry Gas Flare 1 (Normal Operations)	NO_x	71.02	See Flare Cap limits below.
		CO	282.86	
		VOC	61.25	
		SO_2	4.42	
		H_2S	0.05	
WTDYFLR2	Wet/Dry Gas Flare 2 (Normal Operations)	NO_x	71.02	
		CO	282.86	
		VOC	61.25	
		SO_2	4.42	
		H_2S	0.05	

Emission Sources - Maximum Allowable Emission Rates

WTDYFLR1 and WTDYFLR2	Flare Cap (Normal Operations)	NO_x	71.02	57.81
		CO	282.86	339.19
		VOC	61.25	75.38
		SO_2	4.42	3.48
		H_2S	0.05	0.04
WTDYFLR1	Wet/Dry Gas Flare 1 (MSS)	NO_x	816.68	See Annual Flare Cap (MSS) below.
		CO	3,252.52	
		VOC	2,895.54	
		SO_2	2.20	
		H_2S	0.02	
WTDYFLR2	Wet/Dry Gas Flare 2 (MSS)	NO_x	816.68	
		CO	3,252.52	
		VOC	2,895.54	
		SO_2	2.20	
		H_2S	0.02	
WTDYFLR1 and WTDYFLR2	Annual Flare Cap (MSS)	NO_x	See hourly MSS limits per flare above.	228.09
		CO		908.39
		VOC		116.62
		SO_2		1.02
		H_2S		0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
MRNFLR	Marine Flare	NO_x	389.73	58.18
		CO	1,552.05	414.77
		VOC	394.37	14.59
		SO_2	<0.01	<0.01
		H_2S	<0.01	<0.01
GEN1	Standby Generator 1	NO_x	28.70	1.30
		CO	5.28	0.24
		VOC	0.32	0.01
		SO_2	0.03	<0.01
		PM	0.16	<0.01
		PM_{10}	0.16	<0.01
		$PM_{2.5}$	0.16	<0.01
GEN2	Standby Generator 2	NO_x	28.70	1.30
		CO	5.28	0.24
		VOC	0.32	0.01
		SO_2	0.03	<0.01
		PM	0.16	<0.01
		PM_{10}	0.16	<0.01
		$PM_{2.5}$	0.16	<0.01
GEN3	Standby Generator 3	NO_x	28.70	1.30
		CO	5.28	0.24
		VOC	0.32	0.01
		SO_2	0.03	<0.01
		PM	0.16	<0.01
		PM_{10}	0.16	<0.01
		$PM_{2.5}$	0.16	<0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
GEN4	Standby Generator 4	NO_x	28.70	1.30
		CO	5.28	0.24
		VOC	0.32	0.01
		SO_2	0.03	<0.01
		PM	0.16	<0.01
		PM_{10}	0.16	<0.01
		$PM_{2.5}$	0.16	<0.01
FWPUMP1	Diesel Firewater Pump 1	NO_x	2.90	0.13
		CO	0.69	0.03
		VOC	0.08	<0.01
		SO_2	<0.01	<0.01
		PM	0.10	<0.01
		PM_{10}	0.10	<0.01
		$PM_{2.5}$	0.10	<0.01
FWPUMP2	Diesel Firewater Pump 2	NO_x	2.90	0.13
		CO	0.69	0.03
		VOC	0.08	<0.01
		SO_2	<0.01	<0.01
		PM	0.10	<0.01
		PM_{10}	0.10	<0.01
		$PM_{2.5}$	0.10	<0.01
IFRTK1	Condensate Tank	VOC	0.60	1.27
TRKLD	Truck Loading	VOC	1.33	1.91

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
TRKVCU	Condensate Truck Loading VCU	NO_x	5.11	22.40
		CO	2.96	12.99
		VOC	1.02	1.47
		SO_2	0.02	0.09
		PM	0.28	1.21
		PM_{10}	0.28	1.21
		$PM_{2.5}$	0.28	1.21
WWLD	Wastewater Truck Loading	VOC	3.95	0.03
WWTK1	Wastewater Tank	VOC	0.18	<0.01
TK1902	Spent Scavenger Tank	VOC	0.01	<0.01
SCAVLD	Spent Scavenger Loading	VOC	<0.01	<0.01
DSLTK1	Diesel Tank	VOC	0.08	<0.01
DSLTK2	Diesel Tank	VOC	0.08	<0.01
DSLTK3	Diesel Tank	VOC	0.08	<0.01
DSLTK4	Diesel Tank	VOC	0.08	<0.01
FWPTK1	Diesel Tank	VOC	0.05	<0.01
FWPTK2	Diesel Tank	VOC	0.05	<0.01
GDFTK1	Diesel Tank	VOC	0.08	<0.01
GDFTK2	Gasoline Tank	VOC	14.52	0.31
AMNTK1	Amine Storage Tank	VOC	<0.01	<0.01
AMNSRG1	Amine Surge Tank - MSS	VOC	<0.01	<0.01
AMNSRG2	Amine Surge Tank - MSS	VOC	<0.01	<0.01
AMNSRG3	Amine Surge Tank - MSS	VOC	<0.01	<0.01
FUG	Fugitive Emissions (6)	VOC	18.12	79.40
		H_2S	<0.01	<0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates (4)	
TRKMSS	Truck Loading (MSS)	VOC	43.05	0.49

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
H_2S - hydrogen sulfide
(4) Planned startup and shutdown (SS) lbs/hour emissions for all pollutants are authorized even if not specifically identified as SS.
(5) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(6) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

Date: DRAFT

Emission Sources - Maximum Allowable Emission Rates

Permit Number GHGPSDTX123M1

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

Air Contaminants Data

TRB1-TRB18	Annual cap Six Propane, Six Ethylene, and Six Methane Refrigeration Turbines	CO[illegible]	3,963,366
		[illegible]$_4$ (5)	75
		N_2O (5)	8
		CO_2e	3,967,486
TO-1	Thermal Oxidizer	[illegible]	360,494
		C[illegible]	11
		N_2O ([illegible]	<1
		[illegible]O_2e	360,789
TO-2	[illegible]al Oxidizer	C[illegible]	360,494
		CH_4 (5)	11
		N_2O (5)	<1
		CO_2e	360,789
TO-3	T[illegible]al Oxidizer	CO_2 (5)	360,494
		CH_4 (5)	11
		N_2O (5)	<1
		CO_2e	360,789
WTDYFLR[illegible]TDYFLR2	[illegible]nual Flare Cap (Continuous [illegible] MSS)	CO_2 (5)(6)	339,287
		CH_4 (5)(6)	1,682
		N_2O (5)(6)	<1
		CO_2e (6)	381,499
MRNFLR	Marine Flare	CO_2 (5)	87,889
		CH_4 (5)	672.6
		N_2O (5)	<1
		CO_2e	104,759

Emission Sources - Maximum Allowable Emission Rates

GEN1	Standby Generator 1	CO_2 (5)	129
		CH_4 (5)	<1
		N_2O (5)	<1
		CO_2e	129
GEN2	Standby Generator 2	CO_2 (5)	129
		[illegible]	<1
		[illegible] (5)	<1
		CO_2e	129
GEN3	Standby Generator 3	CO_2 (5)	129
		CH_4 [illegible]	<1
		[illegible]	<1
		[illegible]	129
GEN4	Standby Gen[illegible]tor	CO_2	129
		CH_4 (5)	<1
		[illegible]	<1
		CO_2e	129
FWPUMP1	Diesel F[illegible]ater Pump	CO_2 (5)	24
		CH_4 (5)	<1
		N_2O (5)	<1
		CO_2e	24
FWPU[illegible]	Die[illegible]irewater Pump 2	CO_2 (5)	24
		CH_4 (5)	<1
		N_2O (5)	<1
		CO_2e	24
TRKVCU	[illegible]ondensate Truck Loading VCU (6)	CO_2 (5)	21,859
		CH_4 (5)	1
		N_2O (5)	<1
		CO_2e	21,947

Emission Sources - Maximum Allowable Emission Rates

FUG	Fugitive Emissions (5)(6)	CO_2 (5)	12
		CH_4 (5)	143
		CO_2e	3590
MSS-BOG	BOG Compressor MSS Venting	CH_4 (5)	1
		CO_2e	19

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) CO_2 - carbon dioxide
N_2O - nitrous oxide
CH_4 - methane
HFCs - hydrofluorocarbons
PFCs - perfluorocarbons
SF_6 - sulfur hexafluoride
CO_2e - carbon dioxide equivalents based on the following Global Warming Potentials (1/2015):
CO_2 (1), N_2O (298), CH_4(25), SF_6 (22,800), HFC (various), PFC (various)
(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period. These rates include emissions from maintenance, startup, and shutdown.
(5) Emission rate is given for informational purposes only and does not constitute an enforceable limit.
(6) Emissions updated to be consistent with the records required by 30 TAC §116.615(4)(b)

Date: DRAFT

Permit Amendment
Source Analysis & Technical Review

Company	**Corpus Christi Liquefaction, LLC**	Permit Numbers	**105710, PSDTX1306M1 and GHGPSDTX123M1**
City	**Gregory**	Project Number	**327940**
County	**San Patricio**	Regulated Entity Number	**RN104104716**
Project Type	**Amendment and Voluntary Update**	Customer Reference Number	**CN604136374**
Project Reviewer	**Lyndon Poole, P.E.**	Received Date	**April 20, 2021**
Site Name	**Corpus Christi Liquefaction**		

Project Overview

Corpus Christi Liquefaction, LLC (CCL), a subsidiary of Cheniere Energy, Inc., owns and operates a natural gas liquefaction and export terminal located in Gregory, San Patricio County, Texas. The liquified natural gas (LNG) terminal includes three liquefaction trains ("Stage I/II Project") authorized under New Source Review (NSR) Permit Number 105710 and Prevention of Significant Deterioration (PSD) Permit Numbers PSDTX1306M1 and GHGPSDTX123M1. CCL has submitted an amendment application to update as-built flare emissions and operations: to correct stream compositions and vent rates, to authorize flaring of boil-off gas from LNG tanks when the upstream Sinton Compressor Facility is shut down, and to remove the Totally Enclosed Ground Flare (TEGF) from the permit. The application also requests authorization of a new LNG marine loading scenario.

The as-built portion of the proposed amendment is considered a retrospective correction of representations associated with the original CCL Stage I/II Project, authorized by a Prevention of Significant Deterioration (PSD) permit issued September 12, 2014. Subsequent as-built amendments also included a modification of the PSD permit on July 20, 2018. The application also includes a voluntary update to the Greenhouse Gas (GHG) PSD permit. For additional detail please see the Project Description section below.

Emission Summary

A					
PM	85.30	85.30	0.00	0.00	0.00
PM_{10}	85.30	85.30	0.00	0.00	0.00
$PM_{2.5}$	85.30	85.30	0.00	0.00	0.00
VOC	353.13	364.63	11.50	364.63	10.99
NO_X	3,541.40	3,545.79	4.39	3,545.79	10.52
CO	3,621.77	3,717.20	95.43	3,717.20	10.89
SO_2	49.39	49.48	0.09	49.48	0.01
H_2S	0.31	[illegible]	0.00	0.31	0.01
CO_2	5,474,166	5,494,[illegible]9	[illegible]20,293	5,494,459	2,713
CH_4	2,468.2	2,613.5	[illegible]	2,613.5	6.60
N_2O	20.00	20.00	[illegible]0	20.00	0.01
CO_2 Equivalent	5,[illegible]226	[illegible]62,201	23,975	5,562,231	2,945

Notes: Column D = Column C minus Column B.
Column E represents a retrospective correction of the original authorization, conservatively based on new proposed allowable emissions minus baseline (assuming baseline emissions = zero).
Column F represents new project emission increases based on a federal analysis of the 2-vessel loading scenario. These emissions are also conservatively included in the retrospective values (Column E).

Compliance History Evaluation - 30 TAC Chapter 60 Rules

A compliance history report was reviewed on:	October 19, 2023
Site rating & classification:	3.33 / Satisfactory
Company rating & classification:	3.33 / Satisfactory
Has the permit changed on the basis of the compliance history or rating?	No.
Did the Regional Office have any comments? If so, explain.	No.

Public Notice Information

Requirement	
Legislator letters mailed	**4/23/2021**
Date 1st notice published	**5/13/2021**

Requirement	
Publication Name: **News of San Patricio**	
Pollutants: **Carbon monoxide, hydrogen sulfide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less and sulfur dioxide.**	
Date 1st notice Alternate Language published	**5/15/2021**
Publication Name (Alternate Language): **Tejano y Grupero News**	
1st public notice tearsheet(s) received	**6/01/2021**
1st public notice affidavit(s) received	**6/01/2021**
1st public notice certification of sign posting/application availability received	**6/24/2021**
SB709 Notification mailed	**06/03/2021, 12/07/2021, 05/05/2022, 9/22/2022**
Date 2nd notice published	**5/26/2022**
Publication Name: **News Of San Patricio**	
Pollutants: **Carbon monoxide, hydrogen sulfide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less, sulfur dioxide, and hazardous air pollutants**	
Date 2nd notice published (Alternate Language)	**6/01/2022**
Publication Name (Alternate Language): **Tejano Y Grupero News**	
2nd public notice tearsheet(s) received	**06/01/2021, 06/08/2022**
2nd public notice affidavit(s) received	**06/08/2022**
2nd public notice certification of sign posting/application availability received	**06/24/2021, 07/06/2022**

Public Interest

Number of comments received	**23**
Number of meeting requests received	**25**
Number of hearing requests received	**23**
Date meeting held	**6/30/2022**
Date response to comments filed with OCC	**7/14/2023**
Date of SOAH hearing	

Federal Rules Applicability

Requirement	
Subject to NSPS?	**Yes.**
Subparts	**A, Kb, IIII, & KKKK.**
Subject to NESHAP?	**No.**
Subparts	**N/A.**
Subject to NESHAP (MACT) for source categories?	**Yes.**
Subparts	**A, EEEE, YYYY, & ZZZZ.**

Nonattainment review applicability:
This site is located in San Patricio County, which is in attainment or unclassified for all pollutants. Therefore, nonattainment review is not applicable.

PSD review applicability:
The site is a major named source under PSD. The proposed as-built project within this amendment, including increased flare vent gas rates (EPNs WTDYFLR1 and WTDYFLR2), stream composition updates at the marine flare (EPN MRNFLR), and flaring of boil-off gas (BOG) when the Sinton Compressor Facility is required by regulation to shut down, is subject to retrospective review based on the original authorization of the Stage I/II construction project (Project No. 182514), which was subject to PSD review in 2014. Since this portion of the current amendment is an as-built correction to the 2014 project, the potential to emit in the original project increase analysis has been corrected as noted in the following table:

Retrospective (As-Built) Project			
Pollutant	PSD Significant Emission Rate (tpy)	Corrected (Retrospective) Project Increase(1) (tpy)	PSD Review Required? (2)
VOC	40	364.63	Yes
NO_X	40	3,545.79	Yes
CO	100	3,717.20	Yes
SO_2	40	49.48	Yes
CO_2e	75,000	5,562,231	Yes

Note (1) The corrected project increase is conservatively based on new proposed allowable emissions minus a baseline of zero.
Note (2) PSD review was conducted on the original authorization (Project No. 182514), and on a subsequent as-built amendment (Project No. 274624) which corrected the original project emission rates.

In addition to correcting the original project increase as shown above (i.e., zero baseline to proposed allowable), the retrospective review also examines the magnitude of the emission corrections themselves, in order to determine whether the corrected values exceed the PSD significant emission rate.

This permit application (Project No. 327940) originally contained a correction that would have exceeded the significant emission rate for CO. However, on October 7, 2022 the applicant provided application revisions that reduced the allowable-to-allowable increases for the wet/dry flares. The revised emission calculations were based on a lower vent rate to the flares (from 873 lb/hr per train to 625 lb/hr per train). The resulting emission corrections are below the major modification thresholds, and compliance will be demonstrated through the flare monitoring requirements of Special Condition No. 14.E and the monthly emission calculations required by Special Condition No. 14.N.

Requirement

Retrospective (As-Built) Project			
Pollutant	PSD Significant Emission Rate (tpy)	Magnitude of Newly Quantified Corrections (tpy)	New PSD Review Triggered?
VOC	40	11.50	No
NO_X	40	4.39	No
CO	100	95.43	No
SO_2	40	0.09	No
CO_2e	75,000	23,975	No

As indicated in the table above, the retrospective emission correction values do not trigger a new PSD review.

The new project within this amendment includes a proposal to vent two LNG carriers to the marine flare (EPN MRNFLR) simultaneously, instead of one carrier at a time. This scenario does not result in any allowable annual emission increases. However, it does result in short-term emissions increases at the marine flare, and therefore is considered a modification. Further, the short-term increases could result in actual emission increases in the annual rates. A federal analysis was therefore performed. Since the Train 3 facilities have been in operation less than two years, the current allowable emission rates at the marine flare were used as baseline emissions. The resulting project increases are shown in the following table:

New Project			
Pollutant	PSD Significant Emission Rate (tpy)	New Project Increase (tpy)	PSD Review Required?
VOC	40	10.99	No
NO_X	40	10.52	No
CO	100	10.89	No
SO_2	40	0.01	No
H_2S	10	0.01	No
GHG	N/A. GHG PSD is not applicable if non-GHG pollutants do not trigger PSD review.		

The new project therefore does not trigger PSD review.

Title V Applicability - 30 TAC Chapter 122 Rules

Requirement

Title V applicability: This site is subject to Title V and operates under Permit O3580.

Requirement
Periodic Monitoring (PM) applicability: Periodic monitoring is applicable because the site is a major source subject to 30 TAC Chapter 122. • Flare periodic monitoring is included in CAM requirements below. • Continuous monitoring of H_2S (1-hour average) is required for fuel used for thermal oxidizers, flare pilots, and turbines. Fuel is limited to 4 ppmv H_2S.
Compliance Assurance Monitoring (CAM) applicability: CAM is applicable because the site is a major source subject to 30 TAC Chapter 122. The affected flares, EPNs: WTDYFLR1, WTDYFLR2 control more than 100 ton per year of VOC from the LNG trains and are subject to CAM. The following is required for the flares: • The flare pilot flames are continuously monitored by a thermocouple or an infrared monitor to indicate the control device is functioning • A continuous flow monitor is required to measure vent stream flow (hourly average). • A continuous composition monitor or calorimeter is required to ensure minimum heating value (hourly average). • A monthly audio, visual, and olfactory (AVO) inspection is required for the flare capture systems. • A bypass is not authorized. • No visible emissions are authorized for the flares except for a maximum of 5 minutes per any two-hour period.

Process Description

CCL currently operates a natural gas liquefaction and export terminal, which includes the Stage I/II project. Stage I project (Train 1 and 2) is completed, while Stage II (Train 3) is currently under commissioning. LNG is exported via LNG carriers from the marine terminal.

The Stage I/II project is designed to operate three trains continuously (8,760 hours per year) using eighteen GE LM2500+G4 natural gas-fired refrigeration compressor turbines, six on each train. There are two methane, two propane, and two ethylene refrigeration turbines per train. Each train is also equipped with an Acid Gas Removal Unit (AGRU). VOC in the acid gas is controlled using thermal oxidizers or the wet and dry gas flares when the thermal oxidizers are out of service. Heavier compounds in the natural gas are also removed as condensate. Other facilities at the site include gasoline and diesel storage tanks, trucks, standby generators, diesel firewater pump engines, and a marine ground flare.

Project Scope

In September 2014, CCL was authorized to construct the Terminal under the Stage I/II Project (Project No. 182514). Additional amendments were approved on July 20, 2018 (Project No. 274624) and November 4, 2020 (Project No. 310514) to update the permit representations to reflect as-built design of the Stage I/II project. In Project No. 310514, CCL incorporated Standard Permit 158378 by consolidation, which authorized the installation of a totally enclosed ground flare (TEGF).

In the current amendment project, CCL is requesting the following changes to Permit 105710, PSDTX1306M1, and GHGPSDTX123M1:

1. Elevated Flares (EPNs WTDFLR1 and WTDFLR2):
   - Update previously represented vent gas rates to the wet and dry flares and authorize associated emission increases. CCL represents that through operating experience, including the initial startup of Train 3, it has been observed that the process vent gas rates to the wet and dry flares are greater than represented in the November 4, 2020 amendment (Project No. 310514).

2. Marine flare (EPN: MRNFLR):
    a. Authorize simultaneous venting of two LNG carriers and update emissions accordingly. This is the only new project. All other changes are considered as-built or retrospective.
    b. Update represented stream composition to include boil-off gas (BOG) from the LNG tanks.
    c. Update marine flare emissions to account for boil-off gas control during shutdowns at the upstream Sinton Compressor Station. During required regulatory Emergency Shutdown (ESD) testing at the upstream Sinton compressor facility, all CCL trains have to be shut down; therefore BOG, which is normally routed back to the process trains, has to be routed to the marine flare.

3. Remove the totally enclosed ground flare (TEGF), EPN: STG1_2GF from the permit. CCL has determined that the existing control devices can handle the desired steams and the ground flare is therefore not necessary.

4. Update GHG permit (GHGPSDTX123M1) to reflect emission increases from the marine and wet/dry flares.

A summary of changes to the special conditions (SCs) and MAERTs appear below:

Changes to NSR (non-GHG) Special Conditions		
Former SC #	New SC #	Change
7	7	Updated Paragraph A to specify 1-hour averaging period for H_2S monitoring of fuel. Added new Paragraph B to require continuous monitoring of H_2S concentration in fuel gas. Added record keeping requirement for H_2S content in turbine fuel to Paragraph C.
14	14	Added Paragraphs E through I to flare condition to specify requirements for flow monitor and composition analyzer or calorimeter. Added capture system requirements in Paragraphs J and K. Added Paragraph L to allow 18 months to establish compliance with new Paragraphs E through K, and to specify that existing monitors shall be used, along with stream composition and represented calculation methods, to demonstrate MAERT compliance during the 18-month interim period. Added Paragraph M to specify flow and composition data required by Paragraph E shall be used to calculate lb/hr emission rates. Added Paragraph N for annual MAERT compliance, and for demonstration that the retrospective emissions in this project will not exceed major modification thresholds.
-	16	Added operational restriction to limit the number of marine vessels simultaneously venting to marine flare (not to exceed two vessels).
-	17	Added requirement for boil-off gas to be routed to marine flare during emergency shutdown (ESD) testing at upstream Sinton Compressor Facility. Also specified that all marine loading must be shut down during this period. Mass emission rate monitoring is required to ensure that calculated emissions are not exceeded.
16	-	Deleted conditions and references to multi-point ground flare and associated capture system, since installation of the ground flare was cancelled.
17	-	
25	25	Added new Paragraph D to limit propane depressurization to 56 hours per year, as represented in the air quality analysis.
28	28	Added record keeping requirements for H_2S concentration in fuel gas, flare waste gas flow, flare gas composition or heating value, flare capture systems, and short-term flare emission rates.
29	-	Deleted AMOC/AMEL provisions associated with cancelled ground flare.

Changes to NSR (non-GHG) Special Conditions		
Former SC #	New SC #	Change
-	29	Added table listing PBRs incorporated by reference.

Changes to NSR (non-GHG) MAERT	
EPN	Change
WTDFL1	Revised emission rates according to retrospective project.
WTDFLR2	Revised emission rates according to retrospective project.
STG1_2GF	Deleted multi-point ground flare (normal and MSS entries) due to project cancellation.
WTDFL1 and WTDFLR2	Revised emission rates for flare cap according to retrospective project.
MRNFLR	Revised emission rates according to retrospective and new projects.

Changes to GHG Special Conditions		
Former SC #	New SC #	Change
7	7	Added Paragraphs E through I to flare condition to specify requirements for flow monitor and composition analyzer and calorimeter. Also added capture system requirements in Paragraphs J and K.
9	-	Deleted conditions and references to multi-point ground flare since installation of ground flare was cancelled.

Changes to GHG PSDTX123M1 MAERT	
EPN	Change
STG1_2GF	Deleted multi-point ground flare (normal and MSS entries) due to project cancellation.
WTDFL1 and WTDFLR2	Revised emission rates for flare cap according to retrospective project.
MRNFLR	Revised emission rates according to retrospective and new projects.

Best Available Control Technology

Wet/Dry Gas Flares	WTDYFLR1, WTDYFLR2, MRNFLR	**VOC:** Meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. Flow monitor is required. Composition or BTU analyzer is required. **SO_2/H_2S:** Flare pilot fuel limited to no more than 4 ppmv H_2S.
Marine Loading of LNG	MRNFLR	**Methane (CH_4):** Use of cryogenic temperature and insulation of loading arms to minimize boil-off gas. Boil-off gas routed to the marine flare. **VOC:** Routing warm or inerted vapors during vessel conditioning to the marine flare. Flare meets 40 CFR 60.18. Destruction Efficiency: 99% for certain compounds up to three carbons, 98% otherwise. Flow monitor is required. Composition or BTU analyzer is required.

Permits Incorporation

Authorization		
PBR 106.261	Facilities (Emission Limitations) - Fugitives	Reference
PBR 106.262	Facilities (Emission and Distance Limitations) - Fugitives	Reference
PBR 106.263	Planned Maintenance, Startup and Shutdown	Reference
PBR 106.355	Pipeline Metering, Purging, and Maintenance	Reference
PBR 106.359	Planned Maintenance, Startup, and Shutdown (MSS) at Oil and Gas Handling and Production Facilities - Abrasive Blasting	Reference
PBR 106.472	Diesel Storage Tanks - EPNs DSLTK6, DSLTK7, DSLTK8	Reference
PBR 106.473	Gasoline Storage Tank - EPN GDFTK3	Reference
PBR 106.478	Diesel Storage Tank - EPN DSLTK5	Reference
PBR 106.511	Portable and Emergency Engines and Turbines - EPNs GEN5, GEN7	Reference
PBR 106.512	Stationary Engines and Turbines - EPNs GEN6, GEN8, GEN9, GEN11, GEN12	Reference

Impacts Evaluation

Was modeling conducted? **Yes.** Type of Modeling: **AERMOD Version 21112**

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

Additional site/land use information: Site is on the north shore of Corpus Christi Bay and surrounded by other industrial sites. The closest residences are 7,600 feet to the west of the site.

I. NAAQS Analysis

Project emissions of SO_2, NOx (as NO_2), CO, and Ozone (O_3) were evaluated in an air quality analysis for potential impacts relative to the National Ambient Air Quality Standards (NAAQS). AERMOD Version 21112 was utilized to model predicted impacts in a refined screening mode. The air dispersion modeling was audited by the TCEQ Air Dispersion Modeling Team (ADMT). Results are summarized as follows:

Table 1. Modeling Results for PSD De Minimis Analysis in Micrograms Per Cubic Meter ($\mu g/m^3$)

Pollutant	Averaging		
SO_2	1-hr	4	7.8
SO_2	3-hr	3	25
SO_2	24-hr	2	5
SO_2	Annual	0.4	1
NO_2	1-hr	80	7.5
NO_2	Annual	8	1
CO	1-hr	339	2000
CO	8-hr	123	500

Table 2. M ing Results for one PSD De nimis Analysisin Parts per Billion(ppb)

tant	Averaging		
O_3	8-hr	3	1

Table 3. Modeling Results for PSD Monitoring Significance Levels

Pollutant			
SO_2	24-hr	2	13
NO_2	Annual	8	14
CO	8-hr	123	575

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

NO_2	1-hr	142	35	177	188
NO_2	Annual	22	4	26	100

Table 5. Total Ozone Concentrations for PSD NAAQS (Concentrations > De Minimis)

O_3	8-hr	5	61	66	

Table 6. Results for PSD Increment Analysis

Pollutant			
NO_2	Annual		25

As indicated in the tables above, the predicted impacts of criteria pollutants are not expected to cause an exceedance of the NAAQS.

II. State Property Line Analysis

Project emissions of SO_2 were evaluated to demonstrate compliance with state standards for net ground-level concentrations, in accordance with 30 TAC Chapter 112. Results are summarized in the table below:

Table 7. Project-Related Modeling Results for State Property Line

Pollutant			
SO_2	1-hr	4	20.42

As indicated above, the predicted impacts of SO_2 are not expected to cause an exceedance of the state property line standards.

III. Health Effects Analysis

Project emissions of non-criteria pollutants were evaluated for potential impacts in accordance with the TCEQ Modeling and Effects Review Applicability Analysis (MERA) Guidance.

Carbon dioxide, ethane, methane, nitrogen, and propane are classified as simple asphyxiants and do not require a health effects review. These constituents therefore fell out at MERA Step 0. All remaining constituents proceeded to review under MERA Step 2.

Emission rates of xylene, ethanolamine, and triazinetriethanol were below the de minimis thresholds of MERA Step 2 and therefore fell out of the MERA evaluation at that stage.

The following constituents had predicted impacts that were below 10 percent of their respective ESL, and therefore fell out at at project modeling: isobutane, n-butane, isopentane, n-pentane, n-hexane, n-heptane, cyclohexane, cyclopentane, n-decane, ethylbenzene, methylcyclopentane, n-nonane, n-octane, toluene, xylene (-o), xylene (-p), lube oil, and Therminol 55.

Ethylene, benzene, and aMDEA Solution (n-methyldiethanolamine) proceeded to a site-wide modeling analysis. Results of the site-wide analysis are summarized as follows:

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

N-Methyldiethanolamine	105-59-9	1-hr	52	96
N-Methyldiethanolamine	105-59-9	Annual	4.16	9.6
Benzene	71-43-2	1-hr	61	170
Benzene	71-43-2	Annual	0.03	4.5
Ethylene	74-85-1	1-hr	137	1400
Ethylene	74-85-1	Annual	1.58	34

Note (1): 1-hr GLCmax values reproduced from ADMT memoranda dated February 1, 2022 and April 27, 2022. Annual GLCmax values for benzene and ethylene based on results reported in Health Effects Modeling Results portion of EMEW dated March 2022. Annual GLCmax value for n-methyldiethanolamine based on multiplying the 1-hr GLCmax value by 0.08 (annual conversion factor).

As indicated above, the predicted impacts of non-criteria pollutants are not expected to cause adverse effects on public health.

For further details on the air quality analysis, please refer to ADMT memoranda dated February 1, 2022 and April 27, 2022 (WCC Content ID Numbers 5929311 and 6052807, respectively).

DRAFT

Project Reviewer	Date	Section Manager	Date
Lyndon Poole, P.E.		Kristyn Campbell	

TCEQ Interoffice Memorandum

To: Lyndon Poole, P.E.
Energy Section

Thru: Chad Dumas, Team Leader
Air Dispersion Modeling Team (ADMT)

From: Sara Hill and Philip Leung
ADMT

Date: February 1, 2022

Subject: Air Quality Analysis Audit – Corpus Christi Liquefaction, LLC (RN104104716)

1. Project Identification Information

Permit Application Number: 105710
NSR Project Number: 327940
ADMT Project Number: 7625
County: San Patricio
Published Map: \\tceq4avmgisdata\GISWRK\APD\MODEL PROJECTS\7625\7625.pdf

Air Quality Analysis: Submitted by DiSorbo Consulting, LLC, October 2021, on behalf of Corpus Christi Liquefaction, LLC. Additional information was provided November and December 2021, and January 2022.

2. Report Summary

The air quality analysis (AQA), as supplemented by the ADMT, is acceptable for all review types and pollutants. The results are summarized below.

A. De Minimis Analysis

A De Minimis analysis was initially conducted to determine if a full impacts analysis would be required. The De Minimis analysis modeling results indicate that 1-hr and annual NO_2 exceed the respective de minimis concentrations and require a full impacts analysis. The De Minimis analysis modeling results for all averaging times of SO_2 and CO indicate that the project is below the respective de minimis concentrations and no further analysis is required.

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

The ozone De Minimis level is the EPA recommended De Minimis level. The use of the EPA recommended De Minimis level is sufficient to conclude that a proposed source will not cause or contribute to a violation of an ozone NAAQS based on the analyses documented in EPA guidance and policy memoranda[3].

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

Table 1. Modeling Results for PSD De Minimis Analysis in Micrograms Per Cubic Meter (µg/m^3)

Pollutant	Averaging		
SO_2	1-hr	4	7.8
SO_2	3-hr	3	25
SO_2	24-hr	2	5
SO_2	Annual	0.4	1
NO_2	1-hr	80	7.5
NO_2	Annual	8	1
CO	1-hr	339	2000
CO	8-hr	123	500

The GLCmax for 1-hr NO_2 is based on the highest five-year average of the maximum predicted concentrations determined for each receptor.

The GLCmax reported in the AQA for 1-hr SO_2 represents the maximum predicted concentration over five years of meteorological data rather than the highest five-year average of the maximum predicted concentrations determined for each receptor. The ADMT determined overall conclusions do not change since the difference between the two GLCmax are less than 0.3 µg/m^3**.**

The applicant did not provide an annual SO_2 analysis to determine if an annual Full Increment analysis is needed. The ADMT supplemented the annual SO_2 results in Table 1 above by multiplying the 1-hr maximum predicted concentration by 0.1.

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

Intermittent guidance was relied on for the 1-hr NO_2 PSD De Minimis analysis.

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

Pollutant	Averaging		
O_3	8-hr	3	1

The applicant performed an O_3 analysis as part of the PSD AQA. The applicant evaluated project emissions of O_3 precursor emissions (NO_x and VOC). For the project NO_x and VOC emissions, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as Modeled Emission Rates for Precursors (MERPs). The basic idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary

pollutants impacts from a source. Using data associated with the 3000 tpy and 500 tpy (NO_x and VOC, respectively) Harris County source, the applicant estimated an 8-hr O_3 concentration of 3 ppb. When the estimates of ozone concentrations from the project emissions are added together, the results are greater than the De Minimis level.

The applicant reported two different project NO_x emissions totals in the AQA. The ADMT confirmed that the appropriate project NO_x emissions total was used in the calculations.

B. Air Quality Monitoring

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

Table 3. Modeling Results for PSD Monitoring Significance Levels

Pollutant			
SO_2	24-hr	2	13
NO_2	Annual	8	14
CO	8-hr	123	575

The GLCmax represent the maximum predicted concentrations over five years of meteorological data.

Since the project has a net emissions increase of 100 tons per year (tpy) or more of volatile organic compounds or nitrogen oxides, the applicant evaluated ambient O_3 monitoring data to satisfy requirements in 40 CFR 52.21 (i)(5)(i)(f).

A background concentration for O_3 was obtained from the EPA AIRS monitor 483550025 located at 902 Airport Blvd, Corpus Christi, Nueces County. A three-year average (2018-2020) of the annual fourth highest daily maximum 8-hr concentrations was used in the analysis (61 ppb). The use of the monitor is reasonable based on the applicant's analysis of the surrounding land use and a quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site. The applicant also reviewed EPA AIRS monitor 483550026; however, the background concentration from EPA AIRS monitor 483550025 was more conservative. The background concentration was also used as part of the NAAQS analysis.

C. National Ambient Air Quality Standard (NAAQS) Analysis

The De Minimis analysis modeling results indicate that 1-hr and annual NO_2 and 8-hr O_3 exceed the respective de minimis concentration and require a full impacts analysis. The full NAAQS modeling results indicate the total predicted concentrations will not result in an exceedance of the NAAQS.

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

Pollutant	Averaging Time	GLCmax ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Conc. =	
NO_2	1-hr	142	35	177	188

Pollutant	Averaging Time	GLCmax (µg/m^3)	Background (µg/m^3)	Total Conc. =	
NO_2	Annual	22	4	26	100

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

The annual NO_2 GLCmax is the maximum predicted concentration over five years of meteorological data.

Background concentrations for NO_2 were obtained from the EPA AIRS monitor 480391016 located at 109B Brazoria Hwy 332 West, Lake Jackson, Brazoria County. The three-year average (2016-2018) of the 98th percentile of the annual distribution of the maximum daily 1-hr concentrations was used for the 1-hr NO_2 value. The annual concentration from 2020 was used for the annual NO_2 value. The applicant did not evaluate the most recent available monitoring data for 1-hr NO_2; however, the applicant's use of an older dataset yields more conservative results. The use of this monitor is reasonable based on the applicant's quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site.

Table 5. Total Ozone Concentrations for PSD NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax (ppb)	Background (ppb)	Total Conc. =	
O_3	8-hr	5	61	66	70

The applicant performed an O_3 analysis as part of the PSD AQA. The applicant evaluated project sources and sources within 10 kilometers (km) of the project site authorized within the last two years with significant increases of O_3 precursor emissions (NO_x and VOC). For the NO_x and VOC emissions, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's GAQM. Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs. Using data associated with the 3000 tpy and 500 tpy (NO_x and VOC, respectively) Harris County source, the applicant estimated an 8-hr O_3 concentration of 5 ppb. When the estimates of ozone concentrations from the project emissions are added to the background concentration listed in the table above, the results are less than the NAAQS.

For the estimated 8-hr O_3 concentration, the applicant did not provide justification for using data associated with the 3000 tpy and 90 feet stack height Harris County source for the NO_x MERP and 500 tpy and 10 feet stack height Harris County source for the VOC MERP for all off-property sources that were considered in the estimated 8-hr O_3 concentration. The ADMT conducted a test calculation using the worst-case MERP values for Harris County, and determined that overall conclusions do not change.

D. Increment Analysis

The De Minimis analysis modeling results indicate that annual NO_2 exceeds the respective de minimis concentration and requires a PSD increment analysis.

Table 6. Results for PSD Increment Analysis

Pollutant			
NO_2	Annual	22	25

The GLCmax for annual NO_2 represents the maximum predicted concentration over five years of meteorological data.

E. Additional Impacts Analysis

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

The ADMT evaluated predicted concentrations from the proposed project to determine if emissions could adversely affect a Class I area. The nearest Class I area, Big Bend National Park, is located approximately 565 km from the proposed site.

The predicted concentrations of 1-hr NO_2 and 1-hr SO_2 are greater than de minimis levels at a distance of 50 km from the proposed sources in the direction of the Big Bend National Park Class I area. The Big Bend National Park Class I area is an additional 515 km from the location where the predicted concentrations of 1-hr NO_2 and 1-hr SO_2 are greater than de minimis. Based on the predicted concentration gradients, NO_2 and SO_2 emissions from the proposed project are not expected to adversely affect the Big Bend National Park Class I area.

F. Minor Source NSR and Air Toxics Analysis

Table 7. Project-Related Modeling Results for State Property Line

Pollutant			
SO_2	1-hr	4	20.42

The GLCmax reported in the AQA for 1-hr SO_2 is the highest five-year average of the maximum predicted concentrations determined for each receptor rather than the maximum predicted concentration over five years of meteorological data. The ADMT determined overall conclusions do not change since the difference between the two GLCmax are less than 0.3 µg/m^3.

Table 8. Generic Modeling Results

Source ID	1-hr GLCmax (µg/m^3 per	
WTDYFLR1	0.03	< 0.01
WTDYFLR2	0.03	< 0.01

Source ID	1-hr GLCmax (µg/m^3 per	
FUG	20.44	0.05
FLRM1	0.01	< 0.01
FLRM2	0.01	< 0.01
IFRTK1	23.60	0.06
TRKLD	40.53	0.07
TRKVCU	4.85	0.01
WWTK1	42.66	0.10
WWLD	46.97	0.10
TO1	2.59	0.02
TO2	1.04	0.01
TO3	0.75	<0.01
TRKMSS	42.32	0.09
MRNFLR	0.02	< 0.01
AMNSRG1	54.97	0.14
AMNSRG2	33.71	0.06
AMNSRG3	57.58	0.08
TK1902	58.44	0.11
SCAVLD	46.97	0.10

The UIMs used for model IDs TRKMSS and MRNFLR in the MERA calculations are greater than the model outputs reported above. This is conservative.

Table 9. Minor NSR Site-wide Modeling Results for Health Effects

Pollutant	CAS#	Averaging			
N-methyldiethanolamine	105-59-9	1-hr	52	Eastern Property Line	96

Pollutant	CAS#	Averaging			
benzene	71-43-2	1-hr	61	Western Property Line	170
ethylene	74-85-1	1-hr	137	Eastern Property Line	1400

The GLCmax location is listed in Table 9 above.

The site-wide 1-hr GLCmax for N-methyldiethanolamine (ADEA) was inadvertently reported under annual monoethanolamine on the Health Effect Modeling Results sheet of the EMEW. The results from the modeling output are reported in Table 9 above.

3. Model Used and Modeling Techniques

AERMOD (Version 21112) was used in a refined screening mode.

For the MERA Step 3 health effects analysis, unitized emission rates of 1 lb/hr and 1 tpy were used to predict a generic short-term and long-term impact for each source, respectively. The generic impact was multiplied by the proposed pollutant specific emission rates to calculate a maximum predicted concentration for each source. The maximum predicted concentration for each source was summed to get a total predicted concentration for each pollutant. Health effect pollutants that went on to site-wide modeling were evaluated with pollutant specific modeling.

According to the applicant, EPN AMNTK1 will not operate simultaneously with EPNs AMNSRG1-3. Additionally, the applicant stated that evaluating EPNs AMNSRG1-3 is more conservative than evaluating EPN AMNTK1. However, the applicant did not provide sufficient justification for this statement. The ADMT conducted a test modeling run and determined that evaluating EPNs AMNSRG1-3 is more conservative than evaluating EPN AMNTK1.

For the short term NO_2 analysis, a unitized emission rate of 1 lb/hr was used to predict a generic short-term impact for model IDs WTDFLR1 and WTDFLR2. The worst-case flare associated with the highest unit impact was used to evaluate the full routine emission cap.

For the NO_2 analyses, according to the applicant, the flare MSS emissions (model IDs FLRM1 and FLRM2) can occur at the location of either flare (model IDs WTDYFLR1 or WTDYFLR2). A unitized emission rate of 1 lb/hr was used to predict a generic short-term impact for each flare. However, the location of the worst-case flare (model ID WTDYFLR2) associated with the highest unit impact was not used in the model. The ADMT determined that overall conclusions would not change since the difference in the unit impacts at the location of model IDs WTDYFLR1 and WTDYFLR2 is approximately 0.00001 $\mu g/m^3$ per lb/hr.

The applicant conducted the 1-hr and annual NO_2 NAAQS analyses using the ARM2 model option following EPA guidance.

A. Land Use

User-defined surface characteristics of albedo, Bowen ratio, and surface roughness were calculated with AERSURFACE using a one km radius from an adjacent site discussed below. The calculated surface characteristic values were used as input for the AERMET meteorological processor.

The applicant centered the AERSURFACE analysis approximately 1 km east of the project sources due to outdated NLCD land cover data that contains undeveloped land where the project site is located. A representative center location was chosen where there is an existing facility characterized as industrial land use.

For the AERSURFACE analysis, the applicant determined the surface moisture by reviewing the past 34 years of rainfall records, rather than 30 years of rainfall records. This will not significantly affect overall results.

Elevated terrain was used in the modeling analysis. This selection is consistent with the topographic map, DEMs, and aerial photography.

B. Meteorological Data

The applicant prepared meteorological data files for the 2016-2020 calendar years. Raw surface and upper air meteorological data were processed using AERMET (Version 21112).

Surface Station and ID: Corpus Christi, TX (Station #: 12924)
Upper Air Station and ID: Corpus Christi, TX (Station #: 12924)
Meteorological Dataset: 2020 for health effects analyses; 2016-2020 for all other analyses
Profile Base Elevation: 13.4 meters

C. Receptor Grid

The grid modeled was sufficient in density and spatial coverage to capture representative maximum ground-level concentrations.

The site-wide health effect analyses used a receptor grid with denser coverage around the northern portion of the site. This is acceptable.

A few receptors have elevation discrepancies; however, given the locations of the GLCmax, this is not expected to affect overall results.

D. Building Wake Effects (Downwash)

Input data to Building Profile Input Program Prime (Version 04274) are consistent with the aerial photography, plot plan, and modeling report.

4. Modeling Emissions Inventory

Except as noted below, the modeled emission point and volume source parameters and rates were consistent with the modeling report. The source characterizations used to represent the sources were appropriate.

Model IDs MSTO1-7 have inconsistent reported parameters between the EMEW and the supplemental AQA. However, the more conservative parameters were modeled.

The computation of the effective stack diameters for the flares is consistent with TCEQ modeling guidance.

The ADMT could not confirm several modeled off-property source parameters and emissions rates for the 1-hr and annual NO_2 NAAQS analyses. The ADMT determined that overall conclusions would not change given the locations of the 1-hr and annual NO_2 NAAQS GLCmax.

For the annual benzene analysis at Step 3 of the MERA analysis, the applicant evaluated site-wide emission rates for EPNs TO-(1-3). This is conservative.

For the 1-hr NO_2 de Minimis and NAAQS analyses, emissions from the emergency generators (EPNs SGEN1-4), emergency fire water pump engines (EPNs FWPUMP1-2, MSFWP1-2), diesel generators (EPNs MSGEN1-8), and wet/dry gas flare propane depressuring MSS (EPN FLRM1) were modeled with an annual average emission rate, consistent with EPA guidance for evaluating intermittent emissions. Emissions from the emergency generators, emergency fire water pump engines, and diesel generators were represented to occur for no more than 100 hours per year, each. Emissions from the wet/dry gas flare propane depressuring MSS were represented to occur for no more than 56 hours per year.

With the exceptions noted above, maximum allowable hourly emission rates were used for the short-term averaging time analyses, and annual average emission rates were used for the annual averaging time analyses.

TCEQ Interoffice Memorandum

To: Lyndon Poole, P.E.
Energy Section

Thru: Chad Dumas, Team Leader
Air Dispersion Modeling Team (ADMT)

From: Sara Hill
ADMT

Date: April 27, 2022

Subject: Air Quality Analysis Audit – Corpus Christi Liquefaction, LLC (RN104104716)

1. Project Identification Information

Permit Application Number: 105710
NSR Project Number: 327940
ADMT Project Number: 7883
County: San Patricio
Published Map: \\tceq4avmgisdata\GISWRK\APD\MODEL PROJECTS\7883\7883.pdf

Air Quality Analysis: Submitted by DiSorbo Consulting, LLC, March 2022, on behalf of Corpus Christi Liquefaction, LLC. Additional information was provided April 2022.

2. Report Summary

This is the second modeling audit for this NSR Project number. The modeling audit was conducted to remove the operational limitations previously modeled for EPNs AMNSRG1-3 and AMNTK1 in the n-methyldiethanolamine (aMDEA) analysis. This second modeling audit memorandum only addresses the evaluation of aMDEA. The results for all other demonstrations can be found in the first modeling audit memorandum dated February 1, 2022 (WCC Content ID 5929311).

The air quality analysis is acceptable. The results are summarized below.

A. Minor Source NSR Air Toxics Analysis

Table 1. Minor NSR Site-wide Modeling Results for Health Effects

n-methyldiethanolamine	105-59-9	1-hr	52	E property line	96

3. Model Used and Modeling Techniques

AERMOD (Version 21112) was used.

A. Land Use

User-defined surface characteristics of albedo, Bowen ratio, and surface roughness were calculated with AERSURFACE using a one km radius from an adjacent site discussed below. The calculated surface characteristic values were used as input for the AERMET meteorological processor.

The applicant centered the AERSURFACE analysis approximately 1 km east of the project sources due to outdated NLCD land cover data that contains undeveloped land where the project site is located. A representative center location was chosen where there is an existing facility characterized as industrial land use.

Elevated terrain was used in the modeling analysis. This selection is consistent with the topographic map, DEMs, and aerial photography.

B. Meteorological Data

The applicant prepared meteorological data files for the 2020 calendar year. Raw surface and upper air meteorological data were processed using AERMET (Version 21112).

Surface Station and ID: Corpus Christi, TX (Station #: 12924)
Upper Air Station and ID: Corpus Christi, TX (Station #: 12924)
Meteorological Dataset: 2020
Profile Base Elevation: 13.4 meters

C. Receptor Grid

The grid modeled was sufficient in density and spatial coverage to capture representative maximum ground-level concentrations.

D. Building Wake Effects (Downwash)

Building downwash is not applicable for volume source modeling.

4. Modeling Emissions Inventory

Except as noted below, the modeled emission volume source parameters and rates were consistent with the modeling report. The source characterizations used to represent the sources were appropriate.

The applicant reported source model ID AMNTK1 with elevation and lateral dimension parameters that are inconsistent with the modeled parameters. However, the ADMT conducted test modeling with the reported parameters and determined that overall results do not change.

Maximum allowable hourly emission rates were used for the short-term averaging time analysis.

The TCEQ is committed to accessibility.
To request a more accessible version of this report, please contact the TCEQ Help Desk at (512) 239-4357.

Compliance History Report

Compliance History Report for CN604136374, RN104104716, Rating Year 2020 which includes Compliance History (CH) components from September 1, 2015, through August 31, 2020.

Customer, Respondent, or Owner/Operator:	CN604136374, Corpus Christi Liquefaction, LLC	**Classification:** SATISFACTORY	**Rating:** 3.33
Regulated Entity:	RN104104716, CORPUS CHRISTI LIQUEFACTION	**Classification:** SATISFACTORY	**Rating:** 3.33
Complexity Points:	13	**Repeat Violator:** NO	
CH Group:	14 - Other		
Location:	622 HWY 35 GREGORY, TX 78359, SAN PATRICIO COUNTY		
TCEQ Region:	REGION 14 - CORPUS CHRISTI		

ID Number(s):

AIR OPERATING PERMITS PERMIT 3580
AIR OPERATING PERMITS ACCOUNT NUMBER SDA005E
PUBLIC WATER SYSTEM/SUPPLY REGISTRATION 2050079
AIR NEW SOURCE PERMITS PERMIT 105710
AIR NEW SOURCE PERMITS EPA PERMIT GHGPSDTX123
AIR NEW SOURCE PERMITS EPA PERMIT GHGPSDTX157
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX1496
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX1306
AIR NEW SOURCE PERMITS PERMIT 139479
AIR NEW SOURCE PERMITS REGISTRATION 167968
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX1306M1
AIR NEW SOURCE PERMITS EPA PERMIT GHGPSDTX123M1
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX1496M1
AIR NEW SOURCE PERMITS EPA PERMIT PSDTX1306M2
AIR NEW SOURCE PERMITS EPA PERMIT GHGPSDTX157M1
AIR NEW SOURCE PERMITS AFS NUM 4840900071
WASTEWATER PERMIT WQ0005367000
WASTEWATER EPA ID TX0134002
AIR EMISSIONS INVENTORY ACCOUNT NUMBER SDA005E
TAX RELIEF ID NUMBER 24569
TAX RELIEF ID NUMBER 23975
TAX RELIEF ID NUMBER 24545
TAX RELIEF ID NUMBER 23760
TAX RELIEF ID NUMBER 23498
TAX RELIEF ID NUMBER 24547
TAX RELIEF ID NUMBER 23495
TAX RELIEF ID NUMBER 23912
TAX RELIEF ID NUMBER 23911
TAX RELIEF ID NUMBER 23494
TAX RELIEF ID NUMBER 23761
TAX RELIEF ID NUMBER 23762
TAX RELIEF ID NUMBER 23763
TAX RELIEF ID NUMBER 22908
TAX RELIEF ID NUMBER 23057
TAX RELIEF ID NUMBER 22931
TAX RELIEF ID NUMBER 22923
TAX RELIEF ID NUMBER 22919
TAX RELIEF ID NUMBER 22989
TAX RELIEF ID NUMBER 22590
TAX RELIEF ID NUMBER 22916
TAX RELIEF ID NUMBER 22988
TAX RELIEF ID NUMBER 22907
TAX RELIEF ID NUMBER 22929
TAX RELIEF ID NUMBER 22930
TAX RELIEF ID NUMBER 22913
TAX RELIEF ID NUMBER 22909
TAX RELIEF ID NUMBER 23056
TAX RELIEF ID NUMBER 22920
TAX RELIEF ID NUMBER 22589
TAX RELIEF ID NUMBER 22924
TAX RELIEF ID NUMBER 22910
TAX RELIEF ID NUMBER 23297
TAX RELIEF ID NUMBER 22917
TAX RELIEF ID NUMBER 22918
TAX RELIEF ID NUMBER 22925
TAX RELIEF ID NUMBER 22927
TAX RELIEF ID NUMBER 22912
TAX RELIEF ID NUMBER 22922
TAX RELIEF ID NUMBER 22906
TAX RELIEF ID NUMBER 22926
TAX RELIEF ID NUMBER 22928
TAX RELIEF ID NUMBER 22921
TAX RELIEF ID NUMBER 23058
TAX RELIEF ID NUMBER 22610
TAX RELIEF ID NUMBER 22915
TAX RELIEF ID NUMBER 22914
TAX RELIEF ID NUMBER 25868
TAX RELIEF ID NUMBER 25867
TAX RELIEF ID NUMBER 24021
TAX RELIEF ID NUMBER 24546
TAX RELIEF ID NUMBER 24570
TAX RELIEF ID NUMBER 24568
TAX RELIEF ID NUMBER 25856

Compliance History Period: September 01, 2015 to August 31, 2020 **Rating Year:** 2020 **Rating Date:** 09/01/2020

Date Compliance History Report Prepared: October 20, 2023

Agency Decision Requiring Compliance History: Permit - Issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit.

Component Period Selected: April 20, 2016 to April 20, 2021

TCEQ Staff Member to Contact for Additional Information Regarding This Compliance History.

Name: Scott McKee **Phone:** (512) 239-1255

Site and Owner/Operator History:

1) Has the site been in existence and/or operation for the full five year compliance period? YES
2) Has there been a (known) change in ownership/operator of the site during the compliance period? NO

Components (Multimedia) for the Site Are Listed in Sections A - J

A. Final Orders, court judgments, and consent decrees:

See addendum for information regarding federal actions.

B. Criminal convictions:

N/A

C. Chronic excessive emissions events:

N/A

D. The approval dates of investigations (CCEDS Inv. Track. No.):

Item 1	December 06, 2016**	(1363499)
Item 2*	January 04, 2017**	(1779583)
Item 3*	April 17, 2017**	(1779538)
Item 4*	July 24, 2017**	(1779553)
Item 5*	October 10, 2017**	(1779568)
Item 6*	November 30, 2017**	(1449601)
Item 7*	January 23, 2018**	(1779584)
Item 8*	April 11, 2018**	(1779539)
Item 9*	June 13, 2018**	(1467137)
Item 10	July 26, 2018**	(1779554)
Item 11*	October 18, 2018**	(1517698)
Item 12*	October 24, 2018**	(1779569)
Item 13*	December 21, 2018**	(1536797)
Item 14*	January 24, 2019**	(1779585)
Item 15*	February 19, 2019**	(1538368)
Item 16*	April 23, 2019**	(1779540)
Item 17*	July 23, 2019**	(1779555)
Item 18*	August 14, 2019**	(1578932)
Item 19*	August 27, 2019**	(1578942)
Item 20	August 29, 2019**	(1581779)
Item 21*	September 13, 2019**	(1592193)
Item 22*	October 23, 2019**	(1779570)
Item 23*	November 25, 2019**	(1610691)
Item 24*	November 26, 2019**	(1605788)
Item 25*	January 22, 2020**	(1779586)
Item 26*	January 28, 2020**	(1603853)
Item 27*	February 11, 2020**	(1617950)
Item 28*	March 06, 2020**	(1632574)
Item 29*	April 20, 2020**	(1779541)
Item 30*	May 14, 2020**	(1645407)
Item 31*	May 21, 2020**	(1646900)

Item 32*	June 24, 2020**	(1652577)
Item 33*	July 23, 2020**	(1779556)
Item 34*	August 13, 2020**	(1622660)
Item 35	August 26, 2020**	(1670275)
Item 36	August 27, 2020**	(1664747)
Item 37*	October 06, 2020	(1679110)
Item 38*	October 09, 2020	(1622659)
Item 39*	October 23, 2020	(1678317)
Item 40	October 26, 2020	(1779571)
Item 41*	October 29, 2020	(1685520)
Item 42*	November 13, 2020	(1659743)
Item 43*	November 17, 2020	(1690485)
Item 44	November 23, 2020	(1686774)
Item 45*	December 17, 2020	(1697140)
Item 46*	December 23, 2020	(1697125)
Item 47	January 19, 2021	(1779587)
Item 48*	January 25, 2021	(1692337)
Item 49*	April 15, 2021	(1706110)

* No violations documented during this investigation

**Investigation occurred between 09/01/2015 and 08/31/2020.

E. Written notices of violations (NOV) (CCEDS Inv. Track. No.):

A notice of violation represents a written allegation of a violation of a specific regulatory requirement from the commission to a regulated entity. A notice of violation is not a final enforcement action, nor proof that a violation has actually occurred.

1 Date: 12/06/2016 (1363499)

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(A)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
General Conditions PERMIT
Special Terms and Condition 9 OP

Description: Failure to submit a report of construction progress to the appropriate regional office of the commission no later than 15 working days after the start of construction.

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 101, SubChapter A 101.20(1)
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.7(a)(1)
5C THSC Chapter 382 382.085(b)
Special Condition 2A PERMIT
STC 6A OP

Description: Failure to submit a notification of the date construction commenced no later than 30 days after such date.

Self Report? NO Classification: Minor

Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
30 TAC Chapter 122, SubChapter B 122.145(2)(A)
5C THSC Chapter 382 382.085(b)
General Terms and Conditions OP

Description: Failure to report all instances of deviations.

2 Date: 04/30/2018 (1779554)

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Description: Failure to meet the limit for one or more permit parameter

3 Date: 06/30/2018 (1779564)

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Compliance History Report for CN604136374, RN104104716, Rating Year 2020 which includes Compliance History (CH) components from April 20, 2016, through April 20, 2021.

Description: Failure to meet the limit for one or more permit parameter

4 Date: 08/29/2019 (1581779)

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
General Terms and Conditions OP
Special Condition 15E PERMIT
Special Term and Condition 9 OP

Description: Failure to equip each open ended valve or line (OEL) with an appropriately sized cap, blind flange, plug, or a second valve to seal the line.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
General Terms and Conditions OP
PSDTX1306M1, Special Condition 23D PERMIT
Special Term and Condition 9 OP

Description: Failure to maintain records of quarterly visible emissions observations.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
General Terms and Conditions OP
PSDTX1306M1, Special Condition 13 PERMIT
Special Term and Condition 9 OP

Description: Failure to conduct quarterly visible emissions observations.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 122, SubChapter B 122.143(4)
30 TAC Chapter 122, SubChapter B 122.145(2)(A)
5C THSC Chapter 382 382.085(b)
General Terms and Conditions OP

Description: Failure to report all instances of deviations.

5* Date: 06/30/2020 (1779566)

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Description: Failure to meet the limit for one or more permit parameter

6* Date: 07/31/2020 (1779571)

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Description: Failure to meet the limit for one or more permit parameter

7* Date: 08/27/2020 (1664747)

Self Report? NO Classification: Moderate

Citation: /PSDTX1306M1, SC 13 PERMIT
/PSDTX1306M1, SC 23D PERMIT
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
STC 3(A)(iv)(1) OP
STC 9 OP

Description: Failure to perform quarterly visible emissions observations.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 122, SubChapter C 122.210(a)
5C THSC Chapter 382 382.085(b)

Description: Failure to operate as represented.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 111, SubChapter A 111.111(a)(4)(A)
30 TAC Chapter 122, SubChapter B 122.143(4)
30 TAC Chapter 122, SubChapter B 122.143(6)
5C THSC Chapter 382 382.085(b)

STC 1A OP
Description: Failure to operate flare without visible emissions.
Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
SC 6(B) PERMIT
STC 9 OP
Description: Failure to a perform cylinder gas audit (CGA) as required.
Self Report? NO Classification: Moderate

Citation: /PSDTX1306M1, SC 10 PERMIT
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
STC 9 OP
Description: Failure to comply with thermal oxidizer operational requirements.
Self Report? NO Classification: Moderate

Citation: /PSDTX1306M1, SC 11(A) PERMIT
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(b)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
30 TAC Chapter 122, SubChapter B 122.143(6)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT A 60.18(c)(3)(ii)
5C THSC Chapter 382 382.085(b)
STC 1A OP
STC 9 OP
Description: Failure to operate a flare above minimum required net heating value.
Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
PSDTX1306M1, SC 4(C) PERMIT
STC 9 OP
Description: Failure to comply with turbine planned startup or shutdown time limits.
Self Report? NO Classification: Moderate

Citation: /PSDTX1306M1, SC 1 PERMIT
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(F)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
STC 9 OP
Description: Failure to comply with permitted emission rates for Wet/Dry Gas Flare 1 (emission point number [EPN] WTDYFLR1).
Self Report? NO Classification: Moderate

Citation: /PSDTX1306M1, SC 1 PERMIT
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(F)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
STC 9 OP
Description: Failure to comply with permitted emission rates for the Marine Flare (EPN MRNFLR).
Self Report? NO Classification: Moderate

Citation: /PSDTX1306M, SC 18E OP
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
STC 9 OP
Description: Failure to equip each open ended valve or line (OEL) with an appropriately sized cap, blind flange, plug, or a second valve to seal the line.
Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 113, SubChapter C 113.880
30 TAC Chapter 122, SubChapter B 122.143(4)
30 TAC Chapter 122, SubChapter B 122.143(6)

40 CFR Chapter 63, SubChapter C, PT 63, SubPT EEEE 63.2343(c)
5C THSC Chapter 382 382.085(b)
STC 1A OP
STC 1E OP

Description: Failure to submit notifications by the required timeframe.

Self Report? NO Classification: Moderate

Citation: /PSDTX1306M1, SC 1 PERMIT
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(b)(2)(F)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
STC 9 OP

Description: Failure to comply with permitted emission rates for the Annual Flare Cap (EPN WTDYFLR1-2).

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 115, SubChapter B 115.112(c)(1)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT Kb 60.112b(a)(3)
5C THSC Chapter 382 382.085(b)
STC 1A OP
STC 4 OP
STC 8 OP

Description: Failure to monitor at carbon canisters as required.

Self Report? NO Classification: Moderate

Citation: 30 TAC Chapter 115, SubChapter B 115.112(c)(1)
30 TAC Chapter 122, SubChapter B 122.143(4)
40 CFR Chapter 60, SubChapter C, PT 60, SubPT Kb 60.112b(a)(3)
5C THSC Chapter 382 382.085(b)
STC 1A OP
STC 4 OP
STC 8 OP

Description: Failure to replace a carbon canister within the required time interval.

Self Report? NO Classification: Moderate

Citation: /PSDTX1306M1, SC 23 PERMIT
30 TAC Chapter 101, SubChapter A 101.20(3)
30 TAC Chapter 116, SubChapter B 116.115(c)
30 TAC Chapter 122, SubChapter B 122.143(4)
5C THSC Chapter 382 382.085(b)
STC 15 OP
STC 9 OP

Description: Failure to maintain records.

8 Date: 10/31/2020 (1779587)

Self Report? YES Classification: Moderate

Citation: 2D TWC Chapter 26, SubChapter A 26.121(a)
30 TAC Chapter 305, SubChapter F 305.125(1)

Description: Failure to meet the limit for one or more permit parameter

* NOVs applicable for the Compliance History rating period 9/1/2015 to 8/31/2020

F. Environmental audits:

Notice of Intent Date: 09/13/2018 (1519121)

Disclosure Date: 07/30/2019

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT 28M

Description: Failure to conduct quarterly monitoring on the LNG rundown line from Tank A to marine loading.

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT SC 18.H

Description: Failure to complete an initial repair attempt within 5 days of discovery.

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT SC 18.I

Description: Failure to make a final repair attempt within 15 days of discovery.

Viol. Classification: Minor

Compliance History Report for CN604136374, RN104104716, Rating Year 2020 which includes Compliance History (CH) components from April 20, 2016, through April 20, 2021.

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT SC 18.H

Description: Failure to complete an initial repair attempt within five days of discovery.

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT SC 18.I

Description: Failure to conduct a final repair attempt with 15 days of discovery.

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT SC 18.H

Description: Failure to conduct an initial repair attempt within 5 days of discovery.

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT SC 18.I

Description: Failure to conduct a final repair attempt within 15 days of discovery.

Viol. Classification: Moderate

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT SC 18.D

Description: Failure to maintain a list identifying difficult and unsafe to monitor components as required by NSR 105710.

Viol. Classification: Minor

Citation: 30 TAC Chapter 116, SubChapter B 116.115(c)

Rqmt Prov: PERMIT 18.F

Description: Failure to monitor certain LDAR components within 90 days of initial in-service date.

Viol. Classification: Moderate

Citation: 30 TAC Chapter 122, SubChapter C 122.221(a)

Description: Failure to obtain Title V authorization for "as-built" changes that were operated before Title V Permit O3580 was revised.

Viol. Classification: Moderate

Citation: 30 TAC Chapter 122, SubChapter C 122.210(a)

Description: Failure to operate a fuel dispensing facility authorized by a permit by rule greater than 12 months and prior to submitted Title V O3580 application.

Notice of Intent Date: 06/25/2020 (1664219)

No DOV Associated

Notice of Intent Date: 10/23/2020 (1691239)

No DOV Associated

*NOA/DOVs applicable for the Compliance History rating period 09/01/2015 to 8/31/2020

G. Type of environmental management systems (EMSs):

N/A

H. Voluntary on-site compliance assessment dates:

N/A

I. Participation in a voluntary pollution reduction program:

N/A

J. Early compliance:

N/A

Sites Outside of Texas:

N/A

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 16, 2022

MR ARI AZIZ
VICE PRESIDENT & GENERAL MANAGER
CORPUS CHRISTI LIQUEFACTION, LLC
PO BOX 162
GREGORY TX 78359-0162

Re: Permit Amendment Application
Permit Number: 105710
Corpus Christi Liquefaction, LLC
Corpus Christi Liquefaction
Gregory, San Patricio County
Regulated Entity Number: RN104104716
Customer Reference Number: CN604136374
Associated Permit Numbers: PSDTX1306M1 and GHGPSDTX123M1

Dear Mr. Aziz:

The Texas Commission on Environmental Quality (TCEQ) has made a preliminary decision on the above-referenced application. In accordance with Title 30 Texas Administrative Code § 39.419(b), you are now required to publish Notice of Application and Preliminary Decision. You must provide a copy of this preliminary decision letter with the draft permit at the public place referenced in the public notice.

If you have any questions, please call Mr. Lyndon Poole, P.E. at (512) 239-6971, or write to the TCEQ, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

Daniel Guthrie

Daniel Guthrie, Manager
Energy New Source Review Permits Section
Air Permits Division

Enclosure

cc: Air Section Manager, Region 14 - Corpus Christi

Project Number: 327940

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 16, 2022

MR ARI AZIZ
VICE PRESIDENT & GENERAL MANAGER
CORPUS CHRISTI LIQUEFACTION LLC
PO BOX 162
GREGORY TX 78359-0162

Re: Permit Amendment Application
Permit Number: 105710
Corpus Christi Liquefaction, LLC
Corpus Christi Liquefaction
Gregory, San Patricio County
Regulated Entity Number: RN104104716
Customer Reference Number: CN604136374
Associated Permit Numbers: PSDTX1306M1 and GHGPSDTX123M1

Dear Mr. Aziz:

The Texas Commission on Environmental Quality (TCEQ) has completed the technical review of your application and has prepared a preliminary decision and draft permit.

You are now required to publish notice of your proposed activity. To help you meet the regulatory requirements associated with this notice, we have included the following items:

- Notices for Newspaper Publication (Examples A and B)
- Public Notice Checklist
- Instructions for Public Notice
- Affidavit of Publication for Air Permitting (Form TCEQ-20533) and Alternative Language Affidavit of Publication for Air Permitting (Form TCEQ-20534)
- Web link to download Public Notice Verification Form (refer to Public Notice Instructions)
- Notification List
- Draft Permit

Please note that it is **very important** that you follow **all** directions in the enclosed instructions. If you do not, you may be required to republish the notice. A common mistake is the unauthorized changing of notice wording or font. If you have any questions, please contact us before you proceed with publication.

A "Public Notice Checklist" is enclosed which notes the time limitations for each step of the public notice process. **The processing of your application may be delayed if these time limitations are not met (i.e., submitting proof of publication of the notice within 10 business days after publication, affidavits of publication within 30 calendar days after the date of publication, and public notice verification form within 10 business days after the end of the designated comment period).** This checklist should be used as a tool in conjunction with the enclosed, detailed instructions.

If you do not comply with **all** requirements described in the instructions, further processing of your application may be suspended or the agency may take other actions.

If you have any questions regarding publication requirements, please contact the Office of the Chief Clerk at (512) 239-3300. If you have any other questions, please contact Mr. Lyndon Poole, P.E. at (512) 239-6971.

Sincerely,

Laurie Gharis
Chief Clerk
Office of the Chief Clerk
Texas Commission on Environmental Quality

Enclosure

cc: Air Section Manager, Region 14 - Corpus Christi
Air Permits Section Chief, New Source Review Section (6MM-AP), U.S. Environmental Protection Agency, Region 6, Dallas

Project Number: 327940

bcc: Ashley Rich, Environmental Law Division, MC-173, Austin

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

EXAMPLE A

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

PERMIT NUMBER: 105710

APPLICATION AND PRELIMINARY DECISION. Corpus Christi Liquefaction, LLC, PO Box 162, Gregory, TX 78359-0162, has applied to the Texas Commission on Environmental Quality (TCEQ) for an amendment to Air Quality Permit Number 105710, which would authorize a modification to operations at Corpus Christi Liquefaction located at 622 State Hwy 35, Gregory, San Patricio County, Texas 78359. This application was submitted to the TCEQ on April 20, 2021. The existing facility will emit the following contaminants: carbon monoxide, hydrogen sulfide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less, sulfur dioxide, and hazardous air pollutants.

The executive director has completed the technical review of the application and prepared a draft permit which, if approved, would establish the conditions under which the facility must operate. The executive director has made a preliminary decision to issue the permit because it meets all rules and regulations. The permit application, executive director's preliminary decision, and draft permit will be available for viewing and copying at the TCEQ central office, the TCEQ Corpus Christi regional office, and at the Portland Chamber of Commerce, 1512 Wildcat Drive, Portland, San Patricio County, Texas, beginning the first day of publication of this notice. The facility's compliance file, if any exists, is available for public review at the TCEQ Corpus Christi Regional Office, 500 N. Shoreline Blvd., Suite 500, Corpus Christi, Texas.

PUBLIC COMMENT/PUBLIC MEETING. You may submit public comments about this application. The TCEQ will hold a public meeting on this application because it was requested by local legislators. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. A public meeting is not a contested case hearing. The TCEQ will consider all public comments in developing a final decision on the application. The public meeting will consist of two parts, an Informal Discussion Period and a Formal Comment Period. During the Informal Discussion Period, the public is encouraged to ask questions of the applicant and TCEQ staff concerning the application. However, informal comments made during the Informal Discussion Period will not be considered by the TCEQ Commissioners before reaching a decision on the permit and no formal response will be made to the informal comments. During the Formal Comment Period, members of the public may state their formal comments into the official record. A written response to all formal comments will be prepared by the Executive Director and considered by the Commissioners before they reach a decision on the permit. A copy of the response will be sent to each person who submits a formal comment or who requested to be on the mailing list for this application and who provides a mailing address.

The Public Meeting is to be held:

Thursday, June 30, 2022 at 7:00 PM
Portland Community Center
2000 Billy G Webb
Portland, Texas 78374

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

You may submit additional written public comments within 30 days of the date of newspaper publication of this notice in the manner set forth in the AGENCY CONTACTS AND INFORMATION paragraph below, or by the date of the public meeting, whichever is later. After the deadline for public comment, the executive director will consider the comments and prepare a response to all public comment. The response to comments, along with the executive director's decision on the application will be mailed to everyone who submitted public comments or is on a mailing list for this application.

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

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

EXECUTIVE DIRECTOR ACTION. A timely hearing request has been received by the TCEQ. However, if all timely contested case hearing requests have been withdrawn and no additional comments are received, the executive director may issue final approval of the application. The response to comments, along with the executive director's decision on the application will be mailed to everyone who submitted public comments or is on a mailing list for this application, and will be posted electronically to the Commissioners' Integrated Database (CID). If all timely hearing requests are not withdrawn, the executive director will not issue final approval of the permit and will forward the application and requests to the Commissioners for their consideration at a scheduled commission meeting.

INFORMATION AVAILABLE ONLINE. When they become available, the executive director's response to comments and the final decision on this application will be accessible through the Commission's Web site at www.tceq.texas.gov/goto/cid. Once you have access to the CID using the above link, enter the permit number for this application which is provided at the top of this notice. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application. http://www.tceq.texas.gov/assets/public/hb610/index.html?lat=27.883055&lng=-97.269166&zoom=13&type=r.

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

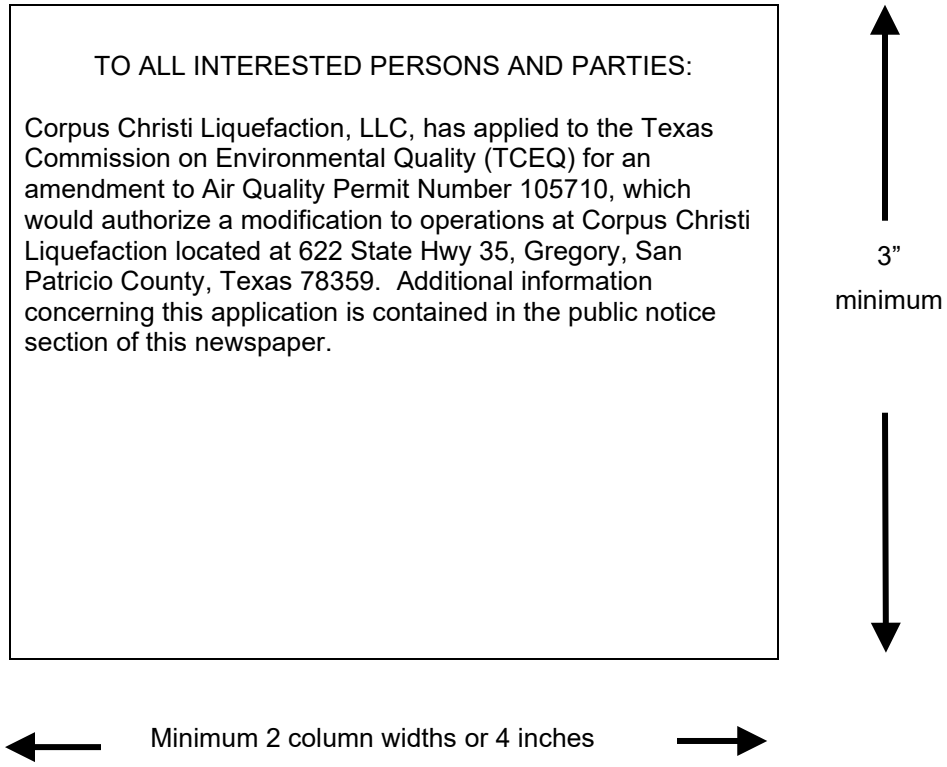
AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www14.tceq.texas.gov/epic/eComment/, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. Please be aware that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

Further information may also be obtained from Corpus Christi Liquefaction, LLC at the address stated above or by calling Ms. Jessica Muennink, Health Safety and Environmental Manager at (361) 977-1342.

Notice Issuance Date: May 16, 2022

Example B

Publication Elsewhere in the Newspaper:



Public Notice Checklist

Notice of Application and Preliminary Decision for an Air Quality Permit
(2nd Notice)

The following tasks must be completed for public notice. If publication in an alternative language is required, please complete the tasks for both the English and alternative language publications. Detailed instructions are included in the "Instructions for Public Notice" section of this package.

Within 33 calendar days after date of this letter
Publish *Notice of Application and Preliminary Decision for an Air Quality Permit* in the same newspaper(s) in which you published *Notice of Receipt of Intent to Obtain Permit* for this application. - Example A must be published in "public notice" section of newspaper. Review for accuracy prior to publishing. - Example B (if applicable) must be published in prominent location (other than "public notice") in same issue of newspaper Provide copy of the complete application (including any subsequent revisions) and the executive director's preliminary decision (including the draft permit) at a public place for review and copying. Keep them there for duration of the designated comment period.
First day of newspaper publication
Review published newspaper notice for accuracy. If errors, contact Air Permits Division. Ensure copy of the complete application (including any subsequent revisions) and the executive director's preliminary decision (including the draft permit) are at the public place. It is recommended that the signs from the first notice be in place and the lettering must remain legible and visible until 30 days after publication of the *Notice of Application and Preliminary Decision* (either English or alternative language notice, whichever is later).
Within 10 business days after date of publication
Proof of publication showing publication date and newspaper name should be emailed to PROOFS@tceq.texas.gov or mailed to: Texas Commission on Environmental Quality Office of the Chief Clerk, MC-105 Attn: Notice Team P.O. Box 13087 Austin, Texas 78711-3087 Mail or email, as instructed, photocopies of newspaper clippings showing publication date and newspaper name to persons listed on *Notification List*.
Within 30 calendar days after date of publication
Affidavit of publication for air permitting and alternative language affidavit of publication for air permitting (if applicable) should be emailed to PROOFS@tceq.texas.gov or mailed to: Texas Commission on Environmental Quality Office of the Chief Clerk, MC-105 Attn: Notice Team P.O. Box 13087 Austin, Texas 78711-3087 Mail or email, as instructed, photocopies of affidavits to persons listed on *Notification List*.
Within 10 business days after end of the designated comment period
Public Notice Verification Form should be emailed to PROOFS@tceq.texas.gov or mailed to: Texas Commission on Environmental Quality Office of the Chief Clerk, MC-105 Attn: Notice Team P.O. Box 13087 Austin, Texas 78711-3087 Mail or email, as instructed, photocopies of Public Notice Verification Form to persons listed on *Notification List*.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Instructions for Public Notice
For New Source Review Air Permit

Notice of Application and Preliminary Decision

We have completed the technical review of your application and issued a preliminary decision. You must comply with the following instructions:

Review Notice

Included in the notice is all of the information which the commission believes is necessary to effectuate compliance with applicable public notice requirements. Please read it carefully and notify the Texas Commission on Environmental Quality (TCEQ) immediately if it contains any errors or omissions. You are responsible for ensuring the accuracy of all information published. You may not change the text of the notice without prior approval from the TCEQ.

Newspaper Notice

- You must publish the enclosed *Notice of Application and Preliminary Decision for an Air Quality Permit* within **33 calendar days** after the date this information was mailed to you (see date of letter).

- You must publish the enclosed *Notice of Application and Preliminary Decision for an Air Quality Permit* at your expense, in the same newspaper(s) in which you published the *Notice of Receipt and Intent to Obtain Permit* for this application. The newspaper must be a newspaper that is of general circulation in the municipality where the facility is or will be located. If the facility is not located within a municipality, the newspaper must be of general circulation in the municipality nearest the location.

- You must publish this notice in one issue of any applicable newspaper.

- You will find two example notices enclosed in this package. *Example A* must be published in the "public notice" section of the newspaper. The phrase "Example A" is not required to be published. *Example B* must be published in the **same issue** of the newspaper as *Example A*; however, it must be published in a prominent location (other than the public notice section). *Example B* refers the public to the "public notice" section of the newspaper where *Example A* provides more information regarding the permit application.

- *Example B* must be a total of at least **6 column inches (standard advertising units)** with a height of at least **3 inches** and a horizontal dimension of **2 column widths.** If the newspaper chosen does not use standard advertising units for measurement, the notice must be at least **12 square inches** with the shortest side of at least **3 inches**.

- The bold text of the enclosed notice **must** be printed in the newspaper in a font style or size that distinguishes it from the rest of the notice (i.e., **bold**, *italics*). **Failure to do so may require re-notice.**

Alternative Language Notice

In certain circumstances, applicants for air permits must complete notice in alternative languages.

- Public notice rules require the applicant to determine whether a bilingual program is required at either the elementary or middle school nearest to the facility or proposed facility location. Bilingual education programs are determined on a district-wide basis. When students who are required to attend either school are eligible to be enrolled in a bilingual education program, some alternative language notice is required (newspaper notice).

- Since the school district, and not the schools, must provide the bilingual education program, these programs do not have to be located at the elementary or middle school nearest to the facility or proposed facility to trigger the alternative language notice requirement. If there are students who would normally attend the nearest schools eligible to be taught in a bilingual education program at a different location, alternative language notice is required.

- If triggered, publications of alternative language notices must be made in a newspaper or publication printed primarily in each language taught in the bilingual education program. The same newspaper(s) used for *Notice of Receipt and Intent to Obtain Permit* must be used for publication of the *Notice of Application and Preliminary Decision for an Air Quality Permit*. This notice is required if such a newspaper or publication exists in the municipality or the county where the facility is or will be located.

- The applicant must demonstrate a good faith effort to identify a newspaper or publication in the required language. If a newspaper or publication of general circulation published at least once a month in such language cannot be found, publishing in that language is not required, but signs must remain posted in the same location(s) utilized during the *Notice of Receipt of Intent to Obtain Permit (1st public notice)*.

- Publication in an alternative language section or insertion within an English language newspaper does not satisfy these requirements.

- The applicant has the burden to demonstrate compliance with these requirements. You must fill out the ***Public Notice Verification Form (Form TCEQ-20244)*** indicating your compliance with the requirements regarding publication in an alternative language. **This form is available at www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html.**

- It is suggested the applicant work with the local school district to do the following:

  (a) determine if a bilingual program is required in the district;
  (b) determine which language is required by the bilingual program;
  (c) locate the nearest elementary and middle schools; and
  (d) determine if any students attending either school are entitled to be enrolled in a bilingual educational program.

- **If you determine that you must meet the alternative language notice requirements after receipt of the full public notice package, you are responsible for ensuring that the publication in the alternative language is complete and accurate in that language. Spanish notice templates are available through the Air Permits Division Web site at www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html**. All italic notes should be replaced with the corresponding Spanish translations for the specific application and published in the alternative language publication**. Email a copy to Air Permits Division staff.**

- If you are required to publish notice in a language other than Spanish, you must translate the entire public notice at your own expense.

Public Comment Period

- The public comment period should last at least **30 calendar days after publication of the last notice**.

- The comment period will be longer if the last day of the public comment period ends on a weekend or a holiday. In this case, the comment period will end on the next business day.

- The comment period for the permit may lengthen depending on whether a public meeting is held. If a public meeting is held, the comment period will be extended to the later of either the date of the public meeting or the end of the second notice period.

Proof of Publication

- Check each publication to ensure that the articles were accurately published. If a notice was not published correctly you may be required to republish.

- For each newspaper in which you published, you must submit proof of publication that shows the notice, the date of publication, and the name of the newspaper to the Office of the Chief Clerk within **10 business days** after the date of publication. Acceptable proofs of publication are 1) copies of the published notice or 2) the newspaper clippings of the published notice. If you choose to submit copies of the published notice to the Office of the Chief Clerk, copies must be on standard-size 8½'' x 11'' paper and must show the actual size of the published notice (do not reduce the image when making copies). Published notices longer than 11'' must be copied onto multiple 8½'' x 11'' pages. Please note, submitting a copy of your published notice could result in faster processing of your application. It is recommended that you maintain newspaper clippings or tear sheets of the notice for your records.

- You must submit an **affidavit of publication for air permitting and alternate language affidavit of publication for air permitting (if applicable)** to the Office of the Chief Clerk within **30 calendar days** after the date of publication. **You must use the enclosed affidavit forms.** The affidavits must clearly identify the applicant's name and permit number. You are encouraged to submit the affidavit with the proof of publication described above.

- You must submit the ***Public Notice Verification Form (Form TCEQ-20244)*** to the Office of the Chief Clerk within **10 business days** of the end of this public comment period. You must use this form to certify that you have met bilingual notice requirements. **This form is available at www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html.**

- The **affidavits of publication, *Public Notice Verification Form,* and acceptable proof of publication of the published notices** should be emailed to PROOFS@tceq.texas.gov or mailed to:

Texas Commission on Environmental Quality
Office of the Chief Clerk, MC-105
Attn: Notice Team
P.O. Box 13087
Austin, Texas 78711-3087

- Please ensure that the affidavit(s) you send to the Chief Clerk have all blanks filled in correctly.

- Photocopies of newspaper clippings, affidavits, and verifications must also be sent to those listed on the enclosed *Notification List* within the deadlines specified above.

Failure to Publish and Submit Proof of Publication

You must meet all publication requirements. **If you fail to publish the notice or submit proof of publication *on time,*** the TCEQ may suspend further processing on your application or take other actions.

Sign Posting

It is recommended that the signs that were put in place prior to publication of the first notice remain in place and be legible and visible until 30 days after publication of the *Notice of Application and Preliminary Decision* (either English or alternative language notice, whichever is later).

Application in a Public Place

- You must provide a copy of the complete application (including any subsequent revisions) and the executive director's preliminary decision (including the draft permit), at a public place for review and copying by the public. This place must be in the county in which the facility is located or proposed to be located.

- A public place is one that is publicly owned or operated (ex: libraries, county courthouses, or city halls.)

- This copy must be accessible to the public for review and copying. The copy must be available beginning on the first day of newspaper publication and remain in place until the commission has taken action on the application or the commission refers issues to the State Office of Administrative Hearings.

- If the application is submitted to the TCEQ 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 Texas Commission on Environmental Quality, Public Information Coordinator, MC-197, P.O. Box 13087, Austin, Texas 78711-3087."

- You must submit verification of file availability using the ***Public Notice Verification Form (Form TCEQ-20244)*** within **10 business days** after end of the publications' designated comment period. Do not submit the form verifying that the application was in a public place until after the comment period is complete. If a public meeting is held or second notice is required causing the public comment period to be extended, at a later date you will be required to verify that the application was in a public place during the entire public comment period. **This form is available at www.tceq.texas.gov/permitting/air/nav/air_publicnotice.html.**

General Information

When contacting the Commission regarding this application, please refer to the permit number at the top of the *Notice of Application and Preliminary Decision*.

If you have questions or need assistance regarding publication requirements, please contact the Office of the Chief Clerk at (512) 239-3300 or the project reviewer listed in the cover letter.

TCEQ-Office of the Chief Clerk
MC-105 Attn: Notice Team
P.O. Box 13087
Austin, Texas 78711-3087

Applicant Name: Corpus Christi Liquefaction, LLC
Permit No.: 105710
Application Received Date: April 20, 2021

AFFIDAVIT OF PUBLICATION FOR AIR PERMITTING

STATE OF TEXAS §
COUNTY OF _____ §

BEFORE ME, the undersigned authority, on this day personally appeared

_____, who being by me duly sworn, deposes and says that (s)he is *(Name of Person Representing Newspaper)*

the _____ of the _____
(Title of Person Representing Newspaper) *(Name of the Newspaper)*

that said newspaper is generally circulated in _____, Texas;
(The municipality or nearest municipality to the location of the facility or the proposed facility)

that the enclosed notice was published in said newspaper on the following date(s):

_____

_____
(Newspaper Representative's Signature)

Subscribed and sworn to before me this the _____ day of _____, 20_____
to certify which witness my hand and seal of office.

_____
Notary Public in and for the State of Texas

[Affix Seal]

_____
Print or Type Name of Notary Public

_____
My Commission Expires

TCEQ-Office of the Chief Clerk
MC-105 Attn: Notice Team
P.O. Box 13087
Austin, Texas 78711-3087

Applicant Name: Corpus Christi Liquefaction, LLC
Permit No.: 105710
Application Received Date: April 20, 2021

ALTERNATIVE LANGUAGE AFFIDAVIT OF PUBLICATION FOR AIR PERMITTING

STATE OF TEXAS §
COUNTY OF _____ §

BEFORE ME, the undersigned authority, on this day personally appeared

_____, who being by me duly sworn, deposes and says that (s)he is (*Name of Person Representing Newspaper)*

the _____ of the _____;
(Title of Person Representing Newspaper) *(Name of the Newspaper)*

that said newspaper is generally circulated in _____, Texas;
*(The **municipality or county** in which the facility or proposed facility is located)*

that the enclosed notice was published in said newspaper on the following date(s):

_____

_____
(Newspaper Representative's Signature)

Subscribe and sworn to before me this the _____ day of _____, 20_____
to certify which witness my hand and seal of office.

_____
Notary Public in and for the State of Texas

[Affix Seal]

_____
Print or Type Name of Notary Public

_____
My Commission Expires

Notification List

It is the responsibility of the applicant to furnish the following offices with copies of the notices published, the *Affidavit of Publication for Air Permitting, the Alternative Language Affidavit of Publication for Air Permitting (if applicable)*, and a completed copy of the *Public Notice Verification Form (Form TCEQ-20244)*. Acceptable proof of publication and any affidavits and Form TCEQ-20244 should be emailed to PROOFS@tceq.texas.gov or mailed to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087.

Electronic copies should be submitted via email to the U.S. Environmental Protection Agency (EPA), **Region 6** at R6AirPermitsTX@EPA.gov. Please contact Ms. Aimee Wilson (wilson.aimee@epa.gov) at (214) 665-7596 if you have any questions pertaining to electronic submittals to the EPA.

Email copies to Mr. Lyndon Poole, P.E. at Lyndon.Poole@tceq.texas.gov

Hard copies should be sent to the following:

Texas Commission on Environmental Quality
Corpus Christi Regional Office
500 N. Shoreline Blvd., Suite 500
Corpus Christi, Texas 78401-0318

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 25, 2023

TO: All interested persons.

RE: Corpus Christi Liquefaction, LLC
Air Quality Permit Nos. 105710, GHGPSDTX123M1, and PSDTX1306M1

Decision of the Executive Director.

The executive director has made a decision that the above-referenced permit application meets the requirements of applicable law. **This decision does not authorize construction or operation of any proposed facilities.** This decision will be considered by the commissioners at a regularly scheduled public meeting before any action is taken on this application unless all requests for contested case hearing or reconsideration have been withdrawn before that meeting.

Enclosed with this letter are instructions to view the Executive Director's Response to Public Comment (RTC) on the Internet. Individuals who would prefer a mailed copy of the RTC or are having trouble accessing the RTC on the website, should contact the Office of the Chief Clerk, by phone at (512) 239-3300 or by email at chiefclk@tceq.texas.gov. A complete copy of the RTC (including the mailing list), complete application, draft permit and related documents, including public comments, are available for review at the TCEQ Central Office. The permit application, executive director's preliminary decision, and draft permit will be available for viewing and copying at the TCEQ Central Office, the TCEQ Corpus Christi Regional Office, and at the Portland Chamber of Commerce, 1512 Wildcat Drive, Portland, San Patricio County, Texas. The facility's compliance file, if any exists, is available for public review at the TCEQ Corpus Christi Regional Office, 500 North Shoreline Boulevard, Suite 500, Corpus Christi, Texas.

If you disagree with the executive director's decision, and you believe you are an "affected person" as defined below, you may request a contested case hearing. In addition, anyone may request reconsideration of the executive director's decision. The procedures for the commission's evaluation of hearing requests/requests for reconsideration are located in 30 Texas Administrative Code Chapter 55, Subchapter F. A brief description of the procedures for these two types of requests follows.

How to Request a Contested Case Hearing.

It is important that your request include all the information that supports your right to a contested case hearing. You must demonstrate that you meet the applicable legal requirements to have your hearing request granted. The commission's consideration of your request will be based on the information you provide.

The request must include the following:

(1) Your name, address, daytime telephone number, and, if possible, a fax number.

(2) If the request is made by a group or association, the request must identify:

(A) one person by name, address, daytime telephone number, and, if possible, the fax number, of the person who will be responsible for receiving all communications and documents for the group;

(B) the comments on the application submitted by the group that are the basis of the hearing request; and

(C) by name and physical address one or more members of the group that would otherwise have standing to request a hearing in their own right. The interests the group seeks to protect must relate to the organization's purpose. Neither the claim asserted nor the relief requested must require the participation of the individual members in the case.

(3) The name of the applicant, the permit number and other numbers listed above so that your request may be processed properly.

(4) A statement clearly expressing that you are requesting a contested case hearing. For example, the following statement would be sufficient: "I request a contested case hearing."

Your request must demonstrate that you are an **"affected person."** An affected person is one who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest affected by the application. Your request must describe how and why you would be adversely affected by the proposed facility or activity in a manner not common to the general public. For example, to the extent your request is based on these concerns, you should describe the likely impact on your health, safety, or uses of your property which may be adversely affected by the proposed facility or activities. To demonstrate that you have a personal justiciable interest, you must state, as specifically as you are able, your location and the distance between your location and the proposed facility or activities. A person who may be affected by emissions of air contaminants from the facility is entitled to request a contested case hearing.

Your request must raise disputed issues of fact that are relevant and material to the commission's decision on this application that were raised **by you** during the public comment period. The request cannot be based solely on issues raised in comments that you have withdrawn.

To facilitate the commission's determination of the number and scope of issues to be referred to hearing, you should: 1) specify any of the executive director's responses to **your** comments that you dispute; 2) the factual basis of the dispute; and 3) list any disputed issues of law.

How to Request Reconsideration of the Executive Director's Decision.

Unlike a request for a contested case hearing, anyone may request reconsideration of the executive director's decision. A request for reconsideration should contain your name, address, daytime phone number, and, if possible, your fax number. The request must state that you are requesting reconsideration of the executive director's decision, and must explain why you believe the decision should be reconsidered.

Deadline for Submitting Requests.

A request for a contested case hearing or reconsideration of the executive director's decision must be **received by** the Chief Clerk's office no later than **30 calendar days** after the date

of this letter. You may submit your request electronically at www.tceq.texas.gov/agency/decisions/cc/comments.html or by mail to the following address:

Laurie Gharis, Chief Clerk
TCEQ, MC-105
P.O. Box 13087
Austin, Texas 78711-3087

Processing of Requests.

Timely requests for a contested case hearing or for reconsideration of the executive director's decision will be referred to the TCEQ's Alternative Dispute Resolution Program and set on the agenda of one of the commission's regularly scheduled meetings. Additional instructions explaining these procedures will be sent to the attached mailing list when this meeting has been scheduled.

How to Obtain Additional Information.

If you have any questions or need additional information about the procedures described in this letter, please call the Public Participation and Education Program, toll free, at 1-800-687-4040.

Sincerely,

Laurie Gharis

Laurie Gharis
Chief Clerk

LG/erg

Enclosure

EXECUTIVE DIRECTOR'S RESPONSE TO PUBLIC COMMENT
for
Corpus Christi Liquefaction, LLC
Air Quality Permit Nos. 105710, GHGPSDTX123M1, and PSDTX1306M1

The Executive Director has made the Response to Public Comment (RTC) for the application by Corpus Christi Liquefaction, LLC, for Air Quality Permit No. 105710, GHGPSDTX123M1, and PSDTX1306M1 available for viewing on the Internet. You may view and print the document by visiting the TCEQ Commissioners' Integrated Database at the following link: https://www.tceq.texas.gov/goto/cid

In order to view the RTC at the link above, enter the TCEQ ID Number for this application (105710, GHGPSDTX123M1, or PSDTX1306M1) and click the "Search" button. The search results will display a link to the RTC.

Individuals who would prefer a mailed copy of the RTC or are having trouble accessing the RTC on the website, should contact the Office of the Chief Clerk, by phone at (512) 239-3300 or by email at chiefclk@tceq.texas.gov.

Additional Information

For more information on the public participation process, you may contact the Office of the Public Interest Counsel at (512) 239-6363 or call the Public Education Program, toll free, at (800) 687-4040.

A complete copy of the RTC (including the mailing list), complete application, draft permit and related documents, including public comments, are available for review at the TCEQ Central Office. The permit application, executive director's preliminary decision, and draft permit will be available for viewing and copying at the TCEQ Central Office, the TCEQ Corpus Christi Regional Office, and at the Portland Chamber of Commerce, 1512 Wildcat Drive, Portland, San Patricio County, Texas. The facility's compliance file, if any exists, is available for public review at the TCEQ Corpus Christi Regional Office, 500 North Shoreline Boulevard, Suite 500, Corpus Christi, Texas.

MAILING LIST
for
Corpus Christi Liquefaction, LLC
Air Quality Permit Nos. 105710, GHGPSDTX123M1, and PSDTX1306M1

FOR THE APPLICANT:

Ari Aziz
Vice President and General Manager
Corpus Christi Liquefaction, LLC
P.O. Box 162
Gregory, Texas 78359

Jessica Muennink
Health Safety, and Environmental Manager
Corpus Christi Liquefaction, LLC
P.O. Box 162
Gregory, Texas 78359

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TCEQ AIR QUALITY PERMIT NUMBERS 105710, GHGPSDTX123M1, and PSDTX1306M1

APPLICATION BY CORPUS CHRISTI LIQUEFACTION, LLC CORPUS CHRISTI LIQUEFACTION GREGORY, SAN PATRICIO COUNTY	**§ § § §**	**BEFORE THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

EXECUTIVE DIRECTOR'S RESPONSE TO PUBLIC COMMENT

The Executive Director of the Texas Commission on Environmental Quality (the commission or TCEQ) files this Response to Public Comment (Response) on the New Source Review Authorization application and Executive Director's preliminary decision.

As required by Title 30 Texas Administrative Code (TAC) § 55.156, before an application is approved, the Executive Director prepares a response to all timely, relevant and material, or significant comments. The Office of Chief Clerk received timely comments from the following persons: State Senator Judith Zaffarini, State Representative J.M. Lozano, Arman Alex, Isabel Araiza Ortiz, Lisa Averill, Alvin Baker, Rachel Caballero, Sylvia Campos, Eduardo Canales, Teresa A. Carrillo, Elida Castillo, Colin Cox (on behalf of Environmental Integrity Project (EIP), Portland Citizens United, Sierra Club, and Texas Campaign for the Environment), Maricela Cuica, Mike Culbertson (on behalf of Corpus Christi Regional Economic Development Corporation), Rosaura De Los Santos Bailey (on behalf of Port of Corpus Christi), John Delagarza, Annie Dixon, Diana Emerson, Alex Flucke, Jean Fuertez, Adam Gawarecki (on behalf of San Patricio County Economic Development Corporation), Jose Gonzales, Penny Gray, Nichola Groom (on behalf of Reuters News), Don Guion, Billy Gunn, Jennifer R Hilliard, James E. Klein (on behalf of Coastal Bend Sierra Club), Kyle Krauskopf, Maria Krauskopf, Uneeda E Laitinen, Randy Lauhoff, Joanna Lyons, Dewey Magee, Brandon Marks (on behalf of Texas Campaign for the Environment), Justin Martinez, Kathryn Masten, Zach Nickels, Patrick Arnold Nye (on behalf of Ingleside on the Bay Coastal Watch Association), Jessica Palitza, Derek Parker, Blanca Parkinson, Dorothy Pena, Christopher L. Phelan, Jenifer Pichinson, Rolando Rodriguez, Donna Rosson, Gloria Route, Esquel Sanchez, Susan Schwertner, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Chloe Torres, Ana Trevino, Aaron Urie, Wanda Urie, Susan Westbrook, Aimee Wilson (on behalf of EPA Region 6), and Wanda Wilson.

The Office of the Chief Clerk received similar comment letters from the following persons who will be identified in the responses below as Group A: Lisa Averill, Alvin Baker, Eduardo (Eddie) Canales, Teresa Carillo, Annie Dixon, Jean Fuertez, Penny Gray, Don Guion, Billy Gunn, Kyle Krauskopf, Maria Krauskopf, Dewey Magee, Justin Martinez, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Abel Serrata, Susan Westbrook and Wanda Wilson.

This Response addresses all timely public comments received, whether or not withdrawn. If you need more information about this permit application or the permitting process, please call the TCEQ Public Education Program at 1-800-687-4040. General information about the TCEQ can be found at our website at www.tceq.texas.gov.

BACKGROUND

Description of Facility

Corpus Christi Liquefaction, LLC (Applicant) has applied to the TCEQ for a New Source Review Authorization under Texas Clean Air Act (TCAA) § 382.0518. This will authorize the modification of an existing facility that may emit air contaminants.

This permit will authorize the Applicant to update as-built flare emissions and operations, including the correction of stream compositions and vent rates, inclusion of flaring of boil-off gas from LNG tanks when the upstream Sinton Compressor Facility is shut down, and removal of the Totally Enclosed Ground Flare (TEGF) from the permit. The application also requests authorization of a new liquefied natural gas (LNG) marine loading scenario. The as-built portion of the proposed amendment is considered a retrospective correction of representations associated with the original Corpus Christi Liquefaction Stage I/II Project, authorized by a Prevention of Significant Deterioration (PSD) permit issued on September 12, 2014 and modified by a PSD permit issued on July 20, 2018. The application also includes a voluntary update to the Greenhouse Gas (GHG) PSD permit. The plant is located at 622 State Hwy 35 Gregory, San Patricio County, Texas 78359. Contaminants authorized under this permit include carbon monoxide (CO), hazardous air pollutants (HAPs), hydrogen sulfide (H_2S), nitrogen oxides (NO_X), organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less (PM_{10} and $PM_{2.5}$, respectively), and sulfur dioxide (SO_2).

Procedural Background

Before work is begun on the modification of an existing facility that may emit air contaminants, the person planning the modification must obtain a permit amendment from the commission. This permit application is for a permit amendment of Air Quality Permit Number 105710 and GHGPSDTX123M1. The application also seeks to correct prior representations associated with Air Quality Permit Number PSDTX1306M1.

The permit application was received on April 20, 2021 and declared administratively complete on April 23, 2021. The Notice of Receipt and Intent to Obtain an Air Quality Permit (first public notice) for this permit application was published in English on May 13, 2021, in *The News of San Patricio* and in Spanish on May 15, 2021, in the *Tejano Y Grupero News*. The Notice of Application and Preliminary Decision for an Air Quality Permit (second public notice) was published in English on May 26, 2022, in *The News of San Patricio* and in Spanish on June 1, 2022, in the *Tejano Y Grupero News*. A public meeting was held on June 30, 2022 in Portland, Texas. The public comment period ended on July 1, 2022. Because this application was received after September 1, 2015, it is subject to the procedural requirements of and rules implementing Senate Bill 709 (84th Legislature, 2015).

COMMENTS AND RESPONSES

COMMENT 1: Public Participation

State Senator Judith Zaffarini and State Representative J.M. Lozano requested that TCEQ hold a public meeting to provide an opportunity for the community to be heard and allow citizens to voice their concerns about the permit application. In addition, Group A and other commenters requested a public meeting and a contested case hearing.

(State Senator Judith Zaffarini, State Representative J.M. Lozano, Lisa Averill, Alvin Baker, Eduardo (Eddie) Canales, Teresa Carillo, Annie Dixon, Jean Fuertez, Penny Gray, Don Guion, Billy Gunn, Kyle Krauskopf, Maria Krauskopf, Dewey Magee, Justin Martinez, Brandon Marks, Blanca Parkinson, Chris Phelan, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Encarnacion Serna, Abel Serrata, Susan Westbrook, and Wanda Wilson)

RESPONSE 1: TCEQ welcomes public participation in the permitting process. The Executive Director instructs applicants to provide public notice as required by commission rules, in accordance with statutory requirements. Specifically, TCAA § 382.056 and corresponding rules in 30 TAC Chapter 39 require that public notice of applications be published in a newspaper of general circulation in the municipality in which the proposed plant is located or proposed to be located.

As described above, the Notice of Receipt and Intent to Obtain an Air Quality Permit (first public notice) for this permit application was published in English on May 13, 2021, in *The News of San Patricio* and in Spanish on May 15, 2021, in the *Tejano Y Grupero News.* The Notice of Application and Preliminary Decision for an Air Quality Permit (second public notice) was published in English on May 26, 2022, in *The News of San Patricio* and in Spanish on June 1, 2022, in the *Tejano Y Grupero News*.

TCEQ rules also require that a public meeting be held if a member of the legislature who represents the general area in which the facility is located requests a public meeting or if the Executive Director determines that there is a substantial or significant degree of public interest. *See* 30 TAC § 55.154(c)(2). At the request of Senator Zaffarini and Representative Lozano, TCEQ conducted a public meeting on June 30, 2022 in Portland, Texas. The public comment period began on May 15, 2021 and was extended to July 1, 2022, 30 days following the latter publication of the second public notice.

Any member of the public may submit comments on the application. This Response is the written response to all formal comments received during the comment period for the application. A copy of this Response will be mailed to each person who submitted a formal comment or who requested to be on the mailing list for this permit application and provided a mailing address. All timely formal comments received are included in this Response and are considered before a final decision is reached on the permit application. This Response provides a final 30-day period to request a contested case hearing.

In order for an issue to be considered at a contested case hearing, it must have been first raised in a comment or in a request for a contested case hearing during the public comment period by the affected person or group requesting the hearing. The commissioners' decision whether to grant a contested case hearing is based in part on the information the requester submits. When requesting a hearing, it is necessary to

demonstrate that the requester is an "affected person," in order to be granted party status. This means that the requester must be personally affected by the permit decision and that granting the permit would specifically affect the requester in ways not shared by the general public – for example, by impairing the requester's health or safety or by interfering with the use or enjoyment of the requester's property. Affected persons may request a hearing to challenge the Executive Director's decision on an application.

COMMENT 2: Health Effects / Air Quality

Commenters expressed concern about the effect of the emissions from the proposed project on the air quality and health of people, particularly sensitive populations such as the elderly, children, and people with existing medical conditions.

(Group A, Arman Alex, Lisa Averill, Alvin Baker, Rachel Caballero, Sylvia Campos, Eduardo Canales, Teresa A Carrillo, Elida Castillo, Colin Cox, Maricela Cuica, Annie Dixon, Diana Emerson, Alex Flucke, Jean Fuertez, Jose Gonzales, Penny Gray, Don Guion, Billy Gunn, Jennifer R Hilliard, James E Klein, Kyle Krauskopf, Maria Krauskopf, Uneeda E Laitinen, Joanna Lyons, Dewey Magee, Brandon Marks, Justin Martinez, Kathryn Masten, Zach Nickels, Patrick Arnold Nye, Isabel Araiza Ortiz, Jessica Palitza, Blanca Parkinson, Dorothy Pena, Christopher L. Phelan, Jenifer Pichinson, Rolando Rodriguez, Donna Rosson, Gloria Route, Esquel Sanchez, Susan Schwertner, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Chloe Torres, Ana Trevino, Wanda Urie, Susan Westbrook, and Wanda Wilson)

RESPONSE 2: The Executive Director is required to review permit applications to ensure they will be protective of human health and the environment. For this type of air permit application, potential impacts to human health and welfare or the environment are determined by comparing the Applicant's proposed air emissions to appropriate state and federal standards and guidelines. These standards and guidelines include the National Ambient Air Quality Standards (NAAQS), TCEQ Effects Screening Levels (ESLs), and TCEQ rules. As described in detail below, the Executive Director determined that the emissions authorized by this permit are protective of both human health and welfare and the environment.

Since this permit application included a retrospective review of PSD permits issued in 2014 and 2018, the evaluation outlined below was conducted in accordance with the PSD requirements for all applicable pollutants regulated under 40 Code of Federal Regulations (CFR) § 52.21.

NAAQS

The United States (U.S.) Environmental Protection Agency (EPA) created and continues to evaluate the NAAQS, which include both primary and secondary standards, for pollutants considered harmful to public health and the environment.[1] Primary standards protect public health, including sensitive members of the population such as children, the elderly, and those individuals with preexisting health conditions. Secondary NAAQS protect public welfare and the environment, including animals, crops, vegetation, visibility, and buildings, from any known or anticipated adverse effects from air contaminants. The EPA has set NAAQS for criteria pollutants, which include CO, lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), SO_2, PM_{10} and $PM_{2.5}$.

[1] *See* 40 CFR 50.2.

The Applicant conducted a NAAQS analysis for CO, NO_2, SO_2, and O_3. The first step of the NAAQS analysis is to compare the proposed modeled emissions against the established de minimis level. Predicted concentrations (GLC_{max}[2]) below the de minimis level are considered to be so low that they do not require further NAAQS analysis. Table 1, shown below, contains the results of the de minimis analysis for CO, NO_2, and SO_2, and O_3.

Table 1. Modeling Results for PSD De Minimis Analysis

Pollutant	Averaging Time	GLC_{max} (µg/m³)	De Minimis (µg/m³)
SO_2	1-hour (hr)	4	7.8
SO_2	3-hr	3	25
SO_2	24-hr	2	5
SO_2	Annual	0.4	1
NO_2	1-hr	80	7.5
NO_2	Annual	8	1
CO	1-hr	339	2000
CO	8-hr	123	500
Pollutant	**Averaging Time**	**GLC_{max} (ppb)**	**De Minimis (ppb)**
O_3	8-hr	3	1

The GLC_{max} for 1-hr NO_2 is based on the highest five-year average of the maximum predicted concentrations determined for each receptor. The GLC_{max} reported in the air quality analysis (AQA) for 1-hr SO_2 represents the maximum predicted concentration over five years of meteorological data rather than the highest five-year average of the maximum predicted concentrations determined for each receptor. The Air Dispersion Modeling Team (ADMT) determined overall conclusions do not change since the difference between the two GLC_{max} are less than 0.3 microgram per cubic meter (µg/m³). The GLC_{max} for all other pollutants and averaging times, except 8-hr O_3 represent the maximum predicted concentrations over five years of meteorological data.

[2] The GLC_{max} is the maximum ground level concentration predicted by the modeling.

As seen in Table 1, shown above, since the predicted concentrations of NO_2 (1-hr and Annual) were greater than the applicable de minimis level, a full NAAQS analysis was conducted for both the 1-hr and Annual NO_2 and the results are presented in Table 2, shown below.

The Applicant also performed an O_3 analysis as part of the PSD AQA. The Applicant evaluated project emissions of O_3 precursor emissions (NO_X and volatile organic compound (VOC)). For the project NO_X and VOC emissions, the Applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the Applicant used a Tier 1 demonstration tool developed by the EPA referred to as Modeled Emission Rates for Precursors (MERPs). The idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the 3000 tons per year (tpy) and 500 tpy (NO_X and VOC, respectively) Harris County source, the Applicant estimated an 8-hr O_3 concentration of 3 parts per billion (ppb). When the estimates of ozone concentrations from the project emissions are added together, the results are greater than the de minimis level. A full NAAQS analysis was conducted for 8-hr O_3 and the results are presented in Table 2, shown below.

Based on the procedures in the TCEQ Air Quality Modeling Guidance – APDG 6232 for a full NAAQS analysis, the total concentration was determined by adding the GLC_{max} to the appropriate background concentration. The GLC_{max} is comprised of all emissions at the project site under review as well as emissions from nearby sources. The background concentration is defined as the air contaminant concentrations present in the ambient air that are not attributed to the source or site being evaluated. The total concentration was then compared to the NAAQS to ensure that the concentration is below the standard. In this case, the results show that the 1-hr and Annual concentrations of NO_2 and the 8-hr concentration of ozone are below the standards.

Table 2. Total Concentrations for PSD NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Conc. = [Background + GLC_{max}] ($\mu g/m^3$)	Standard ($\mu g/m^3$)
NO_2	1-hr	142	35	177	188
NO_2	Annual	22	4	26	100
Pollutant	**Averaging Time**	**GLC_{max} (ppb)**	**Background (ppb)**	**Total Conc. = [Background + GLC_{max}] (ppb)**	**Standard (ppb)**
O_3	8-hr	5	61	66	70

The 1-hr NO_2 GLC_{max} is the highest five-year average of the 98th percentile of the Annual distribution of predicted daily maximum 1-hr concentrations determined for each receptor. The Annual NO_2 GLC_{max} is the maximum predicted concentration over five years of meteorological data. Air dispersion modeling resulted in a predicted GLC_{max} for NO_2 on a 1-hr averaging time to be 142 $\mu g/m^3$ and an Annual average to be 22 $\mu g/m^3$. Added to the background concentrations of 35 $\mu g/m^3$ and 4 $\mu g/m^3$ respectively, the resulting total NO_2 concentrations of 177 $\mu g/m^3$ and 26 $\mu g/m^3$ are below the 1-hr NAAQS of 188 $\mu g/m^3$ and the Annual NAAQS of 100 $\mu g/m^3$.

Background concentrations for NO_2 were obtained from the EPA AIRS monitor 480391016 located at 109B Brazoria Hwy 332 West, Lake Jackson, Brazoria County, Texas 77566. The three-year average (2016-2018) of the 98th percentile of the annual distribution of the maximum daily 1-hr concentrations was used for the 1-hr NO_2 value. The Annual concentration from 2020 was used for the Annual NO_2 value. The Applicant did not evaluate the most recent available monitoring data for 1-hr NO_2; however, the Applicant's use of an older dataset yields more conservative results. The use of this monitor is reasonable and acceptable based on the Applicant's review of county-wide population and emissions as well as a quantitative analysis of source emissions located within 10 kilometers (km) of the project site and the monitor location.

Modeling resulted in a predicted GLC_{max} for ozone on an 8-hr averaging time to be 5 ppb. Added to the background concentration of 61 ppb, the resulting total ozone concentration of 66 ppb is below the 8-hr standard of 70 ppb.

As noted above, the Applicant performed an O_3 analysis as part of the PSD AQA. The Applicant evaluated project sources and sources within 10 km of the project site authorized within the last two years with significant increases of O_3 precursor emissions (NO_x and VOC). For the NO_x and VOC emissions, the Applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the Applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs.

The background concentration for O_3 was obtained from the EPA AIRS monitor 483550025 located at 902 Airport Blvd, Corpus Christi, Nueces County, Texas 78405. A three-year average (2018-2020) of the annual fourth highest daily maximum 8-hr concentrations was used in the analysis (61 ppb). The use of the monitor is reasonable based on the Applicant's analysis of the surrounding land use and a quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site. The Applicant also reviewed EPA AIRS monitor 483550026; however, the background concentration from EPA AIRS monitor 483550025 was more conservative.

PSD Significant Monitoring Concentrations

The de minimis analysis results shown above in Table 1, were also used in comparison to the PSD Significant Monitoring Concentrations (SMCs). The EPA has concluded that impacts below the SMCs do not require the collection of pre-construction monitoring data for purposes of an air quality analysis. The de minimis analysis modeling results indicate that 24-hr SO_2, Annual NO_2, and 8-hr CO are below their respective monitoring significance level, as in Table 3, shown below.

Table 3. Modeling Results for PSD SMCs

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	SMC ($\mu g/m^3$)
SO_2	24-hr	2	13
NO_2	Annual	8	14
CO	8-hr	123	575

The GLC_{max} values represent the maximum predicted concentrations over five years of meteorological data. Since the project has a net emissions increase of 100 tpy or more of VOCs or NO_X, the Applicant evaluated ambient O_3 monitoring data to satisfy requirements in 40 CFR 52.21(i)(5)(i)(f).

PSD Increment Analysis

The de minimis analysis modeling results indicate that 1-hr and Annual NO_2 exceed the respective de minimis concentrations. When the de minimis analysis modeling indicate that a NAAQS pollutant exceeds its respective de minimis concentration, a PSD increment analysis is necessary for those NAAQS pollutants for which EPA has established an increment. Because the EPA has not established an increment for 1-hr NO_2 concentrations, only a PSD increment analysis for the predicted Annual NO_2 concentration was performed to demonstrate that the available increment is not exceeded. The PSD increment is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant. The results of the NO_2 increment analysis in Table 4, shown below, demonstrate that emissions of NO_2 from the site will not cause or contribute to an exceedance of the NO_2 PSD increment.

Table 4. Results for PSD Increment Analysis

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	Increment ($\mu g/m^3$)
NO_2	Annual	22	25

The GLC_{max} for Annual NO_2 represents the maximum predicted concentration over five years of meteorological data.

Additional Impacts Analysis

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

The ADMT evaluated predicted concentrations from the proposed project to determine if emissions could adversely affect a Class I area. The nearest Class I area, Big Bend National Park, is located approximately 565 km from the proposed site.

The predicted concentrations of 1-hr NO_2 and 1-hr SO_2 are greater than de minimis levels at a distance of 50 km from the proposed sources in the direction of the Big Bend National Park Class I area. The Big Bend National Park Class I area is an additional 515 km from the location where the predicted concentrations of 1-hr NO_2 and 1-hr SO_2 are greater than de minimis. Based on the predicted concentration gradients, NO_2 and SO_2 emissions from the proposed project are not expected to adversely affect the Big Bend National Park Class I area.

State Property Line Analysis

A State Property Line Analysis was also conducted for SO_2. The predicted concentration from the proposed emissions was compared to the standard in 30 TAC Chapter 112 to ensure that the concentration is below the standard, as demonstrated in Table 5, shown below. Because the result is below the de minimis threshold (two percent of the standard of 1,021 ug/m^3), there is no expectation of any adverse impacts from emissions of SO_2.

Table 5. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLC_{max} (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	4	20.42

The GLC_{max} reported in the AQA for 1-hr SO_2 is the highest five-year average of the maximum predicted concentrations determined for each receptor rather than the maximum predicted concentration over five years of meteorological data. The ADMT determined overall conclusions do not change since the difference between the two GLC_{max} is less than 0.3 µg/m^3.

Effects Screening Levels

ESLs are specific guideline concentrations used in TCEQ's evaluation of certain pollutants. These guidelines are derived by TCEQ's Toxicology Division and are based on a pollutant's potential to cause adverse health effects, odor nuisances, and effects on vegetation. Health-based ESLs are set below levels reported to produce adverse health effects, and are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions. TCEQ's Toxicology Division specifically considers the possibility of cumulative and aggregate exposure when developing the ESL values that are used in air permitting, creating an additional margin of safety that accounts for potential cumulative and aggregate impacts. Adverse health or welfare effects are not expected to occur if the air concentration of a pollutant is below its respective ESL. If an air concentration of a pollutant is above the screening level, it is not necessarily indicative that an adverse effect will occur, but rather that further evaluation is warranted.

The Applicant conducted a health effects analysis using the Modeling and Effects Review Applicability (MERA) guidance.[3] The MERA is a tool to evaluate impacts of non-criteria pollutants. It is a step-by-step process, evaluated on a chemical species by chemical species basis, in which the potential health effects are evaluated against the ESL for the chemical species. The initial steps are simple and conservative, and as the

[3] *See* APDG 5874 guidance document.

review progresses through the process, the steps require more detail and result in a more refined (less conservative) analysis. If the contaminant meets the criteria of a step, the review of human health and welfare effects for that chemical species is complete and is said to "fall out" of the MERA process at that step because it is protective of human health and welfare.

CO_2, ethane (C_2H_6), methane (CH_4), nitrogen (N_2), and propane (C_3H_8) are classified as simple asphyxiants. The TCEQ Toxicology Division has evaluated simple asphyxiants and determined they are not expected to cause adverse health effects. These constituents therefore fell out at MERA Step 0. All remaining constituents then proceeded to review under MERA Step 2.

Emission rates of xylene, ethanolamine, and triazinetriethanol were below the de minimis thresholds specified in MERA Step 2 and therefore fell out of the MERA evaluation at that stage.

The following constituents had predicted impacts that were below 10 percent of their respective ESL, and therefore fell out at MERA Step 3: isobutane, n-butane, isopentane, n-pentane, n-hexane, n-heptane, cyclohexane, cyclopentane, n-decane, ethylbenzene, methylcyclopentane, n-nonane, n-octane, toluene, xylene (-o), xylene (-p), lube oil, and Therminol 55.

Ethylene, benzene, and a MDEA Solution (n-methyldiethanolamine) did not meet Steps 1 through 6 of the MERA guidance and required further analysis. In accordance with MERA Step 7, site-wide modeling was performed and demonstrated that the predicted concentrations will not exceed the ESL (Table 6, shown below).

Table 6. Site-wide Modeling Results for Health Effects

Pollutant	CAS#	Averaging Time	GLC_{max} ($\mu g/m^3$)	GLC_{max} Location	ESL ($\mu g/m^3$)
n-methyldiethanolamine	105-59-9	1-hr	52	Eastern Property Line	96
benzene	71-43-2	1-hr	61	Western Property Line	170
ethylene	74-85-1	1-hr	137	Eastern Property Line	1400

In summary, based on the Executive Director's staff review, it is not expected that existing health conditions will worsen, or that there will be adverse health effects on the general public, sensitive subgroups, or the public welfare and the environment as a result of proposed emission rates associated with this project.

If this permit is approved, this project, when operated within the limits of the permit, should be protective of public health. Ongoing studies by epidemiologists to assess health impacts are not required based on the health effects review. A health effects review was conducted for the proposed facilities during the permit review and the permit was found to be protective of human health and the environment as described above.

COMMENT 3: Nuisance Conditions

One commenter expressed concern about nuisance conditions generated by the proposed project.

(Colin Cox)

RESPONSE 3: When a company operates in compliance with the proposed permit there should be no deterioration of air quality such that it impacts visibility or creates a nuisance. While nuisance conditions are not expected if the facility is operated in compliance with the terms of the permit, operators must also comply with 30 TAC § 101.4, which prohibits nuisance conditions.

COMMENT 4: Cumulative Impacts

Commenters expressed concern about the potential effects of cumulative (aggregate) impacts from multiple sites.

(Colin Cox, Jennifer Hilliard, James Klein, Uneeda Laitenen, Kathryn Masten, Patrick Arnold Nye, Encarnacion Serna, and Ana Trevino)

RESPONSE 4: The air quality analysis considered emissions from other sites in the evaluations of O_3 and NO_X. For the ozone analysis, the Applicant evaluated off-property sources of NO_X and VOC within 10 km (6.2 miles) of the project site. For the NO_2 analysis, the Applicant modeled all off-property permitted sources within 50 km (31.1 miles) of the site.

The other criteria pollutants did not require addition of emissions from other sites, because their modeled impacts were below de minimis levels established by the EPA. For the non-criteria pollutants, the health effects modeling showed that off-property concentrations associated with project emissions were below the ESL for each pollutant.

Health-based ESLs are set below levels reported to produce adverse health effects, and are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions.

TCEQ's Toxicology Division specifically considers the possibility of cumulative and aggregate exposure when developing the ESL values that are used in air permitting, creating an additional margin of safety that accounts for potential cumulative and aggregate impacts. Adverse health or welfare effects are not expected to occur if the air concentration of a pollutant is below its respective ESL.

COMMENT 5: Environmental Concerns

Commenters expressed concern about the effect of the proposed project on the environment.

(Sylvia Campos and Zach Nickels)

RESPONSE 5: The secondary NAAQS are those the EPA Administrator determines are necessary to protect public welfare and the environment, including animals, crops, vegetation, visibility, and structures, from any known or anticipated adverse effects associated with the presence of a contaminant in the ambient air. Because the emissions from this facility should not cause an exceedance of the NAAQS, air emissions from this facility are not expected to adversely impact land, livestock, wildlife, crops, or visibility, nor should emissions interfere with the use and enjoyment of surrounding land or water. *See* Response 2 for an evaluation of this project's impacts in relation to the NAAQS. Additionally, 30 TAC § 101.4 prohibits the discharge of contaminants which may be injurious to, or adversely affect, animal life.

COMMENT 6: Nonattainment Redesignation Concerns

Commenters expressed concern that the emissions from this project could cause the county to be designated as nonattainment.

(Blanca Parkinson and Encarnacion Serna)

RESPONSE 6: San Patricio County and neighboring Nueces County are currently designated as being in attainment or unclassifiable for all pollutants. An impacts analysis was conducted for this project and demonstrates that the emissions associated with the as built changes to the permits will not cause or contribute to an exceedance of the NAAQS; therefore, the project is not expected to cause the counties to be designated as nonattainment. *See* Response 2 for an evaluation of this project's impacts in relation to the NAAQS.

COMMENT 7: Air Monitoring

Commenters requested that an air monitor be located in their area. Commenters also suggested that Cheniere (the parent company of Corpus Christi Liquefaction, LLC) conduct fenceline monitoring at the site.

(Jennifer R Hilliard, Uneeda E Laitinen, and Patrick Arnold Nye)

RESPONSE 7: Due to cost and logistical constraints, the placement of air monitors is prioritized to provide data on regional air quality in areas frequented by the public. The existing air monitoring network is the result of a strategic balance of matching federal monitoring requirements with state and local needs. Consistent with federal air monitoring requirements, TCEQ evaluates the placement of air quality monitors within the air monitoring network using trends in population, reported emissions inventory data, and existing air monitoring data for a given area. In addition, TCEQ may prioritize monitor placement in areas with potential regional air quality issues, such as those related to increased oil and gas activity in the Barnett Shale and Eagle Ford Shale areas.

TCEQ annually evaluates the number and location of air monitors within its network to assess compliance with federal monitoring requirements and the adequacy of monitoring coverage for identified monitoring objectives as a part of the Annual Monitoring Network Plan provided to EPA on July 1 of each year. This plan is made available on TCEQ's website for public review and comment for 30 days beginning in mid-May. Requests for additional monitoring or the identification of additional monitoring needs may be made during this public comment period and will be considered along with other monitoring priorities across the state. To receive email announcements related to the ambient air monitoring network, including the

availability of the Annual Monitoring Network Plan for public review and comment, please visit the following link https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new and select "Air Monitoring Network Announcements."

Stationary air monitors are sited to measure air quality that is representative of a broader area or region. Therefore, monitors are not typically placed to measure the impacts from specific industrial facilities.

The Corpus Christi Liquefaction site does not currently have fenceline monitoring capabilities at the site. There is no federal or state requirement for LNG facilities to install and maintain fenceline monitoring at the facilities. Corpus Christi Liquefaction, LLC is required to perform monitoring of operational parameters to demonstrate compliance with the permitted limits to ensure protectiveness of their site. *See* Response 17 (Demonstrate Compliance with the Permit) for more details of monitoring.

COMMENT 8: Climate Change

Commenters expressed concern about the effects of this project in relation to climate change.

(Arman Alex, Sylvia Campos, James E Klein, Kathryn Masten, Patrick Arnold Nye, Jessica Palitza, and Blanca Parkinson)

RESPONSE 8: EPA has stated that unlike the criteria pollutants for which EPA has historically issued PSD permits, there are no NAAQS for GHGs, including no PSD increment. Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in permit reviews. Thus, EPA has concluded it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit. For these reasons, TCEQ has determined that an air quality analysis for GHG emissions would provide no meaningful data and has not required the Applicant to perform one.

Under the jurisdiction established by the Texas Legislature, TCEQ cannot prohibit a private company from using any product or fuel source as long as such usage does not result in a violation of applicable environmental regulations or the NAAQS. *See* Response 2 for an evaluation of this project's impacts in relation to the NAAQS.

COMMENT 9: Jurisdictional Issues

Location / Zoning: Commenters expressed concern regarding the location of the facility as it relates to current zoning ordinances and the proximity to residential and public areas, including schools.

(Blanca Parkinson and Donna Rosson)

Quality of Life / Aesthetics / Property Value: Commenters expressed concern about the effect of the proposed project on their quality of life, the aesthetics of the area, and their property value.

(Colin Cox, Joanna Lyons, Brandon Marks, Patrick Arnold Nye, Isabel Araiza Ortiz, Blanca Parkinson, Christopher L Phelan, Jessica Palitza, Susan Schwertner, Encarnacion Serna, and Chloe Torres)

Light Pollution: Commenters expressed concern about the light pollution from the proposed project.

(Group A, Lisa Averill, Alvin Baker, Eduardo Canales, Teresa A Carrillo, Colin Cox, Annie Dixon, Jean Fuertez, Jose Gonzales, Penny Gray, Don Guion, Billy Gunn, Jennifer R Hilliard, Kyle Krauskopf, Maria Krauskopf, Uneeda E Laitinen, Joanna Lyons, Dewey Magee, Brandon Marks, Justin Martinez, Patrick Arnold Nye, Dorothy Pena, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Susan Westbrook, and Wanda Wilson)

RESPONSE 9:

Location / Zoning: TCEQ does not have jurisdiction to consider plant location choices made by an applicant when determining whether to approve or deny a permit application, unless a statute or rule imposes specific distance limitations that are enforceable by the TCEQ. Zoning and land use are beyond the authority of TCEQ for consideration when reviewing air quality permit applications and such issues should be directed to local officials. The issuance of an air quality authorization does not override any local zoning requirements that may be in effect and does not authorize an applicant to operate outside of local zoning requirements.

Although TCEQ cannot consider zoning or land use, the TCEQ does conduct a health effects review to ensure that there will be no adverse impacts to human health and welfare. As described in Response 2, a protectiveness review was conducted for all contaminants emitted. The maximum concentrations were evaluated at the property line, at the nearest off-property receptor, and at any sensitive receptors located within 3,000 feet of the facilities and found to be protective of human health and the environment.

Quality of Life / Aesthetics / Property Value: TCEQ does not have the authority to consider potential effects from plant location, aesthetics, zoning and land use issues, or effects on property values when determining whether to approve or deny this air permit.

Light Pollution: TCEQ does not have authority under the TCAA to consider light pollution when determining whether to approve or deny a permit application.

COMMENT 10: Best Available Control Technology (BACT)

Commenters questioned the control technology proposed in the application.

Aimee Wilson asked for clarification on how the flare systems are assisted (air, steam, or other). Ms. Wilson noted that the flare emissions are based partially on the assumption of 99 percent DRE for compounds with three carbons or less, and 98 percent DRE for other VOCs/HAPs with four carbons or more. She reports that EPA has discovered that meeting the requirements of 40 CFR § 60.18 does not always account for certain problems that can reduce combustion efficiency, such as those caused by excess steam or air assistance to the flare. Steam- and air-assisted flares for certain waste gas streams are susceptible to performance problems that may reduce VOC destruction efficiency below 98 percent.

Ms. Wilson commented that, with respect to the DRE values represented for Corpus Christi Liquefaction's (CCL) assisted flares, EPA was unable to locate reasoned justification in the record for how the aforementioned permit terms (e.g., requirements for continuous flow monitoring and composition analyzer (or calorimeter) of vent gas,

visible emission monitoring, and pilot flame monitoring) are able to continuously ensure both 98 percent and 99 percent DRE for assisted flares during CCL's potential operating scenarios, including AGRU venting and low flow conditions. She also asked whether TCEQ has evaluated and determined that additional monitoring techniques (i.e., volumetric flow of assist media / properties at flare tip) are unnecessary for CCL's specific waste streams, as-constructed flare design, and operational characteristics to ensure that the stated 99 percent/98 percent DRE will be met in practice, and whether TCEQ has evaluated whether CCL's assisted flares are susceptible to over assistance and if such assistance could result in significant dilution in BTU value and reduction in DRE.

(Colin Cox, Jennifer R Hilliard, Uneeda E Laitinen, Patrick Nye, and Aimee Wilson)

RESPONSE 10: The TCAA and TCEQ rules require an evaluation of air quality permit applications to determine whether adverse effects to public health, general welfare, or physical property are expected to result from a facility's proposed emissions. As part of the evaluation of applications for new or amended permits, the permit reviewer audits all sources of air contaminants at the proposed complex and ensures that the facility will be using BACT applicable for the sources and types of contaminants emitted. BACT is based upon control measures that are designed to minimize the level of emissions from specific sources at a facility. Applying BACT results in requiring technology that best controls air emissions with consideration given to the technical practicability and economic reasonableness of reducing or eliminating emissions (*see* TCAA § 382.0518; *see also* 30 TAC § 116.111). BACT may be numerical limitations, the use of an add-on control technology, design considerations, the implementation of work practices, or operational limitations.

The Applicant has represented in the permit application that BACT will be used for the existing and modified sources. Use of appropriate control measures will minimize the amount of air contaminants emitted into the atmosphere by this facility. The contaminant increases authorized by this permitting action are CO, NO_x, SO_2, VOCs, and GHGs.

Since the original authorization was subject to PSD review and this action contains changes retrospectively associated with that project, the Applicant utilized EPA's Top-Down Method to evaluate and select BACT. EPA developed the top-down process to ensure that a BACT analysis satisfies the applicable legal criteria. TCEQ reviews BACT based on a three-tiered approach. However, both methods of review generally yield the same result and TCEQ allows applicants to choose which method of review to use.
The EPA Top-Down BACT analysis consists of a five-step process as listed below:

Step 1: Identify all control options.

Step 2: Eliminate technically infeasible options.

Step 3: Rank remaining control options.

Step 4: Eliminate control options based on evaluation of collateral impacts.

Step 5: Select BACT.

More information on the EPA Top-Down method for BACT analysis can be found in the TCEQ guidance Air Permit Reviewer Reference Guide – APDG 6110 – Air Pollution Control, Appendix E.

As part of the BACT review process, the TCEQ evaluates information from the EPA's RACT/BACT/LAER Clearinghouse (RBLC), on-going permitting in Texas and other states, and TCEQ's continuing review of emissions control developments.

The following are the primary control measures that meet current BACT, and are incorporated into the permit as controls that will be required on these facilities:

Wet/Dry Flares and Marine Flares

The authorized flares at this site include two elevated, air-assisted flare systems, along with one enclosed ground flare at the marine loading docks. Visible flames are more likely to be observed at the elevated flares, Wet/Dry Gas Flare 1 (EPN WTDYFLR1) and Wet/Dry Gas Flare 2 (EPN WTDYFLR2).

Flares are used to control routine emissions, planned maintenance, startup, and shutdown (MSS), and process upsets. BACT for VOCs is compliance with 40 CFR § 60.18 specifications for maximum tip velocity and minimum net heating value. A waste gas flow monitor and a gas composition analyzer or calorimeter are required. The flares are required to be equipped with a thermocouple or infrared monitor to ensure the presence of a pilot flame. Visible emissions are prohibited except for periods not to exceed a total of five minutes during any two consecutive hours. Flare pilot fuel is limited to no more than 4 parts per million (by) volume (ppmv) H_2S.

One commenter suggested that the flares at this site should comply with the design and operating requirements of 40 CFR Part 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. Since the Corpus Christi Liquefaction site is an LNG compression and export facility and not a petroleum refinery, the provisions of 40 CFR Part 63 Subpart CC do not apply to this site. The design and monitoring requirements in 40 CFR Part 63 Subpart CC have not been established as BACT for all flares across various industries. The flare requirements in the draft permit for this site are consistent with design and monitoring for flares at similar facilities, based on a review of the RBLC database and recently issued permits for LNG sites.

Regarding the assumed VOC destruction/removal efficiency (DRE) of the flares, TCEQ's practice is based on longstanding guidance that, when properly operated in accordance with permit requirements and the provisions of 40 CFR § 60.18, 99 percent DRE should be attained for compounds up to three carbons, and 98 percent DRE for compounds with four or more carbons. TCEQ flare guidance and assumed DRE values are based in part on historical EPA research and publications.[4] TCEQ also relies on EPA AP-42 Chapter 13.5 (*Industrial Flares*, revised September 1991), which states:

[4] *Flare Efficiency Study*, EPA-600/2-83-052, U.S. Environmental Protection Agency, Cincinnati, OH, July 1983; and *Evaluation of the Efficiency of Industrial Flares: Test Results*, EPA-600/2-84-095, U.S. Environmental Protection Agency, Research Triangle Park, NC, May 1984.

> *Properly operated flares achieve at least 98 percent combustion efficiency in the flare plume, meaning that hydrocarbon and CO emissions amount to less than 2 percent of hydrocarbons in the gas stream.* [AP-42 Section 13.5.2]
> *Recent EPA tests using propylene as flare gas indicated that efficiencies of 98 percent can be achieved when burning an offgas with at least 11,200 kJ/m^3 (300 Btu/ft^3).* [AP-42 Section 13.5.2]

TCEQ is aware that more recent studies have observed that, in some tested cases, compliance with the flare tip velocity and stream heating value requirements of 40 CFR § 60.18 alone may not always result in 98 percent or 99 percent DRE. However, at this juncture TCEQ has not seen enough conclusive data to establish a different and specific DRE value, or to substantially revise BACT requirements for flares that are not subject to sector-specific regulations such as 40 CFR Part 63 Subpart CC. Further, the proposed flare destruction efficiencies of 98 percent (4 or more carbons) and/or 99 percent (3 or less carbons) are consistent with at least eight RBLC data entries for VOC control since 2017, including sites in Texas and Ohio.

TCEQ is also aware of the possibility that over-assistance can occur at improperly operated steam- or air-assisted flares. As noted in the April 2012 publication from EPA's Office of Air Quality Planning and Standards (OAQPS) entitled *Parameters for Properly Designed and Operated Flares*, excess aeration "can actually result in a flare operating outside its stable flame envelope, decreasing the combustion efficiency," and "can dilute the flare vent gas, making the flare vent gas too lean to burn in the combustion zone."

For this site, the elevated flares, Wet/Dry Gas Flare 1 (EPN WTDYFLR1) and Wet/Dry Gas Flare 2 (EPN WTDYFLR2), are air-assisted. The flares are required to comply with the design and operating requirements of 40 CFR § 60.18. 40 CFR § 60.18(c)(1) prohibits visible emissions, except for a maximum of 5-minutes during any 2 consecutive hours. 40 CFR § 60.18(c)(2) requires that flares be operated with a flame present at all times. 40 CFR § 60.18(c)(3)(ii) requires that the net heating value of gas combusted at air-assisted flares be 300 British thermal unit (Btu) per standard cubic foot or feet (Btu/scf) or greater. 40 CFR § 60.18(c)(5) requires that air-assisted flares shall be designed and operated with an exit velocity less than the velocity (Vmax) as determined in 40 CFR § 60.18(f)(6). Special Condition No. 14 of the permit requires a continuous parametric monitoring to ensure compliance with the provisions of 40 CFR § 60.18.

As indicated in the *EPA Air Pollution Control Cost Manual* (August 2019, Section 3.2, Chapter 1), in air-assisted flares, forced air is used "to provide the combustion air and the mixing required for smokeless operation," and "an adequate fuel and air supply and good mixing are required to achieve complete combustion and minimize smoke formation."

As indicated above, 40 CFR § 60.18(c)(1) prohibits visible emissions, except for a maximum of 5-minutes during any 2 consecutive hours. This prohibition on visible emissions is reiterated in Special Condition No. 14.D of the permit. TCEQ believes that compliance with the visible emissions limit is one indicator of proper use air-assist and good combustion. The additional continuous monitoring requirements for pilot flame, waste gas flow, and composition for minimum heating value (Special Condition 14.B, 14.C, and 14.E) will also help ensure good combustion at the flares. The Marine Flare (EPN MRNFLR) at this site is a non-assisted, enclosed ground flare, so over-assistance is not expected to be an issue of concern.

TCEQ will continue to evaluate new data and new federal requirements for flares and will revise BACT and monitoring requirements for these sources at such time sufficient data and/or applicable federal regulations become available. In the meantime, we believe compliance with the monitoring requirements in draft Special Condition No. 14 (regarding the pilot flame, flow rate, and stream composition or heating value), in conjunction with compliance with the federal provisions of 40 CFR § 60.18, will ensure that the authorized emission limits are not exceeded.

Marine Loading of LNG

During marine vessel conditioning to prepare for loading of LNG, warm or inerted vapors are routed to the marine flare to control VOC. The flare must meet 40 CFR § 60.18 specifications as described above. A flow monitor and gas composition analyzer or calorimeter are required.

For emission prevention of CH_4 during vessel loading of LNG, cryogenic temperature and insulation of loading arms are utilized to minimize boil off gas. Boil off gas that meets quality and temperature specifications must be returned to the process trains. Boil off gas from the LNG tanks is routed to the marine flare during emergency shut-down testing at the upstream Sinton compressor facility.

COMMENT 11: Emission Rates and Calculations

Commenters questioned the accuracy and methodology for determining the emission rates for the proposed project.

(Colin Cox, James E Klein, Encarnacion Serna, and Errol Alvie Summerlin)

RESPONSE 11: Emission calculations for the wet/dry flares and marine flare were based on the TCEQ Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers - RG-109 for the determination of NO_X, CO, and VOC. SO_2 emissions for the flares were based on the represented sulfur content in the gases to be flared. In accordance with RG-109 (page 31), "[p]articulate emissions [from flares] should be negligible and should therefore not be estimated since smoking flares are excluded from permitting as defined in 30 TAC § 111.111." Additionally, Special Condition No. 14.D of the draft permit stipulates that "[t]he flares shall be operated with no visible emissions except during periods not to exceed a total of five minutes during any two consecutive hours." This condition will ensure minimal particulate emissions.

The Annual NO_X emission factor of 0.11 pound per million British thermal units (lb/MMBtu) initially proposed in the permit application was later revised in an October 4, 2021 submittal from the Applicant. The revised calculations used TCEQ approved low- and high-Btu emission factors for separate portions of the waste gas directed to the flares on an annual basis. The revised calculations resulted in consistency with

TCEQ calculation guidance while still providing for some expected variability in the heating value of the waste streams. The permit reviewer conducted an independent review of the emissions estimates from the flares and determined they were reasonable. Regarding the VOC DRE for the flares, *see* Response 12 for the BACT discussion.

The Applicant represented the appropriate methodologies to control and minimize emissions and utilized corresponding control efficiencies when calculating the emission rates. As provided in 30 TAC § 116.116(a), the Applicant is bound by these representations, including the represented performance characteristics of the control equipment. Additionally, the permit holder must operate within the limits of the permit, including the emission limits as listed in the Maximum Allowable Emissions Rate Table (MAERT).

COMMENT 12: Federal Applicability

Commenters expressed concern about the quantity of emissions that will result from the project and if the project requires federal review.

(Patrick Arnold Nye)

RESPONSE 12: A PSD major site is defined as a site emitting over 250 tpy of any one pollutant if it is an unnamed source or 100 tpy of any one pollutant if it is one of twenty-eight sources named in 40 CFR § 52.21(b)(1)(a). Once it is determined a site is major, the project emission increases for each pollutant are compared to the applicable significant emission rate to determine if that pollutant requires PSD review.

This site is a named source and has site-wide emission rates greater than 100 tpy of at least one pollutant, making it a major source under PSD regulations. With respect to PSD applicability, there are two distinct types of projects included in this permitting action: a new project and a retrospective project. The new project and retrospective project were evaluated separately for purposes of federal applicability.

The new project includes a proposal to vent two LNG carriers to the marine flare simultaneously, instead of one carrier at a time. The project emission increases were evaluated and determined to be below the major modification threshold for each pollutant.

The retrospective project involved corrections to emission rates associated with the original PSD permit for this site (Permit PSDTX1306) and the subsequent PSD modification (Permit PSDTX1306M1). The newly quantified emissions for the present project are based on higher vent gas rates to the wet/dry flares than originally quantified, more accurate stream composition data for the marine flare, and flaring of boil-off gas when the upstream Sinton Compressor Facility is undergoing required regulatory emergency shutdown (ESD) testing. During the required ESD testing, all liquefaction trains must be shut down; therefore boil-off gas, which is normally routed back to the process trains, has to be routed to the marine flare.

The retrospective PSD review included adding the newly quantified emission corrections to the project increase values from the prior PSD actions. For retrospective reviews, the BACT analysis must satisfy federal BACT requirements, and must be evaluated based on present-day technology. A retrospective air quality analysis is also performed, including current meteorology and all requirements for PSD dispersion modeling. These retrospective procedures for BACT and the air quality analysis were included in the technical review for this application.

The only retrospective emission correction that exceeded the significant emission rate level (on an allowable-to-allowable basis) in the original application for the current project was for CO. On October 7, 2022 the Applicant submitted revisions to the permit application to reduce the proposed CO emission increase to a level below the significance (major modification) threshold for this project. The permit conditions and emission limits have been revised to require the Applicant to keep rolling 12-month records to demonstrate compliance with the proposed emission rates as specified in draft Special Condition No. 14.N.

Nonattainment New Source Review (NNSR) permitting is applicable for major sites, defined as a site emitting over the threshold for the nonattainment pollutant in that county. Texas nonattainment area designations are specified in 40 CFR § 81.344. Once it is determined a site is major, the project emission increases for each pollutant are compared to the applicable significant emission rate to determine if that pollutant requires netting. If the project's net emissions are greater than the netting threshold, the project is subject to NNSR permitting.

Because the Corpus Christi Liquefaction site is not located in a nonattainment county, the project is not subject to NNSR permitting.

COMMENT 13: Emergency / Evacuation

Commenters expressed concern about the safety of the facility. They ask how neighbors would be notified in the case of an accident and whether there is an evacuation plan.

(Jennifer R Hilliard, James E Klein, Uneeda E Laitinen, Blanca Parkinson, and Susan Schwertner)

RESPONSE 13: TCEQ takes health and environmental concerns seriously. The proposed permit meets all federal and state regulatory requirements and is protective of human health and the environment. If you have been adversely impacted by emissions from the facility, you may file a complaint with the Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll free Environmental Complaints Hotline at 1-888-777-3186.

In the event of an emergency, the Local Emergency Planning Committee and the regulated entity have the primary responsibility of notifying potentially impacted parties regarding the situation. In addition, as set forth in 30 TAC § 101.201(a), regulated entities are required to notify the TCEQ regional office within 24 hours of the discovery of releases into the air and in advance of maintenance activities that could or have resulted in excess emissions.

Proposed projects which involve toxic chemicals that are known or suspected to have potential for life threatening effects upon off-facility property in the event of a disaster and involve manufacturing processes that may contribute to the potential for disastrous events, may require a disaster review for the application. This application did not require a disaster review.

COMMENT 14: Application Completeness

Commenters stated that the application is incomplete.

(Colin Cox, James E Klein, and Encarnacion Serna)

RESPONSE 14: The Air Permits Division and other applicable TCEQ staff have conducted a thorough review of this permit application to ensure it meets the requirements of all applicable state and federal standards. An applicant is bound by its representations in the application and those representations become an enforceable part of the permit, including production rates, authorized emission rates, and equipment. If the Applicant deviates from the representations made in the application, on which the permit was developed, the Applicant may be subject to enforcement action.

See Response 2 for a detailed description of the air quality analysis and its results. Additionally, *see* Response 12 for an explanation of the BACT analysis for this project and destruction/removal efficiency values for the flares.

COMMENT 15: Environmental Justice

Commenters expressed concern regarding the environmental justice implications of this project.

(Patrick Arnold Nye and Chloe Torres)

RESPONSE 15: Air permits evaluated by TCEQ are reviewed without reference to the socioeconomic or racial status of the surrounding community. TCEQ is committed to protecting the health of the people of Texas and the environment regardless of location. A health effects review was conducted for the proposed facilities during the permit review and the permit was found to be protective of human health and the environment.

TCEQ encourages participation in the permitting process. The Office of the Chief Clerk works to help the public and neighborhood groups participate in the regulatory process to ensure that agency programs that may affect human health or the environment operate without discrimination and to make sure that concerns are considered thoroughly and are handled in a way that is fair to all. The Office of the Chief Clerk can be contacted at 512-239-3300 for further information. Additionally, more information may be found on the TCEQ website: Title VI Compliance at TCEQ - Texas Commission on Environmental Quality - www.tceq.texas.gov.

COMMENT 16: Corporate Profits

Commenters questioned the corporate profits made by this project at a cost to the surrounding community.

(Elida Castillo, Jose Gonzales, Joanna Lyons, Brandon Marks, and Ana Trevino)

RESPONSE 16: TCEQ is not authorized to consider a company's financial status, nor its profits, in determining whether a permit should be issued. TCEQ's review of this company's application included analysis of health impacts and application of BACT, and based on this review, the facility should comply with all applicable health effects guidelines and emission control requirements. Continued compliance with health effects guidelines and BACT requirements is expected if the company operates in compliance with the permit terms and conditions. Individuals are encouraged to report any environmental concerns at the facility by contacting the Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. The TCEQ evaluates all complaints received. If the facility is found to be out of compliance with the terms and conditions of the permit, it may be subject to possible enforcement action.

COMMENT 17: Demonstrating Permit Compliance

Commenters asked how the Applicant will demonstrate compliance with the terms of their permit on a continuous basis.

Aimee Wilson stated that if TCEQ intends to limit the amount of vent gas sent to each flare based on application representations, such limiting representations should be included on the face of the permit or specifically referenced. She also asked whether TCEQ has determined that additional monitoring techniques (i.e., volumetric flow of assist media, properties at the flare tip) are unnecessary for the site's waste streams, flare design, and operational characteristics to ensure the DRE is met.

(Colin Cox, Jennifer R Hilliard, Patrick Arnold Nye, Derek Parker, Encarnacion Serna, and Aimee Wilson)

RESPONSE 17: Special conditions have been included as part of the proposed permit to ensure the Applicant can demonstrate compliance with the emission limitations set forth in the permit. Emissions units associated with this project will be monitored by:

a) continuous monitoring of H_2S (1-hr average) in fuel used for thermal oxidizers, flare pilots, and turbines. Fuel is limited to 4 ppmv H_2S.

b) continuous monitoring of the flare pilot flames by a thermocouple or an infrared monitor to ensure the control device is functioning.

c) continuous monitoring of the vent stream flow to the flares (hourly average).

d) continuous monitoring of the flare vent stream with a composition monitor or calorimeter is to ensure minimum heating value (hourly average).

e) monitoring of visible emissions as required by 30 TAC § 111.111(a)(4).

f) monthly audio, visual, and olfactory (AVO) inspections for the flare capture systems.

g) A bypass for the control equipment (flares) is not authorized.

See Response 10 for regarding BACT and assumed DRE for the flares.

The permit also requires monitoring for units outside the scope of this project as follows:

- fuel tariff records to show compliance with the 4 ppmv H_2S limit in the fuel used for the turbines.
- records of visual inspections and seal gap measurements at the condensate storage tank in accordance with 40 CFR § 60.113b.
- records of monthly and rolling twelve-month throughput at the condensate storage tank.
- routine monitoring of the carbon canister at the spent scavenger tank in accordance with EPA Method 21 (40 CFR Part 60, Appendix A). The canister is required to be replaced before breakthrough occurs.
- annual leak checks of condensate tank trucks in accordance with 40 CFR § 60.502(e).
- continuous monitoring of the pilot flame and combustion chamber temperature at the condensate truck loading vapor combustion unit.
- continuous monitoring of the combustion chamber temperatures at the thermal oxidizers.
- quarterly monitoring of visible emissions for non-flare sources (flare monitoring of visible emissions is required by 30 TAC § 111.111(a)(4)).
- stack sampling for NO_x, O_2, CO, VOC, and SO_2 from the turbines.
- stack sampling for VOC and destruction efficiency at the thermal oxidizers.
- continuous monitoring of the fuel consumption at the turbines.
- leak detection and repair (LDAR) monitoring of fugitive components in accordance with the TCEQ 28VHP program.
- monitoring and record keeping of maintenance, startup, and shutdown events in accordance with Special Condition Nos. 24 through 26.

The permit holder is also required to maintain records to demonstrate compliance, including the monitoring listed above. Records must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. For stream flows, operational parameters, or other data not specifically listed in the special conditions of the permit, any such parameters or data relied upon for calculating a unit's potential to emit are considered conditions upon which the permit is issued (*see* General Condition No. 1 of the TCEQ NSR permit). This information may therefore be relied upon for purposes of compliance and enforcement.

The Regional Office may perform investigations of the plant as required. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all calculations and required recordkeeping.

The TCEQ evaluates all complaints received. If a facility is found to be out of compliance with the terms and conditions of its permit, it will be subject to investigation and possible enforcement action. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any

permit or other environmental regulation by contacting the TCEQ Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186.

Citizen-collected evidence may be used in such an action. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals can provide information on possible violations of environmental law. The information, if gathered according to agency procedures and guidelines, can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Report an Environmental Problem? Do You Have Information or Evidence?" This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at http://www.tceq.texas.gov (under Publications, search for document number 278).

COMMENT 18: Compliance History

Commenters questioned the compliance history of the Applicant and site.

(Group A, Sylvia Campos, Jennifer R Hilliard, Uneeda E Laitinen, Dewey Magee, Kathryn Masten, Isabel Araiza Ortiz, Encarnacion Serna, and Ana Trevino)

RESPONSE 18: During the technical review of the permit application, a compliance history review of both the company and the site is conducted based on the criteria in 30 TAC Chapter 60. These rules may be found at the following website: https://www.tceq.texas.gov/rules/index.html.

The compliance history is reviewed for the five-year period prior to the date the permit application was received and includes multimedia compliance-related components about the site under review. These components include: enforcement orders, consent decrees, court judgments, criminal convictions, chronic excessive emissions events, investigations, notices of violations, audits and violations disclosed under the Audit Act, environmental management systems, voluntary on-site compliance assessments, voluntary pollution reduction programs, and early compliance. However, the TCEQ does not have jurisdiction to consider violations outside of the State of Texas.

A company and site may have one of the following classifications and ratings:

- High: rating below 0.10 – complies with environmental regulations extremely well;
- Satisfactory: rating 0.10 – 55.00 – generally complies with environmental regulations;
- Unsatisfactory: rating greater than 55.00 – fails to comply with a significant portion of the relevant environmental regulations.

This site has a rating of 2.24 and a classification of Satisfactory. The company rating has a rating of 2.24 and a classification of Satisfactory. The company rating reflects the average of the ratings for all sites the company owns in Texas.

COMMENT 19: Complaints

Commenters asked how to make complaints and how complaints are handled.

(Jennifer R Hilliard, Patrick Arnold Nye, Encarnacion Serna, and Errol Alvie Summerlin)

RESPONSE 19: The TCEQ evaluates all complaints received. If a facility is found to be out of compliance with the terms and conditions of its permit, it will be subject to investigation and possible enforcement action. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by contacting the TCEQ Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186.

Citizen-collected evidence may be used in such an action. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals are providing information on possible violations of environmental law and the information can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Make an Environmental Complaint? Do You Have Information or Evidence?" This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at http://www.tceq.texas.gov (under Publications, search for Publication Number 278).

COMMENT 20: Inspections

Commenters asked how often the facility will be inspected.

(Uneeda E Laitinen, Patrick Arnold Nye, and Encarnacion Serna)

RESPONSE 20: The Regional Office performs investigations of the plant on a regular schedule as required. This site is a major source under Title V of the Clean Air Act. As such, the site is required to be physically inspected at a minimum frequency of once every three years. The deviation reports required by the Title V permit are electronically reviewed by the Regional Office at least once per year. In addition, the Regional Office conducts investigations on an as-needed basis in response to citizen complaints. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all calculations and required recordkeeping. Additional investigations will occur in response to complaints reported by contacting the TCEQ Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186.

COMMENT 21: Violations/Enforcement

Commenters asked about the consequences of violating the terms of the permit and about the number reported violations.

(Lisa Averill, Alvin Baker, Sylvia Campos, Eduardo Canales, Teresa A Carrillo, John Delagarza, Annie Dixon, Diana Emerson, Jean Fuertez, Penny Gray, Don Guion, Billy Gunn, Jennifer R Hilliard, James E Klein, Kyle Krauskopf, Maria Krauskopf, Uneeda E

Laitinen, Joanna Lyons, Dewey Magee, Brandon Marks, Justin Martinez, Kathryn Masten, Patrick Arnold Nye, Isabel Araiza Ortiz, Blanca Parkinson, Dorothy Pena, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Chloe Torres, Wanda Urie, Susan Westbrook, and Wanda Wilson)

RESPONSE 21: There are a number of mechanisms by which the TCEQ monitors compliance with permit conditions and state and federal regulations. To the extent that personnel, time, and resources are available, the TCEQ investigates permit operations to ensure compliance with applicable rules and regulations. Although specific to each site, investigations generally explore the entire operation of the plant. The investigation schedule may be increased if violations are found, repeated, or if a regulated entity is classified as an unsatisfactory performer.

The permit holder is also required to maintain records to demonstrate compliance. In addition to records required by the NSR permit, all Title V permit holders must submit deviation reports for any six-month period where deviations occur, and must submit permit compliance certifications at least annually, whether a deviation has occurred or not. The deviation report must include all deviations that occur during that time period. A deviation is defined in 30 TAC § 122.10(5) as any indication of noncompliance with a term or condition of the permit as found using compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information.

Records must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. The Regional Office may perform investigations of the plant as required. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all calculations and required recordkeeping.

Staff from the TCEQ regional office evaluate all complaints received and regional investigations and are not limited by media. Complaints regarding regulated entities may be addressed to the TCEQ Corpus Christi Regional Office at (361) 825-3100 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. Citizen-collected evidence may be used. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual. The TCEQ regional offices prioritize their responses to complaints based on the potential for adverse health effects associated with the alleged violation. For example, a "priority one" case means serious health concerns exist, and the case will be investigated immediately. A "priority four" case, on the other hand, means no immediate health concerns exist; therefore, it will be investigated within 30 days.

Violations are usually addressed through a notice of violation letter that allows the operator a specified period of time within which to correct the problem. The violation is considered resolved upon timely corrective action. A formal enforcement referral will be made if the cited problem is not timely corrected, if the violation is repeated, or if a violation is causing substantial impact to the environment or neighbors. In most cases, formal enforcement results in an agreed enforcement order including penalties and technical requirements for corrective action. Penalties are based upon the severity and duration of the violation(s). Violations are maintained on file and are included in the calculation of a facility and a person's compliance history. Compliance history ratings are considered during permit application reviews.

Generally, administrative and civil penalties in the amount of $0-10,000 and $50 - 25,000 respectively, maybe assessed for violations of the TCEQ rules. *See* TEX. WATER CODE Chapter 7. However, the specific penalties associated with each violation will be determined on a case-by-case basis according to the TCEQ Penalty Policy.

First, the commission will evaluate the penalty based on the size of the respondent's (i.e., alleged violator) site. For example, any stationary facility that has the potential to emit more than 100 tpy of any air pollutant is classified as a "major source." Second, the "harm" is categorized as major, moderate, or minor, according to the "Environmental/Property and Human Health Matrix." The harm classification is based on whether an "actual" or "potential" release of contaminants occurred. Third, additional factors including compliance history, repeat violations, culpability, and whether there was a good faith effort to comply with regulations, will be assessed and will influence the overall amount of the penalty. In addition, any economic benefit or monetary gain derived from a failure to comply with TCEQ rules or regulations will be considered and may increase the penalty. The final penalty amount will be checked against the minimum and maximum penalty amounts allowed by statute, per day of violation, in order to obtain the final assessed penalty.

Additional information about the TCEQ penalty policy may be obtained from the TCEQ website, Penalty Policy of the Texas Commission on Environmental Quality, available at http://www.tceq.texas.gov/publications/rg/rg-253.html.

COMMENT 22: TCEQ's Responsibility to the Community

Commenters asked that the TCEQ consider residents and their wishes and choose not to approve the permit registration for the proposed plant.

(Jessica Palitza, Blanca Parkinson, Dorothy Pena, Rolando Rodriguez, Chloe Torres, Ana Trevino, Aaron Urie, and Wanda Urie)

RESPONSE 22: The Executive Director's staff has reviewed the permit application in accordance with the applicable state and federal law, policy and procedures, and the agency's mission to protect the state's human and natural resources consistent with sustainable economic development. The TCEQ cannot deny authorization of a facility if a permit application contains a demonstration that all applicable statutes, rules, and regulations will be met.

COMMENT 23: Type of Modification

One commenter stated that the proposed action is based on a permit-by-rule (PBR) process that is comprised of numerous incremental emission increases, and that the proposed changes should be treated as a major modification.

(Patrick Arnold Nye)

RESPONSE 23: The corrections and new changes included in the permit application were proposed to be processed via NSR case-by-case review to amend the NSR permit in accordance with 30 TAC Chapter 116, Subchapter B (New Source Review Permits). The corrections and changes were not proposed to be authorized via 30 TAC Chapter 106 (Permits by Rule).

The permit application contained projects that were both new and retrospective in nature. A retrospective (or "as-built") project seeks to correct representations that were associated with a prior permit application. The retrospective components of this application were evaluated on the basis of how the corrections would have affected the initial permit to construct, which included a PSD permit issued September 12, 2014, along with the subsequent modification of the PSD permit issued July 20, 2018. The retrospective review included updates to the previous PSD BACT analysis and PSD requirements in the air quality analysis.

While the review for the retrospective project was technically equivalent to a review that would have been conducted for a new PSD application, the retrospective correction for CO, as initially proposed for this project, was above the major modification threshold. Accordingly, the project should have been recognized as newly triggering PSD, instead of merely triggering from a retrospective viewpoint. The Notice of Application and Preliminary Decision (NAPD), based on as-proposed emissions, should have indicated that CO was being emitted in a significant amount, and a Preliminary Determination Summary (PDS) should have been issued, along with a new PSD modification number. This was an oversight by the staff reviewer assigned to the project.

As a remedy to address the CO emission correction and the associated permit implications, the Applicant has proposed to reduce project emissions of CO and accept a federally enforceable permit limit that will require the project emissions to remain under the major modification threshold. Under this scenario a new PSD project will not be triggered for this permit application. The reduced project emissions will be monitored according to the requirements of Special Condition No. 14.N, and the monitoring will be used to show compliance with the emission limits in the MAERT for the wet/dry flares and marine flare.

COMMENT 24: Multiple Amendments and As-Built Projects

Commenters expressed concern about the number of as-built applications that have been submitted for this project, and TCEQ's issuance of permits associated with those as-built applications.

(Uneeda Laitinen, Patrick Nye, Jessica Palitza, Blanca Parkinson, Emcarnacion Serna, Errol Summerlin, and Aimee Wilson)

RESPONSE 24: 30 TAC § 116.116(b)(1) provides that a permit holder shall not vary from any representation or permit condition without obtaining a permit amendment if the change will cause a change in the method of control of emissions, a change in the character of emissions, or an increase in the emission rate of any contaminant. There are occasions when, after receiving a permit to construct or modify a source, the permit holder discovers that actual emission rates have exceeded current permit limits, even if no physical modification or change in method of operation has taken place. These emission exceedances may be discovered by monitoring, sampling, stack testing, or other means.

Because permit limits have been exceeded, the permit holder may be subject to enforcement action, which is under the purview of the TCEQ Office of Compliance and Enforcement. In addition, a permit amendment is necessary to evaluate the new emissions for protection of the NAAQS, public health, and the environment, and to re-examine requirements for control technology and federal permitting applicability (such as PSD or Nonattainment NSR).

When these newly identified emissions are represented in a permit application, the project is typically referred to as an "as-built" amendment. Since the initial permit to construct the Corpus Christi Liquefaction facility was issued on September 12, 2014, the following permit actions were approved for this site by the TCEQ:

> February 20, 2015: A permit revision to change the planned turbine design from water-injected to dry low emission turbines. The change resulted in allowable emission decreases for PM, PM_{10}, $PM_{2.5}$, NO_X and CO.
>
> March 21, 2017: A permit amendment to change the planned marine flare design from an elevated flare to an enclosed ground flare. The change resulted in allowable annual emission increases in VOC, NO_X, CO, and SO_2.
>
> July 20, 2018: An as-built permit amendment to correct gas compositions, vent gas flow to the flares, heat input capacity to the thermal oxidizers, fuel input for the turbines, throughput rates for tanks and loading, wastewater activities and storage, fugitive component counts, and MSS activities. Allowable annual emissions increased for all pollutants except H_2S. This amendment triggered PSD.
>
> November 4, 2020: An as-built permit amendment to correct flare emission calculations to account for purge gas, inconsistent feed gas composition, higher H_2S content from the Acid Gas Recovery Unit (AGRU), and additional MSS volume (including boil-off gas).

Annual emission caps for the flares were also established. In addition, the amendment corrected condensate composition, fugitive component counts, and vehicle fuel tank throughput. A ground flare previously authorized by standard permit was consolidated into the permit (this ground flare project was subsequently cancelled). Allowable annual emissions increased for VOC, NO_X, CO, SO_2, H_2S, and GHGs.
The 2015 and 2017 actions listed above may be considered "as-designed" changes, since the site had not begun operation. The 2018 and 2020 actions may be considered "as-built" changes, based upon data and emissions from actual operation. As-designed

and as-built projects are not uncommon as new and more accurate information becomes available to the owner/operator, and the TCEQ encourages permit holders to submit these updates as soon as possible for appropriate review.

TCEQ rules (*see* 30 TAC Chapter 116) do not establish a specific limit on the number of as-designed or as-built amendments that an applicant may submit. However, when these types of corrections are requested in a permit application, TCEQ evaluates the changes to determine whether they are truly corrections of a prior project, whether any new modifications are included, whether any projects should be aggregated, and whether any regulatory circumvention has occurred.

The review also includes any applicable corrections to the BACT/LAER analysis, the air quality analysis, and the federal applicability analysis. Both the as-built and new components of the current project were reviewed under this criteria and in accordance with all applicable state and federal rules.

The draft permit for the current project contains requirements to continuously monitor the pilot flames, vent stream flow rate, and vent stream composition at the flares to ensure compliance with 40 CFR § 60.18. Regular emission calculations are also required to ensure that allowable emission rates are not exceeded. Existing permit conditions for facilities untouched by the proposed amendment also include extensive monitoring requirements for other emission units.

30 TAC § 116.116 specifies that, in addition to permit conditions themselves, all representations regarding construction plans and operational procedures in a permit application are conditions upon which a permit is issued.

The Corpus Christi Liquefaction site is subject to inspection at any time by TCEQ personnel, the EPA, or any other applicable regulatory authority. Any variation from representations, permit conditions, or emission limits would subject the permit holder to enforcement action. The TCEQ is confident that the permit representations, permit conditions, and all required monitoring data would provide sufficient information to determine whether the facility is operating in accordance with represented design and within permitted limits.

COMMENT 25: Other Media/Authorizations

Commenters expressed concern regarding contamination of water and soil related to this site.

(Arman Alex, Elida Castillo, Dorothy Pena, and Encarnacion Serna)

RESPONSE 25: Although the TCEQ is responsible for the environmental protection of air and water as well as the safe management of waste, this proposed permit will regulate the control and abatement of air emissions only. Therefore, issues regarding water quality or discharge and the handling of waste are not within the scope of this review. However, the Applicant may be required to apply for separate authorizations for water quality, water usage, or the handling of waste.

COMMENT 26: Support for Project

Some commenters expressed support for the proposed project.

(Rosaura De Los Santos Bailey, Mike Culbertson, and Adam Gawarecki)

RESPONSE 26: TCEQ appreciates comments and interest from the public in environmental matters before the agency and acknowledges the comments in opposition and support of the permit amendment.

CHANGES MADE IN RESPONSE TO COMMENT

The Executive Director has changed certain provisions of the draft permit to reduce the allowable emission increase associated with this project. These changes and the reasons for these changes are more fully described below.

Special Conditions

Previous	Current	Change
-	14.N	Added a monthly emission calculation requirement for the wet/dry flares and the marine flare, based on the monitoring requirements of Special Condition No. 14.E, in order to demonstrate compliance with authorized emission limits on a rolling 12-month basis.

MAERT

EPNs	Change
WTDFLR1, WTDFLR2, MRNFLR	Reduced authorized annual (tpy) emissions from the wet/dry flares and the marine flare in order to maintain a project increase below the level of a major modification.

Respectfully submitted,

Texas Commission on Environmental Quality

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REPRESENTING THE
EXECUTIVE DIRECTOR OF THE
TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

TCEQ Commissioners' Integrated Database - All Activity Actions

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Activity Action List:

Date	Document Type	Action
05/09/2024	NOTICE - PRELIM DECISION	MAILED
05/08/2024	NOTICE - PRELIM DECISION	RECEIVED
03/11/2024	LETTER	SENT TO
07/12/2023	ALTERNATIVE LANGUAGE VERIFICATION FORM	RECEIVED
07/12/2023	AVAILABILITY VERIFICATIO	RECEIVED
07/05/2023	COMMENT PERIOD	END
05/11/2023	AFFIDAVIT - NORI	RECEIVED
05/11/2023	ALTERNATIVE LANGUAGE TEARSHEET	RECEIVED
05/11/2023	NEWSPAPER TEARSHEET	RECEIVED
05/11/2023	ALTERNATIVE LANGUAGE AFFIDAVIT	PGMAPPROVE
05/04/2023	NOTICE OF RECEIPT/INTENT	PUBLISHED
05/01/2023	ALTERNATIVE LANGUAGE NOTICE	PUBLISHED
04/18/2023	NOTICE OF RECEIPT/INTENT	MAILED
04/14/2023	NOTICE OF RECEIPT/INTENT	RECEIVED
04/14/2023	ADMIN REVIEW	COMPLETE
03/30/2023	APPLICATION	RECEIVED

Last Modified 2023-05-17 - Production v3.2.1

TCEQ AIR QUALITY PERMIT NUMBERS 105710, GHGPSDTX123M1, and PSDTX1306M1

APPLICATION BY CORPUS CHRISTI LIQUEFACTION, LLC CORPUS CHRISTI LIQUEFACTION GREGORY, SAN PATRICIO COUNTY	**§ § § §**	**BEFORE THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

EXECUTIVE DIRECTOR'S RESPONSE TO PUBLIC COMMENT

The Executive Director of the Texas Commission on Environmental Quality (the commission or TCEQ) files this Response to Public Comment (Response) on the New Source Review Authorization application and Executive Director's preliminary decision.

As required by Title 30 Texas Administrative Code (TAC) § 55.156, before an application is approved, the Executive Director prepares a response to all timely, relevant and material, or significant comments. The Office of Chief Clerk received timely comments from the following persons: State Senator Judith Zaffarini, State Representative J.M. Lozano, Arman Alex, Isabel Araiza Ortiz, Lisa Averill, Alvin Baker, Rachel Caballero, Sylvia Campos, Eduardo Canales, Teresa A. Carrillo, Elida Castillo, Colin Cox (on behalf of Environmental Integrity Project (EIP), Portland Citizens United, Sierra Club, and Texas Campaign for the Environment), Maricela Cuica, Mike Culbertson (on behalf of Corpus Christi Regional Economic Development Corporation), Rosaura De Los Santos Bailey (on behalf of Port of Corpus Christi), John Delagarza, Annie Dixon, Diana Emerson, Alex Flucke, Jean Fuertez, Adam Gawarecki (on behalf of San Patricio County Economic Development Corporation), Jose Gonzales, Penny Gray, Nichola Groom (on behalf of Reuters News), Don Guion, Billy Gunn, Jennifer R Hilliard, James E. Klein (on behalf of Coastal Bend Sierra Club), Kyle Krauskopf, Maria Krauskopf, Uneeda E Laitinen, Randy Lauhoff, Joanna Lyons, Dewey Magee, Brandon Marks (on behalf of Texas Campaign for the Environment), Justin Martinez, Kathryn Masten, Zach Nickels, Patrick Arnold Nye (on behalf of Ingleside on the Bay Coastal Watch Association), Jessica Palitza, Derek Parker, Blanca Parkinson, Dorothy Pena, Christopher L. Phelan, Jenifer Pichinson, Rolando Rodriguez, Donna Rosson, Gloria Route, Esquel Sanchez, Susan Schwertner, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Chloe Torres, Ana Trevino, Aaron Urie, Wanda Urie, Susan Westbrook, Aimee Wilson (on behalf of EPA Region 6), and Wanda Wilson.

The Office of the Chief Clerk received similar comment letters from the following persons who will be identified in the responses below as Group A: Lisa Averill, Alvin Baker, Eduardo (Eddie) Canales, Teresa Carillo, Annie Dixon, Jean Fuertez, Penny Gray, Don Guion, Billy Gunn, Kyle Krauskopf, Maria Krauskopf, Dewey Magee, Justin Martinez, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Abel Serrata, Susan Westbrook and Wanda Wilson.

This Response addresses all timely public comments received, whether or not withdrawn. If you need more information about this permit application or the permitting process, please call the TCEQ Public Education Program at 1-800-687-4040. General information about the TCEQ can be found at our website at www.tceq.texas.gov.

BACKGROUND

Description of Facility

Corpus Christi Liquefaction, LLC (Applicant) has applied to the TCEQ for a New Source Review Authorization under Texas Clean Air Act (TCAA) § 382.0518. This will authorize the modification of an existing facility that may emit air contaminants.

This permit will authorize the Applicant to update as-built flare emissions and operations, including the correction of stream compositions and vent rates, inclusion of flaring of boil-off gas from LNG tanks when the upstream Sinton Compressor Facility is shut down, and removal of the Totally Enclosed Ground Flare (TEGF) from the permit. The application also requests authorization of a new liquefied natural gas (LNG) marine loading scenario. The as-built portion of the proposed amendment is considered a retrospective correction of representations associated with the original Corpus Christi Liquefaction Stage I/II Project, authorized by a Prevention of Significant Deterioration (PSD) permit issued on September 12, 2014 and modified by a PSD permit issued on July 20, 2018. The application also includes a voluntary update to the Greenhouse Gas (GHG) PSD permit. The plant is located at 622 State Hwy 35 Gregory, San Patricio County, Texas 78359. Contaminants authorized under this permit include carbon monoxide (CO), hazardous air pollutants (HAPs), hydrogen sulfide (H_2S), nitrogen oxides (NO_X), organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less (PM_{10} and $PM_{2.5}$, respectively), and sulfur dioxide (SO_2).

Procedural Background

Before work is begun on the modification of an existing facility that may emit air contaminants, the person planning the modification must obtain a permit amendment from the commission. This permit application is for a permit amendment of Air Quality Permit Number 105710 and GHGPSDTX123M1. The application also seeks to correct prior representations associated with Air Quality Permit Number PSDTX1306M1.

The permit application was received on April 20, 2021 and declared administratively complete on April 23, 2021. The Notice of Receipt and Intent to Obtain an Air Quality Permit (first public notice) for this permit application was published in English on May 13, 2021, in *The News of San Patricio* and in Spanish on May 15, 2021, in the *Tejano Y Grupero News*. The Notice of Application and Preliminary Decision for an Air Quality Permit (second public notice) was published in English on May 26, 2022, in *The News of San Patricio* and in Spanish on June 1, 2022, in the *Tejano Y Grupero News*. A public meeting was held on June 30, 2022 in Portland, Texas. The public comment period ended on July 1, 2022. Because this application was received after September 1, 2015, it is subject to the procedural requirements of and rules implementing Senate Bill 709 (84th Legislature, 2015).

COMMENTS AND RESPONSES

COMMENT 1: Public Participation

State Senator Judith Zaffarini and State Representative J.M. Lozano requested that TCEQ hold a public meeting to provide an opportunity for the community to be heard and allow citizens to voice their concerns about the permit application. In addition, Group A and other commenters requested a public meeting and a contested case hearing.

(State Senator Judith Zaffarini, State Representative J.M. Lozano, Lisa Averill, Alvin Baker, Eduardo (Eddie) Canales, Teresa Carillo, Annie Dixon, Jean Fuertez, Penny Gray, Don Guion, Billy Gunn, Kyle Krauskopf, Maria Krauskopf, Dewey Magee, Justin Martinez, Brandon Marks, Blanca Parkinson, Chris Phelan, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Encarnacion Serna, Abel Serrata, Susan Westbrook, and Wanda Wilson)

RESPONSE 1: TCEQ welcomes public participation in the permitting process. The Executive Director instructs applicants to provide public notice as required by commission rules, in accordance with statutory requirements. Specifically, TCAA § 382.056 and corresponding rules in 30 TAC Chapter 39 require that public notice of applications be published in a newspaper of general circulation in the municipality in which the proposed plant is located or proposed to be located.

As described above, the Notice of Receipt and Intent to Obtain an Air Quality Permit (first public notice) for this permit application was published in English on May 13, 2021, in *The News of San Patricio* and in Spanish on May 15, 2021, in the *Tejano Y Grupero News.* The Notice of Application and Preliminary Decision for an Air Quality Permit (second public notice) was published in English on May 26, 2022, in *The News of San Patricio* and in Spanish on June 1, 2022, in the *Tejano Y Grupero News*.

TCEQ rules also require that a public meeting be held if a member of the legislature who represents the general area in which the facility is located requests a public meeting or if the Executive Director determines that there is a substantial or significant degree of public interest. *See* 30 TAC § 55.154(c)(2). At the request of Senator Zaffarini and Representative Lozano, TCEQ conducted a public meeting on June 30, 2022 in Portland, Texas. The public comment period began on May 15, 2021 and was extended to July 1, 2022, 30 days following the latter publication of the second public notice.

Any member of the public may submit comments on the application. This Response is the written response to all formal comments received during the comment period for the application. A copy of this Response will be mailed to each person who submitted a formal comment or who requested to be on the mailing list for this permit application and provided a mailing address. All timely formal comments received are included in this Response and are considered before a final decision is reached on the permit application. This Response provides a final 30-day period to request a contested case hearing.

In order for an issue to be considered at a contested case hearing, it must have been first raised in a comment or in a request for a contested case hearing during the public comment period by the affected person or group requesting the hearing. The commissioners' decision whether to grant a contested case hearing is based in part on the information the requester submits. When requesting a hearing, it is necessary to

demonstrate that the requester is an "affected person," in order to be granted party status. This means that the requester must be personally affected by the permit decision and that granting the permit would specifically affect the requester in ways not shared by the general public – for example, by impairing the requester's health or safety or by interfering with the use or enjoyment of the requester's property. Affected persons may request a hearing to challenge the Executive Director's decision on an application.

COMMENT 2: Health Effects / Air Quality

Commenters expressed concern about the effect of the emissions from the proposed project on the air quality and health of people, particularly sensitive populations such as the elderly, children, and people with existing medical conditions.

(Group A, Arman Alex, Lisa Averill, Alvin Baker, Rachel Caballero, Sylvia Campos, Eduardo Canales, Teresa A Carrillo, Elida Castillo, Colin Cox, Maricela Cuica, Annie Dixon, Diana Emerson, Alex Flucke, Jean Fuertez, Jose Gonzales, Penny Gray, Don Guion, Billy Gunn, Jennifer R Hilliard, James E Klein, Kyle Krauskopf, Maria Krauskopf, Uneeda E Laitinen, Joanna Lyons, Dewey Magee, Brandon Marks, Justin Martinez, Kathryn Masten, Zach Nickels, Patrick Arnold Nye, Isabel Araiza Ortiz, Jessica Palitza, Blanca Parkinson, Dorothy Pena, Christopher L. Phelan, Jenifer Pichinson, Rolando Rodriguez, Donna Rosson, Gloria Route, Esquel Sanchez, Susan Schwertner, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Chloe Torres, Ana Trevino, Wanda Urie, Susan Westbrook, and Wanda Wilson)

RESPONSE 2: The Executive Director is required to review permit applications to ensure they will be protective of human health and the environment. For this type of air permit application, potential impacts to human health and welfare or the environment are determined by comparing the Applicant's proposed air emissions to appropriate state and federal standards and guidelines. These standards and guidelines include the National Ambient Air Quality Standards (NAAQS), TCEQ Effects Screening Levels (ESLs), and TCEQ rules. As described in detail below, the Executive Director determined that the emissions authorized by this permit are protective of both human health and welfare and the environment.

Since this permit application included a retrospective review of PSD permits issued in 2014 and 2018, the evaluation outlined below was conducted in accordance with the PSD requirements for all applicable pollutants regulated under 40 Code of Federal Regulations (CFR) § 52.21.

NAAQS

The United States (U.S.) Environmental Protection Agency (EPA) created and continues to evaluate the NAAQS, which include both primary and secondary standards, for pollutants considered harmful to public health and the environment.[1] Primary standards protect public health, including sensitive members of the population such as children, the elderly, and those individuals with preexisting health conditions. Secondary NAAQS protect public welfare and the environment, including animals, crops, vegetation, visibility, and buildings, from any known or anticipated adverse effects from air contaminants. The EPA has set NAAQS for criteria pollutants, which include CO, lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), SO_2, PM_{10} and $PM_{2.5}$.

[1] *See* 40 CFR 50.2.

The Applicant conducted a NAAQS analysis for CO, NO_2, SO_2, and O_3. The first step of the NAAQS analysis is to compare the proposed modeled emissions against the established de minimis level. Predicted concentrations (GLC_{max}[2]) below the de minimis level are considered to be so low that they do not require further NAAQS analysis. Table 1, shown below, contains the results of the de minimis analysis for CO, NO_2, and SO_2, and O_3.

Table 1. Modeling Results for PSD De Minimis Analysis

Pollutant	Averaging Time	GLC_{max} (µg/m³)	De Minimis (µg/m³)
SO_2	1-hour (hr)	4	7.8
SO_2	3-hr	3	25
SO_2	24-hr	2	5
SO_2	Annual	0.4	1
NO_2	1-hr	80	7.5
NO_2	Annual	8	1
CO	1-hr	339	2000
CO	8-hr	123	500
Pollutant	**Averaging Time**	**GLC_{max} (ppb)**	**De Minimis (ppb)**
O_3	8-hr	3	1

The GLC_{max} for 1-hr NO_2 is based on the highest five-year average of the maximum predicted concentrations determined for each receptor. The GLC_{max} reported in the air quality analysis (AQA) for 1-hr SO_2 represents the maximum predicted concentration over five years of meteorological data rather than the highest five-year average of the maximum predicted concentrations determined for each receptor. The Air Dispersion Modeling Team (ADMT) determined overall conclusions do not change since the difference between the two GLC_{max} are less than 0.3 microgram per cubic meter (µg/m³). The GLC_{max} for all other pollutants and averaging times, except 8-hr O_3 represent the maximum predicted concentrations over five years of meteorological data.

[2] The GLC_{max} is the maximum ground level concentration predicted by the modeling.

As seen in Table 1, shown above, since the predicted concentrations of NO_2 (1-hr and Annual) were greater than the applicable de minimis level, a full NAAQS analysis was conducted for both the 1-hr and Annual NO_2 and the results are presented in Table 2, shown below.

The Applicant also performed an O_3 analysis as part of the PSD AQA. The Applicant evaluated project emissions of O_3 precursor emissions (NO_X and volatile organic compound (VOC)). For the project NO_X and VOC emissions, the Applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the Applicant used a Tier 1 demonstration tool developed by the EPA referred to as Modeled Emission Rates for Precursors (MERPs). The idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the 3000 tons per year (tpy) and 500 tpy (NO_X and VOC, respectively) Harris County source, the Applicant estimated an 8-hr O_3 concentration of 3 parts per billion (ppb). When the estimates of ozone concentrations from the project emissions are added together, the results are greater than the de minimis level. A full NAAQS analysis was conducted for 8-hr O_3 and the results are presented in Table 2, shown below.

Based on the procedures in the TCEQ Air Quality Modeling Guidance – APDG 6232 for a full NAAQS analysis, the total concentration was determined by adding the GLC_{max} to the appropriate background concentration. The GLC_{max} is comprised of all emissions at the project site under review as well as emissions from nearby sources. The background concentration is defined as the air contaminant concentrations present in the ambient air that are not attributed to the source or site being evaluated. The total concentration was then compared to the NAAQS to ensure that the concentration is below the standard. In this case, the results show that the 1-hr and Annual concentrations of NO_2 and the 8-hr concentration of ozone are below the standards.

Table 2. Total Concentrations for PSD NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total Conc. = [Background + GLC_{max}] ($\mu g/m^3$)	Standard ($\mu g/m^3$)
NO_2	1-hr	142	35	177	188
NO_2	Annual	22	4	26	100
Pollutant	**Averaging Time**	**GLC_{max} (ppb)**	**Background (ppb)**	**Total Conc. = [Background + GLC_{max}] (ppb)**	**Standard (ppb)**
O_3	8-hr	5	61	66	70

The 1-hr NO_2 GLC_{max} is the highest five-year average of the 98th percentile of the Annual distribution of predicted daily maximum 1-hr concentrations determined for each receptor. The Annual NO_2 GLC_{max} is the maximum predicted concentration over five years of meteorological data. Air dispersion modeling resulted in a predicted GLC_{max} for NO_2 on a 1-hr averaging time to be 142 $\mu g/m^3$ and an Annual average to be 22 $\mu g/m^3$. Added to the background concentrations of 35 $\mu g/m^3$ and 4 $\mu g/m^3$ respectively, the resulting total NO_2 concentrations of 177 $\mu g/m^3$ and 26 $\mu g/m^3$ are below the 1-hr NAAQS of 188 $\mu g/m^3$ and the Annual NAAQS of 100 $\mu g/m^3$.

Background concentrations for NO_2 were obtained from the EPA AIRS monitor 480391016 located at 109B Brazoria Hwy 332 West, Lake Jackson, Brazoria County, Texas 77566. The three-year average (2016-2018) of the 98th percentile of the annual distribution of the maximum daily 1-hr concentrations was used for the 1-hr NO_2 value. The Annual concentration from 2020 was used for the Annual NO_2 value. The Applicant did not evaluate the most recent available monitoring data for 1-hr NO_2; however, the Applicant's use of an older dataset yields more conservative results. The use of this monitor is reasonable and acceptable based on the Applicant's review of county-wide population and emissions as well as a quantitative analysis of source emissions located within 10 kilometers (km) of the project site and the monitor location.

Modeling resulted in a predicted GLC_{max} for ozone on an 8-hr averaging time to be 5 ppb. Added to the background concentration of 61 ppb, the resulting total ozone concentration of 66 ppb is below the 8-hr standard of 70 ppb.

As noted above, the Applicant performed an O_3 analysis as part of the PSD AQA. The Applicant evaluated project sources and sources within 10 km of the project site authorized within the last two years with significant increases of O_3 precursor emissions (NO_x and VOC). For the NO_x and VOC emissions, the Applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the Applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs.

The background concentration for O_3 was obtained from the EPA AIRS monitor 483550025 located at 902 Airport Blvd, Corpus Christi, Nueces County, Texas 78405. A three-year average (2018-2020) of the annual fourth highest daily maximum 8-hr concentrations was used in the analysis (61 ppb). The use of the monitor is reasonable based on the Applicant's analysis of the surrounding land use and a quantitative review of emissions sources in the surrounding area of the monitor site relative to the project site. The Applicant also reviewed EPA AIRS monitor 483550026; however, the background concentration from EPA AIRS monitor 483550025 was more conservative.

PSD Significant Monitoring Concentrations

The de minimis analysis results shown above in Table 1, were also used in comparison to the PSD Significant Monitoring Concentrations (SMCs). The EPA has concluded that impacts below the SMCs do not require the collection of pre-construction monitoring data for purposes of an air quality analysis. The de minimis analysis modeling results indicate that 24-hr SO_2, Annual NO_2, and 8-hr CO are below their respective monitoring significance level, as in Table 3, shown below.

Table 3. Modeling Results for PSD SMCs

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	SMC ($\mu g/m^3$)
SO_2	24-hr	2	13
NO_2	Annual	8	14
CO	8-hr	123	575

The GLC_{max} values represent the maximum predicted concentrations over five years of meteorological data. Since the project has a net emissions increase of 100 tpy or more of VOCs or NO_X, the Applicant evaluated ambient O_3 monitoring data to satisfy requirements in 40 CFR 52.21(i)(5)(i)(f).

PSD Increment Analysis

The de minimis analysis modeling results indicate that 1-hr and Annual NO_2 exceed the respective de minimis concentrations. When the de minimis analysis modeling indicate that a NAAQS pollutant exceeds its respective de minimis concentration, a PSD increment analysis is necessary for those NAAQS pollutants for which EPA has established an increment. Because the EPA has not established an increment for 1-hr NO_2 concentrations, only a PSD increment analysis for the predicted Annual NO_2 concentration was performed to demonstrate that the available increment is not exceeded. The PSD increment is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant. The results of the NO_2 increment analysis in Table 4, shown below, demonstrate that emissions of NO_2 from the site will not cause or contribute to an exceedance of the NO_2 PSD increment.

Table 4. Results for PSD Increment Analysis

Pollutant	Averaging Time	GLC_{max} ($\mu g/m^3$)	Increment ($\mu g/m^3$)
NO_2	Annual	22	25

The GLC_{max} for Annual NO_2 represents the maximum predicted concentration over five years of meteorological data.

Additional Impacts Analysis

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

The ADMT evaluated predicted concentrations from the proposed project to determine if emissions could adversely affect a Class I area. The nearest Class I area, Big Bend National Park, is located approximately 565 km from the proposed site.

The predicted concentrations of 1-hr NO_2 and 1-hr SO_2 are greater than de minimis levels at a distance of 50 km from the proposed sources in the direction of the Big Bend National Park Class I area. The Big Bend National Park Class I area is an additional 515 km from the location where the predicted concentrations of 1-hr NO_2 and 1-hr SO_2 are greater than de minimis. Based on the predicted concentration gradients, NO_2 and SO_2 emissions from the proposed project are not expected to adversely affect the Big Bend National Park Class I area.

State Property Line Analysis

A State Property Line Analysis was also conducted for SO_2. The predicted concentration from the proposed emissions was compared to the standard in 30 TAC Chapter 112 to ensure that the concentration is below the standard, as demonstrated in Table 5, shown below. Because the result is below the de minimis threshold (two percent of the standard of 1,021 ug/m^3), there is no expectation of any adverse impacts from emissions of SO_2.

Table 5. Project-Related Modeling Results for State Property Line

Pollutant	Averaging Time	GLC_{max} (µg/m^3)	De Minimis (µg/m^3)
SO_2	1-hr	4	20.42

The GLC_{max} reported in the AQA for 1-hr SO_2 is the highest five-year average of the maximum predicted concentrations determined for each receptor rather than the maximum predicted concentration over five years of meteorological data. The ADMT determined overall conclusions do not change since the difference between the two GLC_{max} is less than 0.3 µg/m^3.

Effects Screening Levels

ESLs are specific guideline concentrations used in TCEQ's evaluation of certain pollutants. These guidelines are derived by TCEQ's Toxicology Division and are based on a pollutant's potential to cause adverse health effects, odor nuisances, and effects on vegetation. Health-based ESLs are set below levels reported to produce adverse health effects, and are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions. TCEQ's Toxicology Division specifically considers the possibility of cumulative and aggregate exposure when developing the ESL values that are used in air permitting, creating an additional margin of safety that accounts for potential cumulative and aggregate impacts. Adverse health or welfare effects are not expected to occur if the air concentration of a pollutant is below its respective ESL. If an air concentration of a pollutant is above the screening level, it is not necessarily indicative that an adverse effect will occur, but rather that further evaluation is warranted.

The Applicant conducted a health effects analysis using the Modeling and Effects Review Applicability (MERA) guidance.[3] The MERA is a tool to evaluate impacts of non-criteria pollutants. It is a step-by-step process, evaluated on a chemical species by chemical species basis, in which the potential health effects are evaluated against the ESL for the chemical species. The initial steps are simple and conservative, and as the

[3] *See* APDG 5874 guidance document.

review progresses through the process, the steps require more detail and result in a more refined (less conservative) analysis. If the contaminant meets the criteria of a step, the review of human health and welfare effects for that chemical species is complete and is said to "fall out" of the MERA process at that step because it is protective of human health and welfare.

CO_2, ethane (C_2H_6), methane (CH_4), nitrogen (N_2), and propane (C_3H_8) are classified as simple asphyxiants. The TCEQ Toxicology Division has evaluated simple asphyxiants and determined they are not expected to cause adverse health effects. These constituents therefore fell out at MERA Step 0. All remaining constituents then proceeded to review under MERA Step 2.

Emission rates of xylene, ethanolamine, and triazinetriethanol were below the de minimis thresholds specified in MERA Step 2 and therefore fell out of the MERA evaluation at that stage.

The following constituents had predicted impacts that were below 10 percent of their respective ESL, and therefore fell out at MERA Step 3: isobutane, n-butane, isopentane, n-pentane, n-hexane, n-heptane, cyclohexane, cyclopentane, n-decane, ethylbenzene, methylcyclopentane, n-nonane, n-octane, toluene, xylene (-o), xylene (-p), lube oil, and Therminol 55.

Ethylene, benzene, and a MDEA Solution (n-methyldiethanolamine) did not meet Steps 1 through 6 of the MERA guidance and required further analysis. In accordance with MERA Step 7, site-wide modeling was performed and demonstrated that the predicted concentrations will not exceed the ESL (Table 6, shown below).

Table 6. Site-wide Modeling Results for Health Effects

Pollutant	CAS#	Averaging Time	GLC_{max} ($\mu g/m^3$)	GLC_{max} Location	ESL ($\mu g/m^3$)
n-methyldiethanolamine	105-59-9	1-hr	52	Eastern Property Line	96
benzene	71-43-2	1-hr	61	Western Property Line	170
ethylene	74-85-1	1-hr	137	Eastern Property Line	1400

In summary, based on the Executive Director's staff review, it is not expected that existing health conditions will worsen, or that there will be adverse health effects on the general public, sensitive subgroups, or the public welfare and the environment as a result of proposed emission rates associated with this project.

If this permit is approved, this project, when operated within the limits of the permit, should be protective of public health. Ongoing studies by epidemiologists to assess health impacts are not required based on the health effects review. A health effects review was conducted for the proposed facilities during the permit review and the permit was found to be protective of human health and the environment as described above.

COMMENT 3: Nuisance Conditions

One commenter expressed concern about nuisance conditions generated by the proposed project.

(Colin Cox)

RESPONSE 3: When a company operates in compliance with the proposed permit there should be no deterioration of air quality such that it impacts visibility or creates a nuisance. While nuisance conditions are not expected if the facility is operated in compliance with the terms of the permit, operators must also comply with 30 TAC § 101.4, which prohibits nuisance conditions.

COMMENT 4: Cumulative Impacts

Commenters expressed concern about the potential effects of cumulative (aggregate) impacts from multiple sites.

(Colin Cox, Jennifer Hilliard, James Klein, Uneeda Laitenen, Kathryn Masten, Patrick Arnold Nye, Encarnacion Serna, and Ana Trevino)

RESPONSE 4: The air quality analysis considered emissions from other sites in the evaluations of O_3 and NO_X. For the ozone analysis, the Applicant evaluated off-property sources of NO_X and VOC within 10 km (6.2 miles) of the project site. For the NO_2 analysis, the Applicant modeled all off-property permitted sources within 50 km (31.1 miles) of the site.

The other criteria pollutants did not require addition of emissions from other sites, because their modeled impacts were below de minimis levels established by the EPA. For the non-criteria pollutants, the health effects modeling showed that off-property concentrations associated with project emissions were below the ESL for each pollutant.

Health-based ESLs are set below levels reported to produce adverse health effects, and are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions.

TCEQ's Toxicology Division specifically considers the possibility of cumulative and aggregate exposure when developing the ESL values that are used in air permitting, creating an additional margin of safety that accounts for potential cumulative and aggregate impacts. Adverse health or welfare effects are not expected to occur if the air concentration of a pollutant is below its respective ESL.

COMMENT 5: Environmental Concerns

Commenters expressed concern about the effect of the proposed project on the environment.

(Sylvia Campos and Zach Nickels)

RESPONSE 5: The secondary NAAQS are those the EPA Administrator determines are necessary to protect public welfare and the environment, including animals, crops, vegetation, visibility, and structures, from any known or anticipated adverse effects associated with the presence of a contaminant in the ambient air. Because the emissions from this facility should not cause an exceedance of the NAAQS, air emissions from this facility are not expected to adversely impact land, livestock, wildlife, crops, or visibility, nor should emissions interfere with the use and enjoyment of surrounding land or water. *See* Response 2 for an evaluation of this project's impacts in relation to the NAAQS. Additionally, 30 TAC § 101.4 prohibits the discharge of contaminants which may be injurious to, or adversely affect, animal life.

COMMENT 6: Nonattainment Redesignation Concerns

Commenters expressed concern that the emissions from this project could cause the county to be designated as nonattainment.

(Blanca Parkinson and Encarnacion Serna)

RESPONSE 6: San Patricio County and neighboring Nueces County are currently designated as being in attainment or unclassifiable for all pollutants. An impacts analysis was conducted for this project and demonstrates that the emissions associated with the as built changes to the permits will not cause or contribute to an exceedance of the NAAQS; therefore, the project is not expected to cause the counties to be designated as nonattainment. *See* Response 2 for an evaluation of this project's impacts in relation to the NAAQS.

COMMENT 7: Air Monitoring

Commenters requested that an air monitor be located in their area. Commenters also suggested that Cheniere (the parent company of Corpus Christi Liquefaction, LLC) conduct fenceline monitoring at the site.

(Jennifer R Hilliard, Uneeda E Laitinen, and Patrick Arnold Nye)

RESPONSE 7: Due to cost and logistical constraints, the placement of air monitors is prioritized to provide data on regional air quality in areas frequented by the public. The existing air monitoring network is the result of a strategic balance of matching federal monitoring requirements with state and local needs. Consistent with federal air monitoring requirements, TCEQ evaluates the placement of air quality monitors within the air monitoring network using trends in population, reported emissions inventory data, and existing air monitoring data for a given area. In addition, TCEQ may prioritize monitor placement in areas with potential regional air quality issues, such as those related to increased oil and gas activity in the Barnett Shale and Eagle Ford Shale areas.

TCEQ annually evaluates the number and location of air monitors within its network to assess compliance with federal monitoring requirements and the adequacy of monitoring coverage for identified monitoring objectives as a part of the Annual Monitoring Network Plan provided to EPA on July 1 of each year. This plan is made available on TCEQ's website for public review and comment for 30 days beginning in mid-May. Requests for additional monitoring or the identification of additional monitoring needs may be made during this public comment period and will be considered along with other monitoring priorities across the state. To receive email announcements related to the ambient air monitoring network, including the

availability of the Annual Monitoring Network Plan for public review and comment, please visit the following link https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new and select "Air Monitoring Network Announcements."

Stationary air monitors are sited to measure air quality that is representative of a broader area or region. Therefore, monitors are not typically placed to measure the impacts from specific industrial facilities.

The Corpus Christi Liquefaction site does not currently have fenceline monitoring capabilities at the site. There is no federal or state requirement for LNG facilities to install and maintain fenceline monitoring at the facilities. Corpus Christi Liquefaction, LLC is required to perform monitoring of operational parameters to demonstrate compliance with the permitted limits to ensure protectiveness of their site. *See* Response 17 (Demonstrate Compliance with the Permit) for more details of monitoring.

COMMENT 8: Climate Change

Commenters expressed concern about the effects of this project in relation to climate change.

(Arman Alex, Sylvia Campos, James E Klein, Kathryn Masten, Patrick Arnold Nye, Jessica Palitza, and Blanca Parkinson)

RESPONSE 8: EPA has stated that unlike the criteria pollutants for which EPA has historically issued PSD permits, there are no NAAQS for GHGs, including no PSD increment. Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in permit reviews. Thus, EPA has concluded it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit. For these reasons, TCEQ has determined that an air quality analysis for GHG emissions would provide no meaningful data and has not required the Applicant to perform one.

Under the jurisdiction established by the Texas Legislature, TCEQ cannot prohibit a private company from using any product or fuel source as long as such usage does not result in a violation of applicable environmental regulations or the NAAQS. *See* Response 2 for an evaluation of this project's impacts in relation to the NAAQS.

COMMENT 9: Jurisdictional Issues

Location / Zoning: Commenters expressed concern regarding the location of the facility as it relates to current zoning ordinances and the proximity to residential and public areas, including schools.

(Blanca Parkinson and Donna Rosson)

Quality of Life / Aesthetics / Property Value: Commenters expressed concern about the effect of the proposed project on their quality of life, the aesthetics of the area, and their property value.

(Colin Cox, Joanna Lyons, Brandon Marks, Patrick Arnold Nye, Isabel Araiza Ortiz, Blanca Parkinson, Christopher L Phelan, Jessica Palitza, Susan Schwertner, Encarnacion Serna, and Chloe Torres)

Light Pollution: Commenters expressed concern about the light pollution from the proposed project.

(Group A, Lisa Averill, Alvin Baker, Eduardo Canales, Teresa A Carrillo, Colin Cox, Annie Dixon, Jean Fuertez, Jose Gonzales, Penny Gray, Don Guion, Billy Gunn, Jennifer R Hilliard, Kyle Krauskopf, Maria Krauskopf, Uneeda E Laitinen, Joanna Lyons, Dewey Magee, Brandon Marks, Justin Martinez, Patrick Arnold Nye, Dorothy Pena, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Susan Westbrook, and Wanda Wilson)

RESPONSE 9:
Location / Zoning: TCEQ does not have jurisdiction to consider plant location choices made by an applicant when determining whether to approve or deny a permit application, unless a statute or rule imposes specific distance limitations that are enforceable by the TCEQ. Zoning and land use are beyond the authority of TCEQ for consideration when reviewing air quality permit applications and such issues should be directed to local officials. The issuance of an air quality authorization does not override any local zoning requirements that may be in effect and does not authorize an applicant to operate outside of local zoning requirements.

Although TCEQ cannot consider zoning or land use, the TCEQ does conduct a health effects review to ensure that there will be no adverse impacts to human health and welfare. As described in Response 2, a protectiveness review was conducted for all contaminants emitted. The maximum concentrations were evaluated at the property line, at the nearest off-property receptor, and at any sensitive receptors located within 3,000 feet of the facilities and found to be protective of human health and the environment.

Quality of Life / Aesthetics / Property Value: TCEQ does not have the authority to consider potential effects from plant location, aesthetics, zoning and land use issues, or effects on property values when determining whether to approve or deny this air permit.

Light Pollution: TCEQ does not have authority under the TCAA to consider light pollution when determining whether to approve or deny a permit application.

COMMENT 10: Best Available Control Technology (BACT)

Commenters questioned the control technology proposed in the application.

Aimee Wilson asked for clarification on how the flare systems are assisted (air, steam, or other). Ms. Wilson noted that the flare emissions are based partially on the assumption of 99 percent DRE for compounds with three carbons or less, and 98 percent DRE for other VOCs/HAPs with four carbons or more. She reports that EPA has discovered that meeting the requirements of 40 CFR § 60.18 does not always account for certain problems that can reduce combustion efficiency, such as those caused by excess steam or air assistance to the flare. Steam- and air-assisted flares for certain waste gas streams are susceptible to performance problems that may reduce VOC destruction efficiency below 98 percent.

Ms. Wilson commented that, with respect to the DRE values represented for Corpus Christi Liquefaction's (CCL) assisted flares, EPA was unable to locate reasoned justification in the record for how the aforementioned permit terms (e.g., requirements for continuous flow monitoring and composition analyzer (or calorimeter) of vent gas,

visible emission monitoring, and pilot flame monitoring) are able to continuously ensure both 98 percent and 99 percent DRE for assisted flares during CCL's potential operating scenarios, including AGRU venting and low flow conditions. She also asked whether TCEQ has evaluated and determined that additional monitoring techniques (i.e., volumetric flow of assist media / properties at flare tip) are unnecessary for CCL's specific waste streams, as-constructed flare design, and operational characteristics to ensure that the stated 99 percent/98 percent DRE will be met in practice, and whether TCEQ has evaluated whether CCL's assisted flares are susceptible to over assistance and if such assistance could result in significant dilution in BTU value and reduction in DRE.

(Colin Cox, Jennifer R Hilliard, Uneeda E Laitinen, Patrick Nye, and Aimee Wilson)

RESPONSE 10: The TCAA and TCEQ rules require an evaluation of air quality permit applications to determine whether adverse effects to public health, general welfare, or physical property are expected to result from a facility's proposed emissions. As part of the evaluation of applications for new or amended permits, the permit reviewer audits all sources of air contaminants at the proposed complex and ensures that the facility will be using BACT applicable for the sources and types of contaminants emitted. BACT is based upon control measures that are designed to minimize the level of emissions from specific sources at a facility. Applying BACT results in requiring technology that best controls air emissions with consideration given to the technical practicability and economic reasonableness of reducing or eliminating emissions (*see* TCAA § 382.0518; *see also* 30 TAC § 116.111). BACT may be numerical limitations, the use of an add-on control technology, design considerations, the implementation of work practices, or operational limitations.

The Applicant has represented in the permit application that BACT will be used for the existing and modified sources. Use of appropriate control measures will minimize the amount of air contaminants emitted into the atmosphere by this facility. The contaminant increases authorized by this permitting action are CO, NO_x, SO_2, VOCs, and GHGs.

Since the original authorization was subject to PSD review and this action contains changes retrospectively associated with that project, the Applicant utilized EPA's Top-Down Method to evaluate and select BACT. EPA developed the top-down process to ensure that a BACT analysis satisfies the applicable legal criteria. TCEQ reviews BACT based on a three-tiered approach. However, both methods of review generally yield the same result and TCEQ allows applicants to choose which method of review to use.
The EPA Top-Down BACT analysis consists of a five-step process as listed below:

Step 1: Identify all control options.

Step 2: Eliminate technically infeasible options.

Step 3: Rank remaining control options.

Step 4: Eliminate control options based on evaluation of collateral impacts.

Step 5: Select BACT.

More information on the EPA Top-Down method for BACT analysis can be found in the TCEQ guidance Air Permit Reviewer Reference Guide – APDG 6110 – Air Pollution Control, Appendix E.

As part of the BACT review process, the TCEQ evaluates information from the EPA's RACT/BACT/LAER Clearinghouse (RBLC), on-going permitting in Texas and other states, and TCEQ's continuing review of emissions control developments.

The following are the primary control measures that meet current BACT, and are incorporated into the permit as controls that will be required on these facilities:

Wet/Dry Flares and Marine Flares

The authorized flares at this site include two elevated, air-assisted flare systems, along with one enclosed ground flare at the marine loading docks. Visible flames are more likely to be observed at the elevated flares, Wet/Dry Gas Flare 1 (EPN WTDYFLR1) and Wet/Dry Gas Flare 2 (EPN WTDYFLR2).

Flares are used to control routine emissions, planned maintenance, startup, and shutdown (MSS), and process upsets. BACT for VOCs is compliance with 40 CFR § 60.18 specifications for maximum tip velocity and minimum net heating value. A waste gas flow monitor and a gas composition analyzer or calorimeter are required. The flares are required to be equipped with a thermocouple or infrared monitor to ensure the presence of a pilot flame. Visible emissions are prohibited except for periods not to exceed a total of five minutes during any two consecutive hours. Flare pilot fuel is limited to no more than 4 parts per million (by) volume (ppmv) H_2S.

One commenter suggested that the flares at this site should comply with the design and operating requirements of 40 CFR Part 63 Subpart CC - National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries. Since the Corpus Christi Liquefaction site is an LNG compression and export facility and not a petroleum refinery, the provisions of 40 CFR Part 63 Subpart CC do not apply to this site. The design and monitoring requirements in 40 CFR Part 63 Subpart CC have not been established as BACT for all flares across various industries. The flare requirements in the draft permit for this site are consistent with design and monitoring for flares at similar facilities, based on a review of the RBLC database and recently issued permits for LNG sites.

Regarding the assumed VOC destruction/removal efficiency (DRE) of the flares, TCEQ's practice is based on longstanding guidance that, when properly operated in accordance with permit requirements and the provisions of 40 CFR § 60.18, 99 percent DRE should be attained for compounds up to three carbons, and 98 percent DRE for compounds with four or more carbons. TCEQ flare guidance and assumed DRE values are based in part on historical EPA research and publications.[4] TCEQ also relies on EPA AP-42 Chapter 13.5 (*Industrial Flares*, revised September 1991), which states:

[4] *Flare Efficiency Study*, EPA-600/2-83-052, U.S. Environmental Protection Agency, Cincinnati, OH, July 1983; and *Evaluation of the Efficiency of Industrial Flares: Test Results*, EPA-600/2-84-095, U.S. Environmental Protection Agency, Research Triangle Park, NC, May 1984.

> *Properly operated flares achieve at least 98 percent combustion efficiency in the flare plume, meaning that hydrocarbon and CO emissions amount to less than 2 percent of hydrocarbons in the gas stream.* [AP-42 Section 13.5.2]
> *Recent EPA tests using propylene as flare gas indicated that efficiencies of 98 percent can be achieved when burning an offgas with at least 11,200 kJ/m^3 (300 Btu/ft^3).* [AP-42 Section 13.5.2]

TCEQ is aware that more recent studies have observed that, in some tested cases, compliance with the flare tip velocity and stream heating value requirements of 40 CFR § 60.18 alone may not always result in 98 percent or 99 percent DRE. However, at this juncture TCEQ has not seen enough conclusive data to establish a different and specific DRE value, or to substantially revise BACT requirements for flares that are not subject to sector-specific regulations such as 40 CFR Part 63 Subpart CC. Further, the proposed flare destruction efficiencies of 98 percent (4 or more carbons) and/or 99 percent (3 or less carbons) are consistent with at least eight RBLC data entries for VOC control since 2017, including sites in Texas and Ohio.

TCEQ is also aware of the possibility that over-assistance can occur at improperly operated steam- or air-assisted flares. As noted in the April 2012 publication from EPA's Office of Air Quality Planning and Standards (OAQPS) entitled *Parameters for Properly Designed and Operated Flares*, excess aeration "can actually result in a flare operating outside its stable flame envelope, decreasing the combustion efficiency," and "can dilute the flare vent gas, making the flare vent gas too lean to burn in the combustion zone."

For this site, the elevated flares, Wet/Dry Gas Flare 1 (EPN WTDYFLR1) and Wet/Dry Gas Flare 2 (EPN WTDYFLR2), are air-assisted. The flares are required to comply with the design and operating requirements of 40 CFR § 60.18. 40 CFR § 60.18(c)(1) prohibits visible emissions, except for a maximum of 5-minutes during any 2 consecutive hours. 40 CFR § 60.18(c)(2) requires that flares be operated with a flame present at all times. 40 CFR § 60.18(c)(3)(ii) requires that the net heating value of gas combusted at air-assisted flares be 300 British thermal unit (Btu) per standard cubic foot or feet (Btu/scf) or greater. 40 CFR § 60.18(c)(5) requires that air-assisted flares shall be designed and operated with an exit velocity less than the velocity (Vmax) as determined in 40 CFR § 60.18(f)(6). Special Condition No. 14 of the permit requires a continuous parametric monitoring to ensure compliance with the provisions of 40 CFR § 60.18.

As indicated in the *EPA Air Pollution Control Cost Manual* (August 2019, Section 3.2, Chapter 1), in air-assisted flares, forced air is used "to provide the combustion air and the mixing required for smokeless operation," and "an adequate fuel and air supply and good mixing are required to achieve complete combustion and minimize smoke formation."

As indicated above, 40 CFR § 60.18(c)(1) prohibits visible emissions, except for a maximum of 5-minutes during any 2 consecutive hours. This prohibition on visible emissions is reiterated in Special Condition No. 14.D of the permit. TCEQ believes that compliance with the visible emissions limit is one indicator of proper use air-assist and good combustion. The additional continuous monitoring requirements for pilot flame, waste gas flow, and composition for minimum heating value (Special Condition 14.B, 14.C, and 14.E) will also help ensure good combustion at the flares. The Marine Flare (EPN MRNFLR) at this site is a non-assisted, enclosed ground flare, so over-assistance is not expected to be an issue of concern.

TCEQ will continue to evaluate new data and new federal requirements for flares and will revise BACT and monitoring requirements for these sources at such time sufficient data and/or applicable federal regulations become available. In the meantime, we believe compliance with the monitoring requirements in draft Special Condition No. 14 (regarding the pilot flame, flow rate, and stream composition or heating value), in conjunction with compliance with the federal provisions of 40 CFR § 60.18, will ensure that the authorized emission limits are not exceeded.

Marine Loading of LNG

During marine vessel conditioning to prepare for loading of LNG, warm or inerted vapors are routed to the marine flare to control VOC. The flare must meet 40 CFR § 60.18 specifications as described above. A flow monitor and gas composition analyzer or calorimeter are required.

For emission prevention of CH_4 during vessel loading of LNG, cryogenic temperature and insulation of loading arms are utilized to minimize boil off gas. Boil off gas that meets quality and temperature specifications must be returned to the process trains. Boil off gas from the LNG tanks is routed to the marine flare during emergency shut-down testing at the upstream Sinton compressor facility.

COMMENT 11: Emission Rates and Calculations

Commenters questioned the accuracy and methodology for determining the emission rates for the proposed project.

(Colin Cox, James E Klein, Encarnacion Serna, and Errol Alvie Summerlin)

RESPONSE 11: Emission calculations for the wet/dry flares and marine flare were based on the TCEQ Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers - RG-109 for the determination of NO_X, CO, and VOC. SO_2 emissions for the flares were based on the represented sulfur content in the gases to be flared. In accordance with RG-109 (page 31), "[p]articulate emissions [from flares] should be negligible and should therefore not be estimated since smoking flares are excluded from permitting as defined in 30 TAC § 111.111." Additionally, Special Condition No. 14.D of the draft permit stipulates that "[t]he flares shall be operated with no visible emissions except during periods not to exceed a total of five minutes during any two consecutive hours." This condition will ensure minimal particulate emissions.

The Annual NO_X emission factor of 0.11 pound per million British thermal units (lb/MMBtu) initially proposed in the permit application was later revised in an October 4, 2021 submittal from the Applicant. The revised calculations used TCEQ approved low- and high-Btu emission factors for separate portions of the waste gas directed to the flares on an annual basis. The revised calculations resulted in consistency with

TCEQ calculation guidance while still providing for some expected variability in the heating value of the waste streams. The permit reviewer conducted an independent review of the emissions estimates from the flares and determined they were reasonable. Regarding the VOC DRE for the flares, *see* Response 12 for the BACT discussion.

The Applicant represented the appropriate methodologies to control and minimize emissions and utilized corresponding control efficiencies when calculating the emission rates. As provided in 30 TAC § 116.116(a), the Applicant is bound by these representations, including the represented performance characteristics of the control equipment. Additionally, the permit holder must operate within the limits of the permit, including the emission limits as listed in the Maximum Allowable Emissions Rate Table (MAERT).

COMMENT 12: Federal Applicability

Commenters expressed concern about the quantity of emissions that will result from the project and if the project requires federal review.

(Patrick Arnold Nye)

RESPONSE 12: A PSD major site is defined as a site emitting over 250 tpy of any one pollutant if it is an unnamed source or 100 tpy of any one pollutant if it is one of twenty-eight sources named in 40 CFR § 52.21(b)(1)(a). Once it is determined a site is major, the project emission increases for each pollutant are compared to the applicable significant emission rate to determine if that pollutant requires PSD review.

This site is a named source and has site-wide emission rates greater than 100 tpy of at least one pollutant, making it a major source under PSD regulations. With respect to PSD applicability, there are two distinct types of projects included in this permitting action: a new project and a retrospective project. The new project and retrospective project were evaluated separately for purposes of federal applicability.

The new project includes a proposal to vent two LNG carriers to the marine flare simultaneously, instead of one carrier at a time. The project emission increases were evaluated and determined to be below the major modification threshold for each pollutant.

The retrospective project involved corrections to emission rates associated with the original PSD permit for this site (Permit PSDTX1306) and the subsequent PSD modification (Permit PSDTX1306M1). The newly quantified emissions for the present project are based on higher vent gas rates to the wet/dry flares than originally quantified, more accurate stream composition data for the marine flare, and flaring of boil-off gas when the upstream Sinton Compressor Facility is undergoing required regulatory emergency shutdown (ESD) testing. During the required ESD testing, all liquefaction trains must be shut down; therefore boil-off gas, which is normally routed back to the process trains, has to be routed to the marine flare.

The retrospective PSD review included adding the newly quantified emission corrections to the project increase values from the prior PSD actions. For retrospective reviews, the BACT analysis must satisfy federal BACT requirements, and must be evaluated based on present-day technology. A retrospective air quality analysis is also performed, including current meteorology and all requirements for PSD dispersion modeling. These retrospective procedures for BACT and the air quality analysis were included in the technical review for this application.

The only retrospective emission correction that exceeded the significant emission rate level (on an allowable-to-allowable basis) in the original application for the current project was for CO. On October 7, 2022 the Applicant submitted revisions to the permit application to reduce the proposed CO emission increase to a level below the significance (major modification) threshold for this project. The permit conditions and emission limits have been revised to require the Applicant to keep rolling 12-month records to demonstrate compliance with the proposed emission rates as specified in draft Special Condition No. 14.N.

Nonattainment New Source Review (NNSR) permitting is applicable for major sites, defined as a site emitting over the threshold for the nonattainment pollutant in that county. Texas nonattainment area designations are specified in 40 CFR § 81.344. Once it is determined a site is major, the project emission increases for each pollutant are compared to the applicable significant emission rate to determine if that pollutant requires netting. If the project's net emissions are greater than the netting threshold, the project is subject to NNSR permitting.

Because the Corpus Christi Liquefaction site is not located in a nonattainment county, the project is not subject to NNSR permitting.

COMMENT 13: Emergency / Evacuation

Commenters expressed concern about the safety of the facility. They ask how neighbors would be notified in the case of an accident and whether there is an evacuation plan.

(Jennifer R Hilliard, James E Klein, Uneeda E Laitinen, Blanca Parkinson, and Susan Schwertner)

RESPONSE 13: TCEQ takes health and environmental concerns seriously. The proposed permit meets all federal and state regulatory requirements and is protective of human health and the environment. If you have been adversely impacted by emissions from the facility, you may file a complaint with the Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll free Environmental Complaints Hotline at 1-888-777-3186.

In the event of an emergency, the Local Emergency Planning Committee and the regulated entity have the primary responsibility of notifying potentially impacted parties regarding the situation. In addition, as set forth in 30 TAC § 101.201(a), regulated entities are required to notify the TCEQ regional office within 24 hours of the discovery of releases into the air and in advance of maintenance activities that could or have resulted in excess emissions.

Proposed projects which involve toxic chemicals that are known or suspected to have potential for life threatening effects upon off-facility property in the event of a disaster and involve manufacturing processes that may contribute to the potential for disastrous events, may require a disaster review for the application. This application did not require a disaster review.

COMMENT 14: Application Completeness

Commenters stated that the application is incomplete.

(Colin Cox, James E Klein, and Encarnacion Serna)

RESPONSE 14: The Air Permits Division and other applicable TCEQ staff have conducted a thorough review of this permit application to ensure it meets the requirements of all applicable state and federal standards. An applicant is bound by its representations in the application and those representations become an enforceable part of the permit, including production rates, authorized emission rates, and equipment. If the Applicant deviates from the representations made in the application, on which the permit was developed, the Applicant may be subject to enforcement action.

See Response 2 for a detailed description of the air quality analysis and its results. Additionally, *see* Response 12 for an explanation of the BACT analysis for this project and destruction/removal efficiency values for the flares.

COMMENT 15: Environmental Justice

Commenters expressed concern regarding the environmental justice implications of this project.

(Patrick Arnold Nye and Chloe Torres)

RESPONSE 15: Air permits evaluated by TCEQ are reviewed without reference to the socioeconomic or racial status of the surrounding community. TCEQ is committed to protecting the health of the people of Texas and the environment regardless of location. A health effects review was conducted for the proposed facilities during the permit review and the permit was found to be protective of human health and the environment.

TCEQ encourages participation in the permitting process. The Office of the Chief Clerk works to help the public and neighborhood groups participate in the regulatory process to ensure that agency programs that may affect human health or the environment operate without discrimination and to make sure that concerns are considered thoroughly and are handled in a way that is fair to all. The Office of the Chief Clerk can be contacted at 512-239-3300 for further information. Additionally, more information may be found on the TCEQ website: Title VI Compliance at TCEQ - Texas Commission on Environmental Quality - www.tceq.texas.gov.

COMMENT 16: Corporate Profits

Commenters questioned the corporate profits made by this project at a cost to the surrounding community.

(Elida Castillo, Jose Gonzales, Joanna Lyons, Brandon Marks, and Ana Trevino)

RESPONSE 16: TCEQ is not authorized to consider a company's financial status, nor its profits, in determining whether a permit should be issued. TCEQ's review of this company's application included analysis of health impacts and application of BACT, and based on this review, the facility should comply with all applicable health effects guidelines and emission control requirements. Continued compliance with health effects guidelines and BACT requirements is expected if the company operates in compliance with the permit terms and conditions. Individuals are encouraged to report any environmental concerns at the facility by contacting the Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. The TCEQ evaluates all complaints received. If the facility is found to be out of compliance with the terms and conditions of the permit, it may be subject to possible enforcement action.

COMMENT 17: Demonstrating Permit Compliance

Commenters asked how the Applicant will demonstrate compliance with the terms of their permit on a continuous basis.

Aimee Wilson stated that if TCEQ intends to limit the amount of vent gas sent to each flare based on application representations, such limiting representations should be included on the face of the permit or specifically referenced. She also asked whether TCEQ has determined that additional monitoring techniques (i.e., volumetric flow of assist media, properties at the flare tip) are unnecessary for the site's waste streams, flare design, and operational characteristics to ensure the DRE is met.

(Colin Cox, Jennifer R Hilliard, Patrick Arnold Nye, Derek Parker, Encarnacion Serna, and Aimee Wilson)

RESPONSE 17: Special conditions have been included as part of the proposed permit to ensure the Applicant can demonstrate compliance with the emission limitations set forth in the permit. Emissions units associated with this project will be monitored by:

a) continuous monitoring of H_2S (1-hr average) in fuel used for thermal oxidizers, flare pilots, and turbines. Fuel is limited to 4 ppmv H_2S.

b) continuous monitoring of the flare pilot flames by a thermocouple or an infrared monitor to ensure the control device is functioning.

c) continuous monitoring of the vent stream flow to the flares (hourly average).

d) continuous monitoring of the flare vent stream with a composition monitor or calorimeter is to ensure minimum heating value (hourly average).

e) monitoring of visible emissions as required by 30 TAC § 111.111(a)(4).

f) monthly audio, visual, and olfactory (AVO) inspections for the flare capture systems.

g) A bypass for the control equipment (flares) is not authorized.

See Response 10 for regarding BACT and assumed DRE for the flares.

The permit also requires monitoring for units outside the scope of this project as follows:

- fuel tariff records to show compliance with the 4 ppmv H_2S limit in the fuel used for the turbines.
- records of visual inspections and seal gap measurements at the condensate storage tank in accordance with 40 CFR § 60.113b.
- records of monthly and rolling twelve-month throughput at the condensate storage tank.
- routine monitoring of the carbon canister at the spent scavenger tank in accordance with EPA Method 21 (40 CFR Part 60, Appendix A). The canister is required to be replaced before breakthrough occurs.
- annual leak checks of condensate tank trucks in accordance with 40 CFR § 60.502(e).
- continuous monitoring of the pilot flame and combustion chamber temperature at the condensate truck loading vapor combustion unit.
- continuous monitoring of the combustion chamber temperatures at the thermal oxidizers.
- quarterly monitoring of visible emissions for non-flare sources (flare monitoring of visible emissions is required by 30 TAC § 111.111(a)(4)).
- stack sampling for NO_x, O_2, CO, VOC, and SO_2 from the turbines.
- stack sampling for VOC and destruction efficiency at the thermal oxidizers.
- continuous monitoring of the fuel consumption at the turbines.
- leak detection and repair (LDAR) monitoring of fugitive components in accordance with the TCEQ 28VHP program.
- monitoring and record keeping of maintenance, startup, and shutdown events in accordance with Special Condition Nos. 24 through 26.

The permit holder is also required to maintain records to demonstrate compliance, including the monitoring listed above. Records must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. For stream flows, operational parameters, or other data not specifically listed in the special conditions of the permit, any such parameters or data relied upon for calculating a unit's potential to emit are considered conditions upon which the permit is issued (*see* General Condition No. 1 of the TCEQ NSR permit). This information may therefore be relied upon for purposes of compliance and enforcement.

The Regional Office may perform investigations of the plant as required. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all calculations and required recordkeeping.

The TCEQ evaluates all complaints received. If a facility is found to be out of compliance with the terms and conditions of its permit, it will be subject to investigation and possible enforcement action. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any

permit or other environmental regulation by contacting the TCEQ Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186.

Citizen-collected evidence may be used in such an action. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals can provide information on possible violations of environmental law. The information, if gathered according to agency procedures and guidelines, can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Report an Environmental Problem? Do You Have Information or Evidence?" This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at http://www.tceq.texas.gov (under Publications, search for document number 278).

COMMENT 18: Compliance History

Commenters questioned the compliance history of the Applicant and site.

(Group A, Sylvia Campos, Jennifer R Hilliard, Uneeda E Laitinen, Dewey Magee, Kathryn Masten, Isabel Araiza Ortiz, Encarnacion Serna, and Ana Trevino)

RESPONSE 18: During the technical review of the permit application, a compliance history review of both the company and the site is conducted based on the criteria in 30 TAC Chapter 60. These rules may be found at the following website: https://www.tceq.texas.gov/rules/index.html.

The compliance history is reviewed for the five-year period prior to the date the permit application was received and includes multimedia compliance-related components about the site under review. These components include: enforcement orders, consent decrees, court judgments, criminal convictions, chronic excessive emissions events, investigations, notices of violations, audits and violations disclosed under the Audit Act, environmental management systems, voluntary on-site compliance assessments, voluntary pollution reduction programs, and early compliance. However, the TCEQ does not have jurisdiction to consider violations outside of the State of Texas.

A company and site may have one of the following classifications and ratings:

- High: rating below 0.10 – complies with environmental regulations extremely well;
- Satisfactory: rating 0.10 – 55.00 – generally complies with environmental regulations;
- Unsatisfactory: rating greater than 55.00 – fails to comply with a significant portion of the relevant environmental regulations.

This site has a rating of 2.24 and a classification of Satisfactory. The company rating has a rating of 2.24 and a classification of Satisfactory. The company rating reflects the average of the ratings for all sites the company owns in Texas.

COMMENT 19: Complaints

Commenters asked how to make complaints and how complaints are handled.

(Jennifer R Hilliard, Patrick Arnold Nye, Encarnacion Serna, and Errol Alvie Summerlin)

RESPONSE 19: The TCEQ evaluates all complaints received. If a facility is found to be out of compliance with the terms and conditions of its permit, it will be subject to investigation and possible enforcement action. Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by contacting the TCEQ Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186.

Citizen-collected evidence may be used in such an action. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals are providing information on possible violations of environmental law and the information can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Make an Environmental Complaint? Do You Have Information or Evidence?" This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at http://www.tceq.texas.gov (under Publications, search for Publication Number 278).

COMMENT 20: Inspections

Commenters asked how often the facility will be inspected.

(Uneeda E Laitinen, Patrick Arnold Nye, and Encarnacion Serna)

RESPONSE 20: The Regional Office performs investigations of the plant on a regular schedule as required. This site is a major source under Title V of the Clean Air Act. As such, the site is required to be physically inspected at a minimum frequency of once every three years. The deviation reports required by the Title V permit are electronically reviewed by the Regional Office at least once per year. In addition, the Regional Office conducts investigations on an as-needed basis in response to citizen complaints. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all calculations and required recordkeeping. Additional investigations will occur in response to complaints reported by contacting the TCEQ Corpus Christi Regional Office at 361-881-6900 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186.

COMMENT 21: Violations/Enforcement

Commenters asked about the consequences of violating the terms of the permit and about the number reported violations.

(Lisa Averill, Alvin Baker, Sylvia Campos, Eduardo Canales, Teresa A Carrillo, John Delagarza, Annie Dixon, Diana Emerson, Jean Fuertez, Penny Gray, Don Guion, Billy Gunn, Jennifer R Hilliard, James E Klein, Kyle Krauskopf, Maria Krauskopf, Uneeda E

Laitinen, Joanna Lyons, Dewey Magee, Brandon Marks, Justin Martinez, Kathryn Masten, Patrick Arnold Nye, Isabel Araiza Ortiz, Blanca Parkinson, Dorothy Pena, Jenifer Pichinson, Gloria Route, Esquel Sanchez, Encarnacion Serna, Abel Serrata, Errol Alvie Summerlin, Chloe Torres, Wanda Urie, Susan Westbrook, and Wanda Wilson)

RESPONSE 21: There are a number of mechanisms by which the TCEQ monitors compliance with permit conditions and state and federal regulations. To the extent that personnel, time, and resources are available, the TCEQ investigates permit operations to ensure compliance with applicable rules and regulations. Although specific to each site, investigations generally explore the entire operation of the plant. The investigation schedule may be increased if violations are found, repeated, or if a regulated entity is classified as an unsatisfactory performer.

The permit holder is also required to maintain records to demonstrate compliance. In addition to records required by the NSR permit, all Title V permit holders must submit deviation reports for any six-month period where deviations occur, and must submit permit compliance certifications at least annually, whether a deviation has occurred or not. The deviation report must include all deviations that occur during that time period. A deviation is defined in 30 TAC § 122.10(5) as any indication of noncompliance with a term or condition of the permit as found using compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information.

Records must be made available upon request to representatives of the TCEQ, EPA, or any local air pollution control program having jurisdiction. The Regional Office may perform investigations of the plant as required. The investigation may include an inspection of the site including all equipment, control devices, monitors, and a review of all calculations and required recordkeeping.

Staff from the TCEQ regional office evaluate all complaints received and regional investigations and are not limited by media. Complaints regarding regulated entities may be addressed to the TCEQ Corpus Christi Regional Office at (361) 825-3100 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. Citizen-collected evidence may be used. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual. The TCEQ regional offices prioritize their responses to complaints based on the potential for adverse health effects associated with the alleged violation. For example, a "priority one" case means serious health concerns exist, and the case will be investigated immediately. A "priority four" case, on the other hand, means no immediate health concerns exist; therefore, it will be investigated within 30 days.

Violations are usually addressed through a notice of violation letter that allows the operator a specified period of time within which to correct the problem. The violation is considered resolved upon timely corrective action. A formal enforcement referral will be made if the cited problem is not timely corrected, if the violation is repeated, or if a violation is causing substantial impact to the environment or neighbors. In most cases, formal enforcement results in an agreed enforcement order including penalties and technical requirements for corrective action. Penalties are based upon the severity and duration of the violation(s). Violations are maintained on file and are included in the calculation of a facility and a person's compliance history. Compliance history ratings are considered during permit application reviews.

Generally, administrative and civil penalties in the amount of $0-10,000 and $50 - 25,000 respectively, maybe assessed for violations of the TCEQ rules. *See* TEX. WATER CODE Chapter 7. However, the specific penalties associated with each violation will be determined on a case-by-case basis according to the TCEQ Penalty Policy.

First, the commission will evaluate the penalty based on the size of the respondent's (i.e., alleged violator) site. For example, any stationary facility that has the potential to emit more than 100 tpy of any air pollutant is classified as a "major source." Second, the "harm" is categorized as major, moderate, or minor, according to the "Environmental/Property and Human Health Matrix." The harm classification is based on whether an "actual" or "potential" release of contaminants occurred. Third, additional factors including compliance history, repeat violations, culpability, and whether there was a good faith effort to comply with regulations, will be assessed and will influence the overall amount of the penalty. In addition, any economic benefit or monetary gain derived from a failure to comply with TCEQ rules or regulations will be considered and may increase the penalty. The final penalty amount will be checked against the minimum and maximum penalty amounts allowed by statute, per day of violation, in order to obtain the final assessed penalty.

Additional information about the TCEQ penalty policy may be obtained from the TCEQ website, Penalty Policy of the Texas Commission on Environmental Quality, available at http://www.tceq.texas.gov/publications/rg/rg-253.html.

COMMENT 22: TCEQ's Responsibility to the Community

Commenters asked that the TCEQ consider residents and their wishes and choose not to approve the permit registration for the proposed plant.

(Jessica Palitza, Blanca Parkinson, Dorothy Pena, Rolando Rodriguez, Chloe Torres, Ana Trevino, Aaron Urie, and Wanda Urie)

RESPONSE 22: The Executive Director's staff has reviewed the permit application in accordance with the applicable state and federal law, policy and procedures, and the agency's mission to protect the state's human and natural resources consistent with sustainable economic development. The TCEQ cannot deny authorization of a facility if a permit application contains a demonstration that all applicable statutes, rules, and regulations will be met.

COMMENT 23: Type of Modification

One commenter stated that the proposed action is based on a permit-by-rule (PBR) process that is comprised of numerous incremental emission increases, and that the proposed changes should be treated as a major modification.

(Patrick Arnold Nye)

RESPONSE 23: The corrections and new changes included in the permit application were proposed to be processed via NSR case-by-case review to amend the NSR permit in accordance with 30 TAC Chapter 116, Subchapter B (New Source Review Permits). The corrections and changes were not proposed to be authorized via 30 TAC Chapter 106 (Permits by Rule).

The permit application contained projects that were both new and retrospective in nature. A retrospective (or "as-built") project seeks to correct representations that were associated with a prior permit application. The retrospective components of this application were evaluated on the basis of how the corrections would have affected the initial permit to construct, which included a PSD permit issued September 12, 2014, along with the subsequent modification of the PSD permit issued July 20, 2018. The retrospective review included updates to the previous PSD BACT analysis and PSD requirements in the air quality analysis.

While the review for the retrospective project was technically equivalent to a review that would have been conducted for a new PSD application, the retrospective correction for CO, as initially proposed for this project, was above the major modification threshold. Accordingly, the project should have been recognized as newly triggering PSD, instead of merely triggering from a retrospective viewpoint. The Notice of Application and Preliminary Decision (NAPD), based on as-proposed emissions, should have indicated that CO was being emitted in a significant amount, and a Preliminary Determination Summary (PDS) should have been issued, along with a new PSD modification number. This was an oversight by the staff reviewer assigned to the project.

As a remedy to address the CO emission correction and the associated permit implications, the Applicant has proposed to reduce project emissions of CO and accept a federally enforceable permit limit that will require the project emissions to remain under the major modification threshold. Under this scenario a new PSD project will not be triggered for this permit application. The reduced project emissions will be monitored according to the requirements of Special Condition No. 14.N, and the monitoring will be used to show compliance with the emission limits in the MAERT for the wet/dry flares and marine flare.

COMMENT 24: Multiple Amendments and As-Built Projects

Commenters expressed concern about the number of as-built applications that have been submitted for this project, and TCEQ's issuance of permits associated with those as-built applications.

(Uneeda Laitinen, Patrick Nye, Jessica Palitza, Blanca Parkinson, Emcarnacion Serna, Errol Summerlin, and Aimee Wilson)

RESPONSE 24: 30 TAC § 116.116(b)(1) provides that a permit holder shall not vary from any representation or permit condition without obtaining a permit amendment if the change will cause a change in the method of control of emissions, a change in the character of emissions, or an increase in the emission rate of any contaminant. There are occasions when, after receiving a permit to construct or modify a source, the permit holder discovers that actual emission rates have exceeded current permit limits, even if no physical modification or change in method of operation has taken place. These emission exceedances may be discovered by monitoring, sampling, stack testing, or other means.

Because permit limits have been exceeded, the permit holder may be subject to enforcement action, which is under the purview of the TCEQ Office of Compliance and Enforcement. In addition, a permit amendment is necessary to evaluate the new emissions for protection of the NAAQS, public health, and the environment, and to re-examine requirements for control technology and federal permitting applicability (such as PSD or Nonattainment NSR).

When these newly identified emissions are represented in a permit application, the project is typically referred to as an "as-built" amendment. Since the initial permit to construct the Corpus Christi Liquefaction facility was issued on September 12, 2014, the following permit actions were approved for this site by the TCEQ:

> February 20, 2015: A permit revision to change the planned turbine design from water-injected to dry low emission turbines. The change resulted in allowable emission decreases for PM, PM_{10}, $PM_{2.5}$, NO_X and CO.
>
> March 21, 2017: A permit amendment to change the planned marine flare design from an elevated flare to an enclosed ground flare. The change resulted in allowable annual emission increases in VOC, NO_X, CO, and SO_2.
>
> July 20, 2018: An as-built permit amendment to correct gas compositions, vent gas flow to the flares, heat input capacity to the thermal oxidizers, fuel input for the turbines, throughput rates for tanks and loading, wastewater activities and storage, fugitive component counts, and MSS activities. Allowable annual emissions increased for all pollutants except H_2S. This amendment triggered PSD.
>
> November 4, 2020: An as-built permit amendment to correct flare emission calculations to account for purge gas, inconsistent feed gas composition, higher H_2S content from the Acid Gas Recovery Unit (AGRU), and additional MSS volume (including boil-off gas).

Annual emission caps for the flares were also established. In addition, the amendment corrected condensate composition, fugitive component counts, and vehicle fuel tank throughput. A ground flare previously authorized by standard permit was consolidated into the permit (this ground flare project was subsequently cancelled). Allowable annual emissions increased for VOC, NO_X, CO, SO_2, H_2S, and GHGs.
The 2015 and 2017 actions listed above may be considered "as-designed" changes, since the site had not begun operation. The 2018 and 2020 actions may be considered "as-built" changes, based upon data and emissions from actual operation. As-designed

and as-built projects are not uncommon as new and more accurate information becomes available to the owner/operator, and the TCEQ encourages permit holders to submit these updates as soon as possible for appropriate review.

TCEQ rules (*see* 30 TAC Chapter 116) do not establish a specific limit on the number of as-designed or as-built amendments that an applicant may submit. However, when these types of corrections are requested in a permit application, TCEQ evaluates the changes to determine whether they are truly corrections of a prior project, whether any new modifications are included, whether any projects should be aggregated, and whether any regulatory circumvention has occurred.

The review also includes any applicable corrections to the BACT/LAER analysis, the air quality analysis, and the federal applicability analysis. Both the as-built and new components of the current project were reviewed under this criteria and in accordance with all applicable state and federal rules.

The draft permit for the current project contains requirements to continuously monitor the pilot flames, vent stream flow rate, and vent stream composition at the flares to ensure compliance with 40 CFR § 60.18. Regular emission calculations are also required to ensure that allowable emission rates are not exceeded. Existing permit conditions for facilities untouched by the proposed amendment also include extensive monitoring requirements for other emission units.

30 TAC § 116.116 specifies that, in addition to permit conditions themselves, all representations regarding construction plans and operational procedures in a permit application are conditions upon which a permit is issued.

The Corpus Christi Liquefaction site is subject to inspection at any time by TCEQ personnel, the EPA, or any other applicable regulatory authority. Any variation from representations, permit conditions, or emission limits would subject the permit holder to enforcement action. The TCEQ is confident that the permit representations, permit conditions, and all required monitoring data would provide sufficient information to determine whether the facility is operating in accordance with represented design and within permitted limits.

COMMENT 25: Other Media/Authorizations

Commenters expressed concern regarding contamination of water and soil related to this site.

(Arman Alex, Elida Castillo, Dorothy Pena, and Encarnacion Serna)

RESPONSE 25: Although the TCEQ is responsible for the environmental protection of air and water as well as the safe management of waste, this proposed permit will regulate the control and abatement of air emissions only. Therefore, issues regarding water quality or discharge and the handling of waste are not within the scope of this review. However, the Applicant may be required to apply for separate authorizations for water quality, water usage, or the handling of waste.

COMMENT 26: Support for Project

Some commenters expressed support for the proposed project.

(Rosaura De Los Santos Bailey, Mike Culbertson, and Adam Gawarecki)

RESPONSE 26: TCEQ appreciates comments and interest from the public in environmental matters before the agency and acknowledges the comments in opposition and support of the permit amendment.

CHANGES MADE IN RESPONSE TO COMMENT

The Executive Director has changed certain provisions of the draft permit to reduce the allowable emission increase associated with this project. These changes and the reasons for these changes are more fully described below.

Special Conditions

Previous	Current	Change
-	14.N	Added a monthly emission calculation requirement for the wet/dry flares and the marine flare, based on the monitoring requirements of Special Condition No. 14.E, in order to demonstrate compliance with authorized emission limits on a rolling 12-month basis.

MAERT

EPNs	Change
WTDFLR1, WTDFLR2, MRNFLR	Reduced authorized annual (tpy) emissions from the wet/dry flares and the marine flare in order to maintain a project increase below the level of a major modification.

Respectfully submitted,

Texas Commission on Environmental Quality

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Erin E. Chancellor, Director
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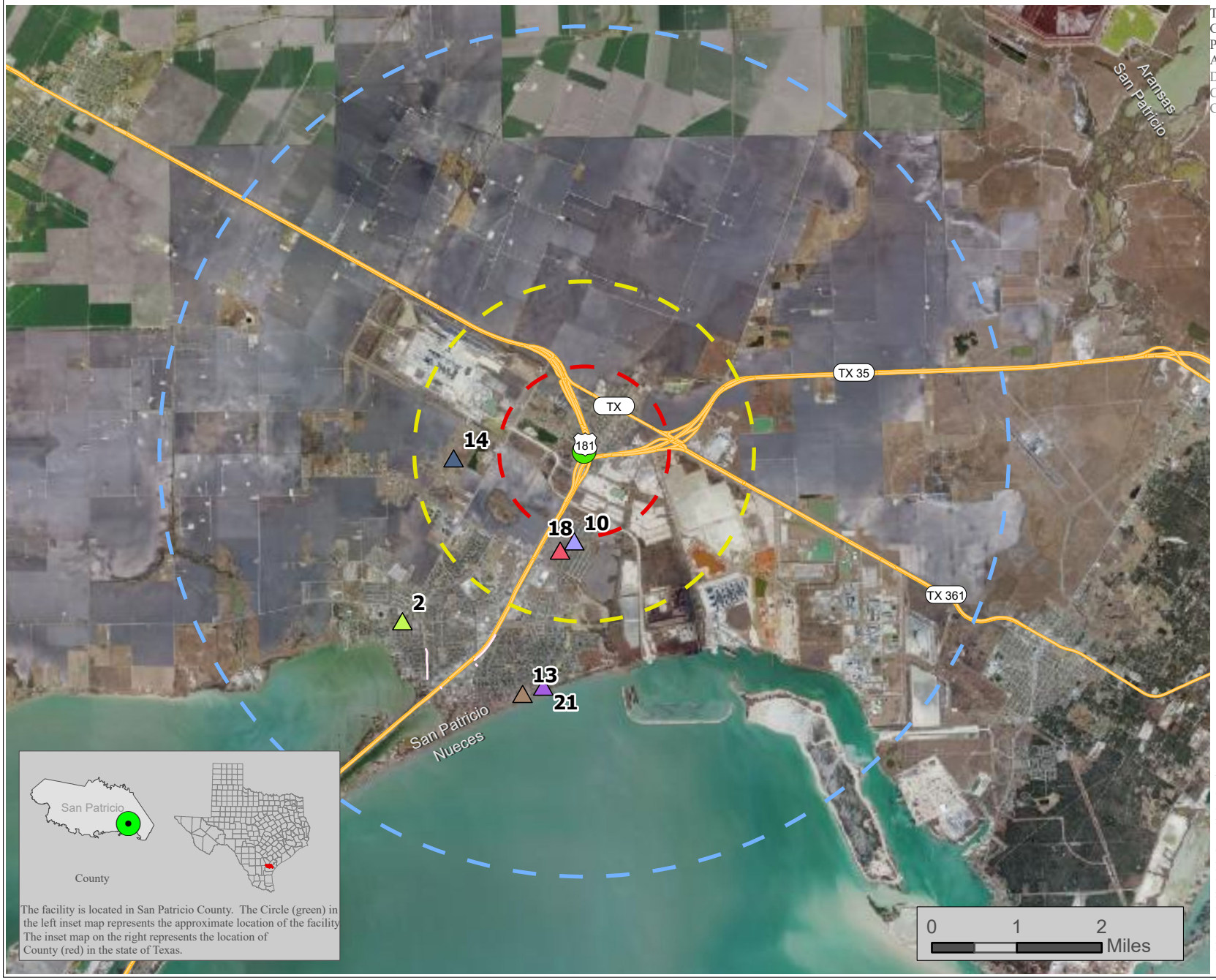
REPRESENTING THE
EXECUTIVE DIRECTOR OF THE
TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Corpus Christi Liquefaction, LLC - Permit No. 105710

Map Requested by TCEQ Office of Legal Services
for Commissioners' Agenda

Protecting Texas by Reducing and Preventing Pollution

Texas Commission on Environmental Quality
GIS Team (Mail Code 197)
P.O. Box 13087
Austin, Texas 78711-3087
Date: 9/22/2023
CRF 0094330
Cartographer: MAttoh



The facility is located in San Patricio County. The Circle (green) in the left inset map represents the approximate location of the facility. The inset map on the right represents the location of County (red) in the state of Texas.

Requestors

- 2) Alvin Baker
- 10) Wendy Hughes
- 13) Uneeda Laitinen
- 14) Dewey Magee
- 18) Mindi and James Rosson
- 21) Encarnacion Serna
- Corpus Christi Liquefaction Facility
- 1 Mile from Corpus Christi Liquefaction Facility
- 2 Miles from Corpus Christi Liquefaction Facility
- 5 Miles from Corpus Christi Liquefaction Facility

Distance measurements provided in Appendix A

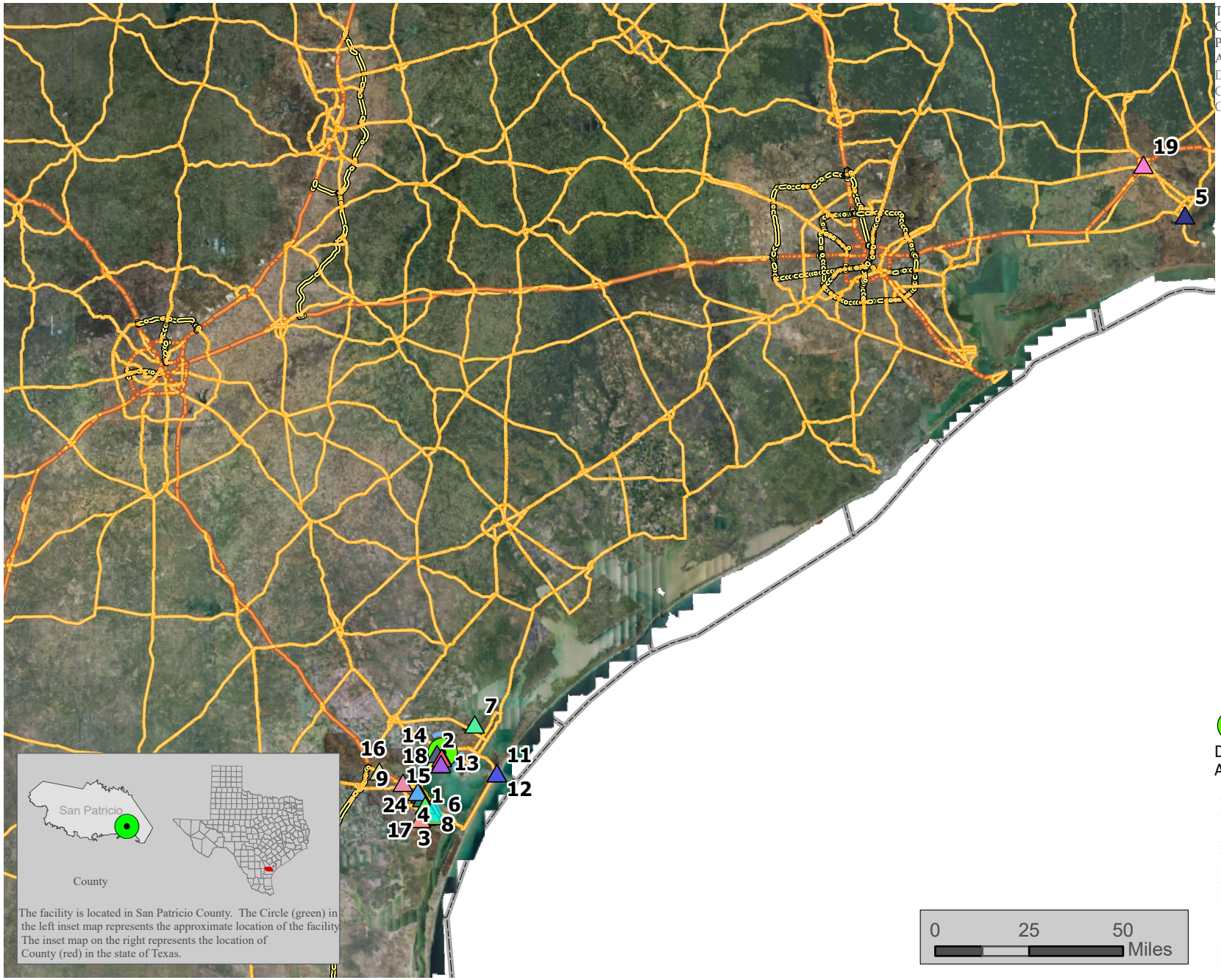
Source: The location of the facility was provided by the TCEQ Office of Legal Services (OLS). OLS obtained the site location information from the applicant and the requestor information from the requestor.

This map was generated by the Information Resources Division of the Texas Commission on Environmental Quality. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the Information Resource Division at (512) 239-0800.

Corpus Christi Liquefaction, LLC - Permit No. 105710

Map Requested by TCEQ Office of Legal Services
for Commissioners' Agenda

Protecting Texas by Reducing and Preventing Pollution



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Texas Commission on Environmental Quality
GIS Team (Mail Code 197)
P.O. Box 13087
Austin, Texas 78711-3087

Date: 9/22/2023
CRF 0094330
Cartographer: MAttoh

N

1) Lisa Averill
2) Alvin Baker
3) Eduardo Canales
4) Teresa A Carrillo
5) Annie Dixon
6) Jean Fuertez
7) Don Guion
8) Penny Gray
9) Billy Gunn
10) Wendy Hughes
11) Kyle Krauskopf
12) Maria Krauskopf
13) Uneeda Laitinen
14) Dewey Magee
15) Justin Martinez
16) Blanca Parkinson
17) Jenifer Pichinson
18) Mindi and James Rosson
19) Gloria Route
20) Esquel Sanchez
21) Encarnacion Serna
22) Abel Serrata
23) Susan Westbrook
24) Wanda Wilson

Corpus Christi Liquefaction Facility

Distance measurements provided in Appendix A

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