FINAL DRAFT/PROPOSED CAAPP PERMIT
Aux Sable Liquid Products
I.D. No.: 063800AAM
Application No.: 01120007
July 3, 2002

217/782-2113

TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT[1]

PERMITTEE

Aux Sable Liquid Products L.P.
Attn: Andy Truhan
6155 East US Route 6
Morris, Illinois 60450

Application No.: 01120007 I.D. No.: 063800AAM
Applicant's Designation: OIL/GAS EXTRAC Date Received: December 4, 2001
Operation of: Natural Gas Processing Plant
Date Issued: !TO BE DETERMINED! Expiration Date[2]: !DATE!
Source Location: 6155 East US Route 6, Morris, Grundy County, Aux Sable Twp.
Responsible Official: Andy Truhan, Source Environmental Contact Person

This permit is hereby granted to the above-designated Permittee to OPERATE a Natural Gas Processing Plant, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

If you have any questions concerning this permit, please contact Sunil Suthar at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:SIS:psj

cc: Illinois EPA, FOS, Region 1

[1] This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the CAA and regulations promulgated thereunder, including 40 CFR 52.21 – federal PSD and 35 IAC Part 203 – Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within this permit.

[2] Except as provided in Condition 8.7 of this permit.

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10.0 ATTACHMENTS

1.0 SOURCE IDENTIFICATION

1.1 Source

Aux Sable Liquid Products L.P.
6155 East US Route 6
Morris, Illinois 60450
815/941 - 5808

I.D. No.: 063800AAM
Standard Industrial Classification: 1321, Oil and Gas Extraction – Natural Gas Liquids

1.2 Owner/Parent Company

Aux Sable Liquid Products L.P.
2300 Cabot Drive, Suite 355
Lisle, Illinois 60532

1.3 Operator

Aux Sable Liquid Products L.P.
6155 East US Route 6
Morris, Illinois 60450

Andy Truhan, Source Environmental Contact
815/941-5808

1.4 General Source Description

Aux Sable Liquid Products L.P. is located at 6155 East US Route 6, in Morris. The source is a natural gas liquids processing plant. The facility produces quantities of propane, butane, iso-butane, and a pentanes plus liquid (composed of butane, iso-butane, pentane, iso-pentane, n-hexane, and heptane) in excess of the United States Environmental Protection Agency's Risk Management Plan (RMP) threshold planning quantities for flammable substances. The facility is considered a RMP program 3 facility. The natural gas liquids plant removes commercial grade ethane, propane, iso-butane, normal butane and a pentane plus product (condensate) from the natural gas stream being transported by Alliance Pipeline L.P. Processes include: extraction and demanthanization; ethane recovery; depropanization; debutanization and butane splitting. Other associated equipment includes compression equipment, process heaters, product storage for propane, butane, iso-butane, and a pentanes plus liquid. The prevention program based on this regulation includes the following: Employee Participation; Process Safety Information;

Process Hazardous Analysis; Operating Procedures; Training; Contractor Safety; Contractor and Visitor Orientation; Pre-Job Startup Review; Mechanical Integrity; Code of Safe Practices; Management of Change; Incident Investigation; Emergency Planning and Response; and Compliance Audits. Mechanical Integrity includes ultrasonic testing of vessels and piping, material specifications, hydrotesting, and other applicable testing/treating procedures. Aux Sable liquid Products LP maintains an emergency response plan in compliance with local emergency response agencies. The worst case scenario is a release from a 30,000 barrel propane storage pressure sphere. The quantity of propane that could be released and contribute to the worst case scenario is estimated at 5,118,530 pounds (1,260,000 gallons), resulting in a vapor cloud explosion. The 1-psia overpressure could extend out to a distance of 1.39 miles from the pressure sphere. The distance was calculated using equation C-1 from the USEPA's RMP Offsite Consequence Analysis Guidance based on liquefied propane stored under pressure. The alternative release scenario is a vapor cloud explosion, which results in a 1-psia overpressure at a distance of 0.10 miles. This does not result in ay property impacts. The distance was calculated using the TNT equivalency method and assuming 3 % of the flammable vapor is assumed to participate in the explosion. The distance to a 1-psia overpressure was also calculated using the Multi Energy method of explosion overpressure calculation. The Multi Energy Method is considered more accurate for hydrocarbon vapor cloud explosions. Using this method, the distance to a 1-psia overpressure was 0.04 miles (no off property impacts). The alternative release scenario assumes that the plant by-pass stack vents for 10 seconds. The Aux Sable Liquid Products L.P. facility is a new state-of-the-art facility with the highest level of safety designed into the plant. As a new plant, it has had zero incidents within the past five years.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
BAT	Best Available Technology
Btu	British thermal unit
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
cf	Cubic feet
CFR	Code of Federal Regulations
CO	Carbon Monoxide
°C	Degrees Celsius
ERMS	Emissions Reduction Market System
ft^3	Cubic feet
°F	Degrees Fahrenheit
gr	gram
HAP	Hazardous Air Pollutant
hr	hour
H_2S	Dihydrogen sulfide
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
kg	kilogram
kPa	Kilo Pascal
kW	kilowatts
LAER	Lowest Achievable Emission Rate
lb	pound
LT/D	long tons per day
m	meter
m^3	Cubic meter
MACT	Maximum Achievable Control Technology
Mft^3	Million cubic feet
MJ	Mega Joules
mg	milligram
mm	millimeter
mmBtu	Million British thermal units
mo	month

MW	Mega watt
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
psia	Pounds per square inch absolute
psig	Pounds per square inch gauge
RMP	Risk Management Plan
scf	Standard cubic feet
sec	second
scm	Standard cubic meter
SO_2	Sulfur Dioxide
T	ton
T1	Title I – identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New – identifies Title I conditions that are being established in this permit
T1R	Title I Revised – identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
TOC	Total organic compound
USEPA	United States Environmental Protection Agency
VOL	Volatile organic liquid
VOM	Volatile Organic Material
Wt	weight
yr	year

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

None

3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

None

3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of less than 100,000 gallons per year, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

Storage tanks of any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the emission unit’s process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.3 Addition of Insignificant Activities

3.3.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.3.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.

3.3.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 01: Fuel Combustion Units	1H101 Regeneration Gas heater	08/99	Low NO_x Burners
	2H101 Regeneration Gas heater	08/99	Low NO_x Burners
	H301 Amine Regeneration Heater	8/99	Low NO_x Burners
	H601 Regeneration Gas Heater	8/99	None
	H602 Regeneration Gas Heater	8/99	None
Unit 02: Gas Turbines	1C202 Gas Turbine	8/1999	None
	2C202 Gas Turbine	8/1999	
Unit 03: Gas Treatment Units	Merox Treatment	8/1999	Merox Off-Gas Incinerator
	Amine Treatment	8/1999	Acid Gas Incinerator
Unit 04: Molecular Sieve	Molecular Sieve	8/2000	IN 507 Low Pressure Flare
Unit 05: V-704 Condensate (C5+) Liquid Storage Tank	V-704 Condensate (C5+) Liquid Storage Tank	7/1999	Low Pressure Flare
Unit 06: Heat Transfer Fluid Heaters	Two Natural Gas-Fired Heaters, Maximum Heat Input Capacity: 198 mmBtu/hr	8/99	Low NO_x Burners

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 07: Engines - Fuel Oil Fired Internal Combustion Engines	Two Mitsubishi S12R-PTA- Fuel oil fired engines	3/00	None
Unit 08: Tanks	V-701 A V 701 B V 701 C V 701 D	3/00	Permanent Submerged Pipe Loading
	V-702 A V 702 B V 703 A V 703 B	7/99	Permanent Submerged Pipe Loading
	V 705 Off Specification Bullet	7/99	Permanent Submerged Pipe Loading
	TK 506 Methanol Storage Tank	8/00	Permanent Submerged Pipe Loading
	TK520 Gasoline Dispensing Tank		Permanent Submerged Pipe Loading
Unit 09: TK 501 Storage Tank	Fixed roof tank, capacity 119 m^3	3/00	Submerged Loading Pipe/Carbon Canister
Unit 10: Train # 1 - Inlet Separator	Inlet Separator	8/00	High and Low Pressure Flares, and Cyrogenic Burn Pit (“ground flare”)
Unit 11: Fugitive VOM Emissions from Pumps, PRV, Valves, Open Ended Valves or Line, Fittings and Various Fittings	Pumps, PRV, Valves, Open Ended Valves or Line, Fittings and Various Fittings	2000	Leak Detection and Repair Program

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of NO_x, PM, SO_2, and VOM emissions.

5.1.2 This permit is issued based on the source not being a major source of HAPs.

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:

a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

Compliance with this requirement is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

b. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.

5.2.3 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

a. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

b. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

c. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

5.2.4 Risk Management Plan

a. This stationary source, as defined in 40 CFR Section 68.3, is subject to 40 CFR Part 68, the Accidental Release Prevention regulations [40 CFR 68.215(a)(1)].

b. The owner or operator of a stationary source shall revise and update the RMP submitted, as specified in 40 CFR 68.190.

5.2.5 a. Should this stationary source become subject to a regulation under 40 CFR Parts 60, 61, or 63, or 35 IAC after the date issued of this permit, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by 40 CFR Part 70 or 71.

b. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with all applicable requirements of any potentially applicable regulation which was promulgated after the date issued of this permit.

5.2.6 Episode Action Plan

a. If the source is required to have an episode action plan pursuant to 35 IAC 244.142, the Permittee shall

maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.

b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared.

c. If a change occurs at the source which requires a revision of the plan (e.g., operational change, change in the source contact person), a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA.

d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:

i. Illinois EPA, Compliance Section; and

ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control; or

iii. For sources located within the city of Chicago: Chicago Department of Environmental Control.

5.2.9 CAM Plan

This stationary source has a pollutant-specific emissions unit that is subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources. As a result of this application either not having been submitted or deemed complete by April 20, 1998, the source is required to comply with the requirements of 40 CFR Part 64 for large pollutant-specific emissions units in the initial application and CAAPP permit. The source must submit a CAM plan for all other affected pollutant-specific emissions units upon application for renewal of the initial CAAPP permit, or upon a significant modification to the CAAPP permit for the construction or modification of a large pollutant-specific emissions unit which has the potential post-control device emissions of

the applicable regulated air pollutant that equals or exceeds major source threshold levels.

5.3 Non-Applicability of Regulations of Concern

5.3.1 a. The source is not subject to 40 CFR 63, Subpart HHH, National Emission Standards for Hazardous Air Pollutants (NESHAP) from Oil and Natural Gas Transmission and Storage Facilities since the definition of natural gas transmission, per 40 CFR 63.1271 (definitions), states natural gas transmission means the pipelines used for the long distance transport of natural gas (excluding processing); Aux Sable is a natural gas processing plant, therefore not subject to this regulation.

b. This permit is issued based on the source not being subject to 40 CFR 63, Subpart HH, National Emission Standards for Hazardous Air Pollutants from Oil and Natural Gas Production Facilities, since ancillary equipment and compressors that are subject to this subpart and that are also subject to and controlled under the provisions of 40 CFR Part 60, Subpart KKK, are only required to comply with the requirements of 40 CFR Part 60, Subpart KKK. [40 CFR 63.760(g)(1)]

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

None

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.5.1) are set for the purpose of establishing fees and are not federally enforceable.

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	22.3
Sulfur Dioxide (SO_2)	241.2
Particulate Matter (PM)	95.1
Nitrogen Oxides (NO_x)	243.9
HAP, not included in VOM or PM	---
TOTAL	602.5

5.5.2 Emissions of Hazardous Air Pollutants

This permit is issued based on the emissions of HAPs as listed in Section 112(b) of the CAA not being equal to or exceeding 10 tons per year of a single HAP or 25 tons per year of any combination of such HAPs, so that this source is considered a minor source for HAPs.

5.5.3 Other Source-Wide Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to either the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.6 General Recordkeeping Requirements

5.6.1 Emission Records

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

Total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions) of this permit.

5.6.5 Records for Operating Scenarios

N/A

5.6.6 Retention and Availability of Records

a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.

b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the source with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year.

5.7.3 Annual Reporting of HAP Emissions

The Permittee shall submit an annual report to the Illinois EPA, Compliance Section, on HAP emissions from the source, including the following information, so as to demonstrate whether the source is being operated as a non-major source of HAP emissions. This report shall be submitted with the Annual Emissions Report (Condition 9.7).

a. The annual emissions of individual HAPs for each month of the previous calendar year sufficient to demonstrate compliance with the 12 month running total of Condition 5.5.2, tons/year, (e.g., for the month of January, the emissions from February of the

preceding calendar year through January; for the month of February, the emissions from March of the preceding calendar year through February; 12 months in all); and

b. The total annual emissions of all HAPs combined for each month of the previous calendar year sufficient to demonstrate compliance with the 12 month running total of Condition 5.5.2, tons/year, (e.g., for the month of January, the emissions from February of the preceding calendar year through January; for the month of February, the emissions from March of the preceding calendar year through February; 12 months in all).

5.8 General Operational Flexibility/Anticipated Operating Scenarios

N/A

5.9 General Compliance Procedures

5.9.1 General Procedures for Calculating Emissions

Compliance with the source-wide emission limits specified in Condition 5.5 shall be based on the recordkeeping and reporting requirements of Conditions 5.6 and 5.7, and compliance procedures in Section 7 (Unit Specific Conditions) of this permit.

6.0 NOT APPLICABLE TO THIS PERMIT

7.0 UNIT SPECIFIC CONDITIONS

7.1 Unit 01: Fuel Combustion Units

7.1.1 Description

Four regeneration gas heaters:

Used for heating of regeneration gas.

One Amine Regeneration Heater:

Used for the heating of ethane.

7.1.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Date Constructed	Description	Emission Control Equipment
1H101 Regeneration Gas heater	08/99	Natural gas-fired gas heaters. Maximum heat input capacity: 13 mmBtu/hr	Low NO_x Burners
2H101 Regeneration Gas heater	08/99	Natural gas-fired gas heaters. Maximum heat input capacity: 13 mmBtu/hr	Low NO_x Burners
H301 Amine Regeneration Heater	8/99	Natural gas-fired gas heaters. Maximum heat input capacity: 17.1 mmBtu/hr	Low NO_x Burners
H601 Regeneration Gas Heater	8/99	Natural gas-fired gas heaters. Maximum heat input capacity: 4 mmBtu/hr	None
H602 Regeneration Gas Heater	8/99	Natural gas-fired gas heaters. Maximum heat input capacity: 4 mmBtu/hr	None

7.1.3 Applicability Provisions and Applicable Regulations

a. The affected fuel combustion units, for the purpose of these unit-specific conditions, are natural gas fired fuel combustion units used for heating of regeneration gas. The affected fuel combustion units are identified in Condition 7.1.2.

b. The emission of carbon monoxide (CO) into the atmosphere from any fuel combustion unit with actual heat input greater than 2.9 MW (10 mmBtu/hr) shall not exceed 200 ppm, corrected to 50 percent excess air; specifically, this would apply to 1H101, 2H101, and the H301 units. [35 IAC 216.121]

c. The affected fuel combustion units are also subject to the opacity limits identified in Condition 5.2.2(b).

7.1.4 Non-Applicability of Regulations of Concern

a. The affected fuel combustion units are not subject to 35 IAC 217.141, because the actual heat input of the affected fuel combustion units is less than 73.2 MW (250 mmBtu/hr).

b. Pursuant to 35 IAC 218.303, each affected fuel combustion units, are not subject to 35 IAC 218.301, Use of Organic Material.

c. There are no applicable requirements for particulate matter or sulfur dioxide for affected fuel combustion units firing natural gas.

7.1.5 Operational and Production Limits and Work Practices

Each affected fuel combustion units shall only be fired by natural gas.

7.1.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected fuel combustion units are subject to the following:

See Attachment 10.1 for limitations that apply to these units.

The limits in Attachment 10.1 are based on maximum operation, standard emission factors and data from manufacturer. Compliance with annual limits shall be determined from a running total of 12 months of data. [T1]

7.1.7 Testing Requirements

None

7.1.8 Monitoring Requirements

None

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected fuel combustion units to demonstrate compliance with 5.5.1, and 7.1.6, pursuant to Section 39.5(7)(b) of the Act:

a. Daily natural gas usage of the affected fuel combustion units; and

b. Annual aggregate NO_x, CO, PM, and VOM emissions from each affected fuel combustion unit, based on fuel consumption and the applicable emission factors, with supporting calculations.

7.1.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the affected regenerative gas heaters with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

a. Notification within 60 days of operation of an affected regenerative gas heaters that may not have been in compliance with the opacity limitations in Condition 5.5.2(b) only, with a copy of such record for each incident; and

b. Emissions of NO_x, CO, PM, or VOM from the affected fuel combustion unit in excess of the limits specified in Condition 5.5.1 and 7.1.6 (addressed in Attachment 10.1) based on the current month’s records plus the preceding 11 months within 30 days of such an occurrence.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.1.12 Compliance Procedures

a. Compliance with Condition 7.1.3(b) is demonstrated under inherent operating conditions of the affected fuel combustion units, so that no compliance procedures are set in this permit addressing this requirement.

b. Compliance with the emission limits in Conditions 5.5.1 and 7.1.6 shall be based on the recordkeeping requirements in Condition 7.1.9 and the emission factors and formulas listed below:

i. Emissions from the gas heaters burning natural gas shall be calculated based on the following emission factors:

Pollutant	Emission Factor (lb/Mft^3)
NO_x	100 or 50*
CO	84
PM	7.6
VOM	5.5

* For use with uncontrolled units of the affected fuel combustion unit.

These are the emission factors for uncontrolled and controlled natural gas combustion in commercial boilers (< 100 mmBtu/hr), Tables 1.4-1, 1.4-2, and 1.4-3, AP-42, Volume I, Supplement D, July 1998. VOM emission factor based on TOC factor corrected for 52% methane contribution.

Fuel Combustion Unit Emissions (ton) = natural gas consumed multiplied by the appropriate emission factor/2000.

7.2 Unit 02: Gas Turbines
Control: None

7.2.1 Description

Two gas turbines used for compression of process gas.

7.2.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Construction Date	Rated Heat Input
02	1C202 Gas Turbine	August 1999	228.6 mmBtu/hr
	2C202 Gas Turbine	August 1999	228.6 mmBtu/hr

7.2.3 Applicability Provisions and Applicable Regulations

a. An "affected gas turbines" for the purpose of these unit-specific conditions are the gas turbines that are subject to the NSPS for Stationary Gas Turbines, 40 CFR 60 Subparts A and GG, because the heat input at peak load are equal to or greater than 10.7 gigajoules per hour (10 mmBtu/hr) for each, based on the lower heating value of the fuel fired and the gas turbines commenced construction, modification, or reconstruction after October 3, 1977. The Illinois EPA administers the NSPS for subject sources in Illinois pursuant to a delegation agreement with the USEPA.

b. Standard for Nitrogen Oxides:

Pursuant to 40 CFR 60.332(a)(1), no owner or operator of an affected gas turbine shall cause to be discharged into the atmosphere from such gas turbine, any gases which contain nitrogen oxides in excess of:

$$STD = 0.0075 \frac{(14.4)}{Y} + F$$

Where:

STD = allowable NO_x emissions (percent by volume at 15 percent oxygen and on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's peak load (kilojoules per watt

hour), or actual measured heat rate based on lower heater value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NO_x emission allowance for fuel-bound nitrogen calculated from the nitrogen content of the fuel as follows:

Fuel-bound nitrogen (percent by weight)	F (NO_x percent by volume)
$N \leq 0.015$	0
$0.015 < N \leq 0.1$	0.04 (N)
$0.1 < N \leq 0.25$	0.04 + 0.0067(N - 0.1)
$N > 0.25$	0.005

where:

N = the nitrogen content of the fuel (percent by weight) determined in according with Condition 7.2.8.

c. Standard for Sulfur Dioxide

i. No owner or operator subject to the provisions of this subpart shall cause to be discharged into the atmosphere from any stationary gas turbine any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis. [40 CFR 60.333(a)]

d. No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in 35 IAC 218.302, 218.303, or 218.304 and the following exemption: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall only apply to photochemically reactive material. [35 IAC 218.301]

7.2.4 Non-Applicability of Regulations of Concern

a. The affected gas turbines are not subject to 35 IAC 216.121, emissions of carbon monoxide from fuel combustion emission units, because the affected gas turbines are not by definition fuel combustion emission units.

b. The affected gas turbines are not subject to 35 IAC 217.121, emissions of nitrogen oxides from new fuel combustion emission sources, because the actual heat input of each unit is less than 73.2 MW (250 mmBtu/hr) and the affected gas turbines is not by definition fuel combustion emission units.

c. This permit is issued based on the affected gas turbines not being subject to 35 IAC 212.321 due to the unique nature of this process, such rules cannot reasonably be applied.

7.2.5 Operational and Production Limits and Work Practices

a. At all times, including periods of startup, shutdown, and malfunction, the Permittee shall, to the extent practicable, maintain and operate any affected gas turbine in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Illinois EPA or the USEPA which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source [40 CFR 60.11(d)].

b. The affected gas turbine shall only be fired with natural gas.

7.2.6 Emission Limitations

In addition to Condition 5.5.1 the affected gas turbines are subject to the following:

See Attachment 10.1 for limitations that apply to this unit.

These limits in Attachment 10.1 are based on maximum operation, standard emission factors and data from manufacturer. Compliance with annual limits shall be determined from a running total of 12 months of data. [T1].

The above limitations were established in Permit 98080090, pursuant to Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and modification and 40 CFR 52.21, Prevention of Significant

Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]

7.2.7 Testing Requirements

a. To compute the nitrogen oxide emission limit standard, the Permittee shall use analytical methods and procedures that are accurate to within 5 percent and are approved by the Illinois EPA or the USEPA to determine the nitrogen content of the fuel fired [40 CFR 60.335(a)].

b. The Permittee shall determine compliance with the sulfur content standard in Condition 7.2.3(c) as follows: ASTM D1072-80, D3031-81, D4084-82, or D3246-81 shall be used for the sulfur content of gaseous fuels. The applicable ranges of some ASTM methods mentioned above are not adequate to measure the levels or sulfur in some fuel gases. Dilution of samples before analysis (with verification of the dilution ratio) may be used, subject to the approval of the Illinois EPA or the USEPA [40 CFR 60.335(d)].

c. To meet the requirements of Condition 7.2.8 (see also 40 CFR 60.334(b)), the owner or operator shall use the methods specified in Conditions 7.2.7(a) and (b) (see also 40 CFR 60.335(a) and (d))to determine the nitrogen and sulfur contents of the fuel being burned. The analysis may be performed by the Permittee, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency [40 CFR 60.335(e)].

7.2.8 Monitoring Requirements

Pursuant to 40 CFR 60.334(b), the Permittee shall monitor sulfur content and nitrogen content of the fuel being fired in an affected gas turbine. The frequency of determination of these values shall be as follows:

a. For natural gas, which is supplied without intermediate bulk storage, the values shall be determined and recorded every 6 months. This is a custom schedule for determination of the values based on the design and operation of the affected gas turbine and the characteristics of the fuel supply,

substantiated with data submitted to and approved by the Illinois EPA [40 CFR 60.334(b)(2)].

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.7, the Permittee shall maintain records of the following items for the affected gas turbine to demonstrate compliance with Conditions 5.5.1, 7.2.3, 7.2.5, and 7.2.6 pursuant to Section 39.5(7)(b) of the Act:

a. A file that includes the nitrogen content of the fuel relied upon, if greater than zero, to determine the applicable standard pursuant to Condition 7.2.3(b)(i) and show compliance with such standard and the hourly emission limit pursuant to Condition 7.2.6.

b. Natural gas fuel usage for the affected gas turbines, ft^3/mo and ft^3/yr;

c. The nitrogen content of the fuel to be used in the affected gas turbines as follows:

   i. For natural gas, this shall be recorded on a daily basis, except as provided in Condition 7.2.8(b).

d. The sulfur content of the fuel to be used in the affected gas turbines as monitored pursuant to Condition 7.2.8.

e. The heat content of the fuel used in the affected gas turbine as follows:

   i. Natural gas, Btu/ft^3.

g. Monthly and annual aggregate NO_x, PM, CO, and VOM emissions from the affected gas turbines shall be maintained, based on fuel consumption and the applicable emission factors in Condition 7.2.12, with supporting calculations.

7.2.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with the control and operating requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

a. Pursuant to 40 CFR 60.334(c), periods of excess emissions that shall be reported are defined as follows:

i. Nitrogen oxides.

Any period in which the fuel-bound nitrogen of the fuel is greater than the maximum nitrogen content allowed by the fuel-bound nitrogen allowance used during the performance test required by Condition 7.2.7(a). Each report shall include the average fuel consumption, ambient conditions, gas turbine load, and nitrogen content of the fuel during the period of excess emissions, and the graphs or figures developed under Condition 7.2.7(a) (see also 40 CFR 60.335(a)) [40 CFR 60.334(c)(1)].

ii. Sulfur dioxide.

Any daily period during which the sulfur content of the fuel being fired in the gas turbine may not comply with condition 7.2.3(c) [40 CFR 60.334(c)(2)].

b. The owner or operator of any stationary gas turbine shall monitor sulfur content of the fuel being fired in the turbine, pursuant to USEPA Custom Fuel Monitoring Document dated August 14, 1987.

i. Compliance with the sulfur content standard in 40 CFR 60.333(b) shall be determined by using ASTM D 1072-80, D 3031-81, D 4084-82, or D3246-81 for gaseous fuels, pursuant to 40 CFR 60.335(d). The analysis may be performed by the owner or operator, a service contractor retained by the owner or operator, the fuel vendor, or any other qualified agency, pursuant to 40 CFR 60.335(e).

ii. A. Sulfur monitoring shall be conducted monthly for six months.

B. If monthly monitoring indicates consistent compliance with 40 CFR 60.333(b), then sulfur monitoring shall be conducted once per quarter for six quarters.

C. If quarterly monitoring indicates consistent compliance with 40 CFR 60.333(b), then sulfur monitoring shall be conducted at least annually.

c. Should any sulfur monitoring as required in Condition 7.2.10(b)(ii) above indicate noncompliance with 40 CFR 60.333(b), the owner or operator shall notify the Illinois EPA of such excess sulfur contents and return to monthly monitoring in accordance with Condition 7.2.10(b)(2)(A).

d. If there is a change in fuel supply, the owner or operator must notify the Illinois EPA of such change.

e. Emissions of NO_x, CO, PM, and VOM from the affected gas turbines in excess of the limits specified in Condition 7.2.6 (addressed in Attachment 10.1) based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected turbine without prior notification to the Illinois EPA or revision of this permit. This condition does not affected the Permittee’s obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

The Permittee may refurbish the combustion unit of an affected turbine or replace it with a similar unit consistent with the Permittee’s historic practice with respect to repair of the affected turbines. This authorization does not extend to changes that are intended to increase the power output of an affected turbine.

Note: The Permittee has maintained a spare combustion unit that can be readily exchanged with the installed unit on an affected turbine to allow the affected turbine to continue in operation while “off line” repairs are being made to the unit. The Illinois EPA has determined that this activity qualifies as “routine repair, maintenance, and replacement of components,” so that it is exempt from case-by-case review as a modification, because

preparation for this activity has occurred in advance of need, it is not undertaken to increase the capacity of the affected turbine, and the capacity of the affected turbine is constrained by other components of the unit.

7.2.12 Compliance Procedures

a. Compliance with Condition 7.2.3(c) is demonstrated under inherent operating conditions of affected gas turbines fired by natural gas so that no compliance procedures are set in this permit addressing this regulation.

b. Compliance with 7.2.3(b) is demonstrated by testing in which an approved independent testing service measures nitrogen oxide (NO_x) and Oxygen (O2) concentrations; these tests conducted pursuant to 40 CDR 60.8(a) and 60.335(c).

c. Compliance with the emission limits in Conditions 5.5.1 and 7.2.6 shall be based on the recordkeeping requirements in Condition 7.2.9 and the emission factors and formulas listed below:

i. Natural gas combustion emissions.

To determine compliance with Conditions 5.5.1 and 7.2.6, the natural gas combustion emissions from the affected gas turbine shall be calculated based on the following emission factors:

Pollutant	Emission Factor (lb/mmBtu)
NO_x	0.09
PM	0.0066
CO	0.07
VOM	0.001

These are the emission factors provided by GE as indicated in the Title 5 application; Methane was subtracted from VOM factor provided by GE.

Gas Turbine Emissions (lb) = (Natural Gas Consumed, ft^3) x (Heat Content, Btu/ft^3) x (The Appropriate Emission Factor, lb/mmBtu)

7.3 Unit 03: Gas Treatment Units
Control: Merox Off-Gas Incinerator (IN601)/Acid Gas Incinerator (IN302)

7.3.1 Description

Merox Treatment Unit and Amine Treatment Unit

Both the Amine Unit and the Merox process remove sulfur compounds from Propane, Butanes, and Natural gasoline. The gas stream generated by this process, which is rich in sulfur compounds is sent to incinerators to convert the sulfur compounds to sulfur dioxide (SO_2). The incinerators are sources of emissions due to this SO_2 and other combustion related pollutants that are emissions. There are no hazardous wastes nor solid wastes that are burned with this incinerator.

7.3.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
03	Merox Treatment Unit	08/1999	Merox Off-Gas Incinerator (IN601)
	Amine Treatment Unit	08/1999	Acid Gas Incinerator (IN302)

7.3.3 Applicable Regulations

a. The “affected gas treatment units”, for the purpose of these unit specific conditions, are identified in Condition 7.3.2.

b. Emissions of CO from any incinerator shall not exceed 500 ppm, corrected to 50 percent excess air [35 IAC 216.141].

c. This permit is issued based on the incinerators being subject to 35 IAC 214.301, which states that no person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2,000 ppm [35 IAC 214.301].

7.3.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the incinerators being process emission units. They receive a gas stream

rich in sulfur compounds and convert these compounds to sulfur dioxide. Incinerators are used because the gas stream would not burn directly due to its high CO_2 content.

b. The affected incinerators are not subject to 40 CFR 60, Subpart E, Standards of Performance for Incinerators, since the incinerators do not burn solid waste.

7.3.5 Operating Requirements, Production Limits, and Work Practices

a. The affected incinerators shall be operated pursuant to written operating procedures, which shall address the above requirements and other practices for proper operation of the incinerators.

b. Individuals that operate incinerator shall be trained in the proper operating procedures for the incinerator.

7.3.6 Emission Limitations

In addition to condition 5.2.2, and the source-wide emission limitations in Condition 5.5, the affected incinerators is subject to the following:

Emissions and operation of the acid gas incinerator and Merox off-gas converter shall not exceed the following limits:

Maximum Firing Rate (mmBtu/Hr)	Pollutant	Emissions (Lb/Hr)	Emissions (T/Yr)
18.42	Sulfur Dioxide	55	240.9
	Nitrogen Oxides	1.8	8.0
	Carbon Monoxide	1.6	6.7
	Particulate Matter	0.14	0.6
	Volatile Organic Material	0.1	0.4

These limits are based on standard emission factors and maximum operation. Compliance with annual limits shall be determined from a running total of 12 months of data. The acid gas incinerator and Merox off-gas converter will be used when the plant has achieved its full capacity of 2.5 billion cubic feet per day of gas. [T1]

Note: H_2S is incinerated for odor problems. SO_2 is emitted as a result.

Until the plant reaches its full capacity of 2.5 billion cubic feet per day, the sulfur dioxide emissions of the Merox off-gas converter and the molecular sieve ethane product sulfur removal system (sulfur emissions from the molecular sieve system are emitted from the low-pressure flare) shall not exceed 435 pounds per hour of 240.9 tons per year. [T1]

The above limitations were established in Permit 98080090, pursuant to Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]

7.3.7 Testing Requirements

N/A

7.3.8 Monitoring Requirements

The condition of the affected incinerators shall be inspected on a periodic basis for the presence of deficiencies.

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain the following records for the affected treatment units to demonstrate compliance with Conditions 5.5.1, and 7.3.6 pursuant to Section 39.5(7)(b) of the Act:

a. Total natural gas usage for incinerators (ft^3/mo and ft^3/yr);

b. Annual aggregate NO_x, PM, SO_2, VOC, and CO emissions from the affected incinerators, based on the natural gas usage and the applicable emission factors, with supporting calculations;

c. Written operating procedures for each incinerator;

d. Operating logs for each incinerator, which include time beginning of charge waste, time burnout of waste completed; and

e. Inspection maintenance logs for affected incinerators, with dates of inspection, maintenance, repair, or other actions completed.

7.3.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with applicable requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

Emissions of NO_x, PM, SO_2, VOC, and CO from the affected incinerators that may be in excess of the limits specified in Conditions 5.5.1 and 7.3.6 within 30 days of such an occurrence.

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.3.12 Compliance Procedures

a. To determine compliance with Condition 5.5.1 and 7.3.6 emissions from fuel combustion from incinerators shall be calculated based on the following emission factors and formulas listed below:

i. To determine compliance with Condition 5.5.1, emissions from the incinerators shall be calculated based on the following emission factors and formulas listed below:

Pollutant	Emission Factor* ($lb/10^6\ ft^3$)
CO	84
VOM	5.5
NO_x	100
SO_2	0.6
PM	7.6

* Emission factors as provided in the Title V application; also located in AP-42, Table 1.4-2, Volume I, Supplement D, July 1998.

b. Compliance provisions addressing Condition 7.3.3(b) and (c) are not set by this permit as compliance is assumed to be achieved by the normal work practices and maintenance activities inherent in operation of the natural gas fired units.

c. To determine compliance with 7.3.6 and 5.5.1, SO_2 emissions from the incinerators converting sulfur compounds to sulfur dioxide are based on mass balance calculations (per information provided in the Title V application).

7.4 Unit 04: Molecular Sieve
Control: IN 507 Low Pressure Flare

7.4.1 Description

Ethane Product gas is passed through the molecular sieve where sulfur compounds are selectively removed by the system. There are three molecular sieve units. At any point in time, one of these would be in regeneration mode, while the other two would be used for removal of sulfur compounds. Every 20 hours pipeline quality inlet gas is used to regenerate the molecular sieve by heating it and flowing through the loaded molecular sieve to remove the accumulated sulfur compounds. For part of the regeneration cycle this regeneration gas will be will contain small amounts of sulfur compounds so it cannot be returned to the main gas stream because it would put that gas off-specification for distribution use. This regeneration gas, for a short time each day (us pt 90 minutes) while the sulfur compounds are being desorbed, is flared in the low-pressure flare. Flaring is a high-temperature oxidation process used to burn combustible components, mostly hydrocarbons, of waste gases from industrial operations.

7.4.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 04	Molecular Sieve	8/2000	Low Pressure Flare

7.4.3 Applicable Regulations

a. The “affected molecular sieve”, for the purpose of these unit specific conditions, is identified in Condition 7.4.2.

b. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm. [35 IAC 214.301]

7.4.4 Non-Applicability of Regulations of Concern

The affected molecular sieve is not subject to 35 IAC 217.301, Nitrogen Oxide Emission Limits for Process Emission Sources, since the affected molecular sieve does

not produce products of organic nitrations and/or oxidations using nitric acid.

7.4.5 Operating Requirements, Production Limits, and Work Practices

None

7.4.6 Emission Limitations

In addition to condition 5.2.2, and the source-wide emission limitations in Condition 5.5, and 7.4.3, the affected molecular sieve is subject to the following:

See Attachment 10.1 for limitations that apply to this unit.

These limits in Attachment 10.1 are based on maximum operation, standard emission factors and data from manufacturer. Compliance with annual limits shall be determined from a running total of 12 months of data.

The above limitations were established in Permit 98080090, pursuant to Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]

7.4.7 Testing Requirements

N/A

7.4.8 Monitoring Requirements

None

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain the following records for the affected incinerators to demonstrate compliance with Conditions 5.5.1, and 7.4.6 pursuant to Section 39.5(7)(b) of the Act:

a. Quantity of combustion products from the flared gas regeneration: pound moles SO_2, pound moles of combustion gas; and

b. Total natural gas usage for the low pressure flare (ft^3/mo and ft^3/yr).

7.4.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with applicable requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

Emissions of NO_x, SO_2, VOC, and CO from the affected molecular sieve that may be in excess of the limits specified in Conditions 5.5.1 and 7.4.6 within 30 days of such an occurrence.

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.4.12 Compliance Procedures

a. Compliance with Condition 7.4.3(b) shall be determined from the recordkeeping requirements of 7.4.9 and by the use of the following formula as provided in the Title V application:

Concentration Average (ppm SO_2) = (Pound Moles SO_2 X 1,000,000) / Pound Moles of Combustion Gas

b. To determine compliance with Condition 5.5.1 and 7.4.6 emissions from the flaring regeneration gas shall be calculated based on the following emission factors and formulas listed below:

i. Emissions from the flaring regeneration gas shall be calculated based on the following emission factors:

Pollutant	Emission Factor (lb/mmBtu)
CO	0.370*
VOM	0.00972**
NO_x	0.068100*

* Emission rate during flaring are based on the factors in Table 13.5-1 of AP-42 and a HHV of 1102 Btu/scf of regeneration gas.

** Emission rate during flaring are based on the factors of 0.14 lb/mmBtu (HHV) of total hydrocarbons and a weight percentage of VOM in the regeneration gas of 6.664 % for a VOM emission factor of 0.00972 lb/mmBtu.

7.5 Unit 05: V-704 Condensate (C5+) Liquid Storage Tank
Control: Low Pressure Flare

7.5.1 Description

The Permittee operates a storage tank to store C5+ (hydrocarbon) liquids. Permanent submerged loading must be used at the tank, minimizing turbulence and evaporation of VOM during loading. The USEPA considers that a tank with a pressure vent setting of between 2.5 and 15 psig to be a low pressure tank. Low pressure tanks do not have breathing losses but may have working losses due to displacement of the vapor space above the liquid stored during loading of the tank. The USEPA does not have any standard methodology to estimate working losses form low-pressure tanks. This condensate tank has a pressure vent setting of 15 psig and is therefore considered a low-pressure tank. Note that all working losses due to the displacement of vapors are vented to a flare.

7.5.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 05	V-704 Condensate (C5+) Fixed Roof Tank (20, 236.00 Barrel capacity)	7/1999	Low Pressure Flare and Permanent submerged loading pipe

7.5.3 Applicable Regulations

a. The “affected condensate liquid storage tank”, for the purpose of these unit specific conditions, is identified in Condition 7.5.2.

b. The affected condensate liquid storage tank subject to 40 CFR 60 Subpart Kb is hereby shielded from compliance with 35 IAC 218.121. This shield is issued to streamline the applicable requirements for the source, based on the Illinois EPA’s finding that compliance with 40 CFR 60, Subpart Kb assures compliance with 35 IAC 218.121, following the review requirements of 40 CFR 60 Subpart Kb and 35 IAC 218.121.

7.5.4 Non-Applicable Regulations

N/A

7.5.5 Control Requirements

a. The condensate liquid tank shall be equipped with a closed vent system designed to collect all VOC vapors and gases discharged from this tank and operated with no detectable emissions pursuant to 40 CFR 60.112(b)(a)(3)(i).

b. The VOC vapors and gases discharged from the condensate storage tank shall be ducted to a control device operated to reduce inlet VOC emissions by 95 percent or greater pursuant to 40 CFR 60.112(b)(a)(3)(ii).

7.5.6 Emission Limitations

There are no specific emission limitations for this unit, however, there are source wide emission limitations in Condition 5.5 that include this unit.

Emission limits for VOM are not set for the affected condensate liquid storage tank, as potential to emit in the absence of permit limit is less than the significant and major source thresholds for these pollutants pursuant to Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or the federal rules for the Prevention of Significant Deterioration (PSD), 40 CFR 52.21.

7.5.7 Operating Requirements

The following are requirements for control devices (low-pressure flare) used to comply with applicable 40 CFR subparts of Parts 60 and 61. The requirements only apply to facilities covered by subparts referring to this section. [40 CFR 60.18]

a. Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. [40 CFR 60.18(c)]

b. Flares shall be operated with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). [40 CFR 60.18(c)(2)]

c. An owner/operator has the choice of adhering to either the heat content specifications in 40 CFR 60.112b(a)(3)(ii) and the maximum tip velocity specifications in 40 CFR 60.18(c)(4), or adhering to the requirements in 40 CFR 60.18(c)(3)(i). [40 CFR 60.18(c)(3)]

d. Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max}, as determined by the following equation: [40 CFR 60.18(c)(3)(i)]

$V_{max} = (X_{H2} - K_1) * K_2$

Where:

V_{max} = Maximum permitted velocity, m/sec.

K_1 = Constant, 6.0 volume-percent hydrogen.

K_2 = Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H2} = The volume-percent of hydrogen, on a wetbasis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77.

The actual exit velocity of a flare shall be determined by the method specified in 40 CFR 60.18(f)(4). [40 CFR 60.18(c)(3)(i)(B)]

Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f)(3). [40 CFR 60.18(c)(3)(ii)]

Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided in 40 CFR 60.18(c)(4)(ii) and (iii). [40 CFR 60.18(c)(4)]

Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). [40 CFR 60.18(c)(4)(ii)]

Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than the velocity, V_{max}, as determined by the method specified in 40 CFR 60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. [40 CFR 60.18(c)(4)(iii)]

Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max}, as determined by the method specified in 40 CFR 60.18(f)(6). [40 CFR 60.18(c)(5)]

Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted. [40 CFR 60.18(c)(6)]

Owners or operators of flares used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable subparts will provide provisions stating how owners or operators of flares shall monitor these control devices. [40 CFR 60.18(d)]

Flares used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them. [40 CFR 60.18(e)]

Method 22 of 40 CFR 60, Appendix A shall be used to determine the compliance of flares with the visible emission provisions of this subpart. The observation period is 2 hours and shall be used according to Method 22. [40 CFR 60.18(f)]

The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. [40 CFR 60.18(f)(2)]

The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

$$H_T = K\sum_{i=1}^{n} C_i H_i$$

where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25°C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20°C;

K = constant, 1.740×10^{-7} (1/ppm) (g mol/scm) (MJ/Kcal)

Where the standard temperature for g mole is 20°C

C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994) (Incorporated by reference as specified in §60.17); and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25°C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in §60.17) if published values are not available or cannot be calculated. [40 CFR 60.18(f)(3)]

The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip. [40 CFR 60.18(f)(4)]

The maximum permitted velocity, V_{max}, for flares complying with 40 CFR 60.18(c)(4)(iii) shall be determined by the following equation:

$Log_{10} (V_{max}) = (H_T + 28.8)/31.7$

V_{max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in 40 CFR 60.18(f)(3). [40 CFR 60.18(f)(5)]

The maximum permitted velocity, V_{max}, for air-assisted flares shall be determined by the following equation:

$V_{max} = 8.706+0.7084 (H_T)$

V_{max} = Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

H_T = The net heating value as determined in 40 CFR 60.18(f)(3). [40 CFR 60.18(f)(6)]

7.5.8 Testing Requirements

The Permittee shall fulfill the applicable testing and procedures requirements of 40 CFR 60.113b(c) for each affected condensate liquid storage tank equipped with a closed vent system and control device as required in 40 CFR §60.112b (a)(3).

7.5.9 Recordkeeping Requirements

a. The Permittee shall fulfill the applicable recordkeeping requirements of 40 CFR 60.115b for the affected condensate liquid storage tank pursuant to 40 CFR 60.115b(d), as follows:

After installing a closed vent system and flare to comply with 40 CFR §60.112b, the owner or operator shall meet the following requirements [40 CFR 60.115b(d)]:

i. A report containing the measurements required by 40 CFR §60.18(f) (1), (2), (3), (4), (5), and (6) shall be furnished to the Administrator as required by 40 CFR §60.8 of the General Provisions. This report shall be submitted within 6 months of the initial start-up date [40 CFR 60.115b(d)(1)].

ii. Records shall be kept of all periods of operation during which the flare pilot flame is absent [40 CFR 60.115b(d)(2)]

iii. Semiannual reports of all periods recorded under §60.115b(d)(2) in which the pilot flame was absent shall be furnished to the Administrator [40 CFR 60.115b(d)(3)].

b. The Permittee shall keep the operating records required by 40 CFR 60.116b for the affected condensate liquid storage tank, as follows:

i. The owner or operator of each storage vessel as specified in 40 CFR §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Each storage vessel with a design capacity less than 75 m^3 is subject to no provision of this subpart other than those required by this paragraph [40 CFR 60.116b(b)].

ii. Records of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. [40 CFR 60.116b(c)]

7.5.10 Reporting Requirements

a. The Permittee shall submit written notifications and reports to the Illinois EPA, Compliance Unit as required by the NSPS, for the affected condensate liquid storage tank, as follows:

The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with the control and operating requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

i. Any storage of VOL in an affected condensate liquid storage tank that is not in compliance with the control requirements due to absence of the features required by Condition 7.5.5, e.g., no “flare,” within five days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps taken to avoid future non-compliance.

ii. Any storage of VOL in an affected condensate liquid storage tank that is out of compliance with the control requirements (Condition 7.5.5) due to damage, deterioration, or other condition of the tank, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

7.5.11 Operational Flexibility/ Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected condensate liquid storage tank without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee’s obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in the material stored in a tank, provided the tank continues to comply with the Conditions 7.5.5 and 7.5.7 of this permit.

7.5.12 Compliance Procedures

Per AP-42, Section 7.1.3.4, Organic Liquid Storage Tanks/Pressure Tanks, September, 1997, losses occur during withdrawal and filling operations in low-pressure (2.5 to 15 psig) tanks when atmospheric venting occurs. Fugitive losses are also associated pressure tanks and their equipment, but with proper system maintenance, these losses are considered insignificant. No appropriate

correlations are available to estimate vapor losses from pressure tanks.

7.6 Unit 06: Heat Transfer Fluid Heaters
Control: Low NO_x Burners

7.6.1 Description

The source operates two natural gas-fired heaters to heat a transfer fluid for plant heating requirements.

7.6.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Date Constructed	Description	Emission Control Equipment
H501A Heat Transfer Fluid Heater	8/99	Natural Gas-Fired Heaters, Maximum Heat Input Capacity: 175.5 mmBtu/hr	Low NO_X Burner
H501B Heat Transfer Fluid Heater	8/99	Natural Gas-Fired Heaters, Maximum Heat Input Capacity: 175.5 mmBtu/hr	Low NO_X Burner

7.6.3 Applicability Provisions and Applicable Regulations

a. The “affected heat transfer fluid heaters”, for the purpose of these unit specific conditions, are identified in Condition 7.6.2.

b. Each affected heat transfer fluid heaters are subject to the emission limits identified in Condition 5.2.2.

c. The emission of carbon monoxide (CO) into the atmosphere from affected heat transfer fluid heaters with actual heat input greater than 2.9 MW (10 mmBtu/hr) shall not exceed 200 ppm, corrected to 50 percent excess air. [35 IAC 216.121]

d. The affected heat transfer fluid heaters are subject to the NSPS for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60 Subparts A and Db, because construction of the affected heat transfer fluid heaters was commenced after June 19, 1984 and each affected heat transfer fluid heaters has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 mmBtu/hr). The Illinois EPA is administering the NSPS in Illinois on behalf of the USEPA under a delegation agreement.

i. The emission of nitrogen oxides (NO_x) into the atmosphere from affected heat transfer fluid heaters, including during periods of startup, malfunction and breakdown, shall not exceed 0.1 lb/mmBtu for low heat release. [40 CFR 60.44b(a)(1)(i)]

ii. The emission of nitrogen oxides (NO_x) into the atmosphere from affected heat transfer fluid heaters, including during periods of startup, malfunction and breakdown, shall not exceed 0.2 lb/mmBtu for high heat release. [40 CFR 60.44b(a)(1)(ii)]

7.6.4 Non-Applicability of Regulations of Concern

a. The affected heat transfer fluid heaters are not subject to 35 IAC 217.141, because the actual heat input of the affected heat transfer fluid heaters are less than 73.2 MW (250 mmBtu/hr).

b. Pursuant to 35 IAC 218.303, the affected heat transfer fluid heaters, i.e., fuel combustion emission units, are not subject to 35 IAC 218.301, Use of Organic Material.

c. There are no applicable requirements for particulate matter or sulfur dioxide for affected heat transfer fluid heaters firing natural gas.

7.6.5 Operational and Production Limits and Work Practices

a. Each affected heat transfer fluid heater shall only be fired by natural gas.

b. Organic liquid by-products or waste materials shall not be used in the affected heat transfer fluid heaters.

7.6.6 Emission Limitations

In addition to condition 5.2.2, and the source-wide emission limitations in Condition 5.5, the affected heat transfer fluid heaters are subject to the following:

See Attachment 10.1 for limitations that apply to this unit.

These limits in Attachment 1 are based on maximum operation, standard emission factors and data from manufacturer. Compliance with annual limits shall be determined from a running total of 12 months of data.

The above limitations were established in Permit 98080090, pursuant to Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]

7.6.7 Testing Requirements

The Permittee shall conduct the applicable performance tests for nitrogen oxides for the heat transfer fluid heaters pursuant to 40 CFR 60.46(b)(e). These tests shall be performed using the continuous system for monitoring nitrogen oxides per 40 CFR 60.647(c).

These tests shall be performed within 60 days after achieving the maximum production at which the affected facility will be operated, but no later than 180 days after initial startup of such facility pursuant to 40 CFR 60.8(a).

7.6.8 Monitoring Requirements

The Permittee shall maintain and operate a continuous monitoring system for measuring the nitrogen oxide emissions discharged to the atmosphere and record the output of the system. This system shall be operated during all periods of operation of the affected heat transfer fluid heaters except for continuous monitoring system breakdowns and repairs. Data is to be recorded during calibration checks, and zero and span adjustments. [40 CFR 60.48(b) and (c)]

7.6.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items to demonstrate compliance with Conditions 5.5.1, 7.6.6, and 7.6.3(d) pursuant to Section 39.5(7)(b) of the Act:

a. The heat transfer fluid heaters subject to the nitrogen oxides standards under 40 CFR §60.44b (Condition 7.6.3(d)) shall maintain records of the following information for each heat transfer fluid heater operating day:

i. Calendar date; [40 CFR 60.49b(g)(1)];

ii. Total natural gas usage for the affected heat transfer fluid heaters (ft^3/day); [40 CFR 60.49b(d)]

iii. The average hourly nitrogen oxides emission rates (expressed in lb/million Btu heat input) measured or predicted; [40 CFR 60.49b(g)(2)]

iv. The 30-day average nitrogen oxides emission rates (lb/million Btu heat input) calculated at the end of each affected heat transfer fluid heaters operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 affected boiler operating days; [40 CFR 60.49b(g)(3)]

v. Identification of the affected heat transfer fluid heater operating days when the calculated 30-day average nitrogen oxides emission rates are in excess of the nitrogen oxides emissions standards under 40 CFR 60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken; [40 CFR 60.49b(g)(4)]

vi. Identification of the affected heat transfer fluid heaters operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient and a description of corrective actions taken; [40 CFR 60.49b(g)(5)]

vii. Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data; [40 CFR 60.49b(g)(6)]

viii. Identification of “F” factor used for calculations, method of determination, and type of fuel combusted; [40 CFR 60.49b(g)(7)]

ix. Identification of the times when the pollutant concentration exceeded full span of the continuous monitoring system; [40 CFR 60.49b(g)(8)]

x. Description of any modifications to the continuous emissions monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3; [40 CFR 60.49b(g)(9)]

xi. Results of daily CEMS drift tests and quarterly accuracy assessments as required under Appendix F, Procedure 1 of 40 CFR 60; [40 CFR 60.49b(g)(10)]

b. Calculations of the annual capacity factor, determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar quarter, per quarter; [40 CFR 60.49b(d)]

c. Annual aggregate NOx, PM, CO, and VOM emissions from each affected heat transfer fluid heaters, based on fuel consumption and the applicable emission factors, with supporting calculations.

7.6.10 Reporting Requirements

a. The Permittee shall submit excess emission reports for any calendar quarter during which there are excess emissions from the affected heat transfer fluid heaters. If there are no excess emissions during the calendar quarter, the Permittee shall submit a report semiannually stating that no excess emissions occurred during the semiannual reporting period. Excess emissions are defined as any calculated 30-day rolling average nitrogen oxides emission rate, as determined under 40 CFR 60.46b(e), which exceeds the applicable limits in 40 CFR 60.44b (Condition 7.6.3(d)).

b. The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with applicable control and operating requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

Emissions of NO_x, PM, CO, or VOM from the affected heat transfer fluid heaters in excess of the limits specified in Condition 5.5.1 and Condition 7.6.6 based on the current month's records plus the preceding 11 months within 30 days of such an occurrence.

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.6.12 Compliance Procedures

a. Compliance with Condition 7.6.3(c) is assumed to be achieved by work-practices inherent in operation of the heat transfer fluid heaters.

b. Compliance with the emission limits in Conditions 5.5.1 and 7.6.6 shall be based on the recordkeeping requirements in Condition 7.6.9 and the emission factors and formulas listed below or by compliance testing:

Emissions from the affected heat transfer fluid heaters burning natural gas shall be calculated based on the following emission factors or based on compliance testing:

Pollutant	Emission Factor ($lb/10^6 ft^3$)
PM	7.6
NO_x	50
VOM	5.57
CO	84.0

These are the emission factors for uncontrolled natural gas combustion in commercial boilers (< 100 mmBtu/hr), Tables 1.4-1, 1.4-2, and 1.4-3, AP-42, Volume I, Supplement D, July 1998. VOM emission factor based on TOC factor corrected for 52% methane contribution.

Boiler Emissions (lb) = natural gas consumed multiplied by the appropriate emission factor.

c. Compliance to the limitations established in Condition 7.6.3(d) shall be determined by the use of a continuous emissions monitoring system required under 40 CFR 60.48(b). Upon request by the Illinois

EPA or USEPA, the Permittee shall determine compliance to the nitrogen oxides standards as required in Condition 7.6.3(d) through the use of a 30-day performance test. During periods when performance tests are not requested, nitrogen oxides emissions data collected pursuant to 40 CFR 60.48b(g)(1) or 60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the nitrogen oxide emissions standards. A new 30-day rolling average emission rate is calculated each affected heat transfer fluid heater operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 affected heat transfer fluid heater operating days.

The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides monitor required by 40 CFR 60.48b(b) and required under 40 CFR 60.13(h) shall be expressed in lb/million Btu heat input and shall be used to calculate the average emission rates under 40 CFR 60.44b. The 1-hour averages shall be calculated using the data points required under 40 CFR 60.13(b). At least 2 data points must be used to calculate each 1-hour average. The procedures under 40 CFR 60.13 shall be followed for installation, evaluation, and operations of the continuous monitoring systems.

7.7 Unit 07: Engines - Fuel Oil Fired Internal Combustion Engines
Control: None

7.7.1 Description

The Permittee operates internal combustion engines for electric generation that are only fired with distillate fuel oil used for emergency/backup electric generation.

7.7.2 List of Emission Equipment and Pollution Control Equipment

Engine #	Description	Date Constructed	Emission Control Equipment
Engine EG501	Mitsubishi S12R-PTA – Fuel Oil Fired	3/00	None
Engine EG502	Mitsubishi S12R-PTA – Fuel Oil Fired	3/00	None

7.7.3 Applicable Provisions

a. An “affected engines” for the purpose of these unit specific conditions are engines fired with distillate fuel oil. The affected engines are identified in Condition 7.7.2.

b. Each affected engine is subject to the emission limits identified in Condition 7.7.6, and opacity limits of 5.2.2(b).

c. Each affected engine is subject to 35 IAC 215.301 which states that no person shall cause or allow the discharge of more than 3.6 kg (8 lb/hr) of organic material into the atmosphere from any emission source, except as provided in Sections 215.302, 215.303, 215.304 and the following exception: If no odor nuisance exists the limitation of this subpart shall apply only to photochemically reactive material.

7.7.4 Non-Applicable Regulations of Concern

This permit is issued based on affected engines not being subject to the requirements of 35 IAC 212.321 or 212.322 because due to the unique nature of these units, a process weight rate weight cannot be set so that such rules cannot reasonably be applied.

7.7.5 Operational and Production Limits and Work Practices

None

7.7.6 Emission Limitations

In addition to condition 5.2.2, and the source-wide emission limitations in Condition 5.5, the affected engines are subject to the following:

Emissions and operation of the two diesel auxiliary power units shall not exceed the following limits:

Maximum Firing Rate per Unit (Kilowatts)	Total Operating Hours for Both Units (Hr/Yr)	Pollutant	Total Emissions (Lb/Hr)	(T/Yr)
1,250	200	Nitrogen Oxides	100	5.2
		Carbon Monoxide	22.5	1.2
		Particulate Matter	7.3	0.4
		VOM	8.3	0.4
		Sulfur Dioxide	6.9	0.3

These limits are based on standard emission factors and maximum operation. Compliance with annual limits shall be determined from a running total of 12 months of data.

The above limitations were established in Permit 98080090, pursuant to Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]

7.7.7 Testing Requirements

a. Within 45 days of a written request by the Illinois EPA, the Permittee shall have the opacity of the affected engines determined by a certified observer in accordance with USEPA Test Method 9 during representative operating conditions of the engine as specified by the Illinois EPA. The Illinois EPA may require such observations if, based on its observations if the engine opacity does not comply

with 35 IAC 212.123, or the affected engine is poorly maintained or operated so as to make compliance with 35 IAC 212.123 uncertain.

b. i. The Permittee shall notify the Illinois EPA at least 15 days in advance of the date and time of observations, in order to allow the Illinois EPA to witness the observations. This notification shall include the name and employer of the certified observer(s) and identify any concerns for successful completion of observations, i.e., lack of suitable point for proper observation or inability to conduct observations under specified conditions;

ii. The Permittee shall promptly notify the Illinois EPA of any changes in the date and time of observation; and

iii. The Permittee shall provide a copy of its observers readings to the Illinois EPA at the time of observations, if Illinois EPA personnel are present at the conclusion of observations.

c. The Permittee shall submit a written report for these observations within 15 days of the date of observation. This report shall include:

i. Date, place, and time of observations;

ii. Name and employer of certified observer;

iii. Copy of current certification;

iv. Description of observation conditions;

v. Description of engine operating conditions;

vi. Raw data;

vii. Opacity determination; and

viii. Conclusion.

7.7.8 Monitoring Requirements

None

7.7.9 Recordkeeping Requirements

a. Fuel and Emissions Records for Affected Engines

i. The Permittee shall maintain records for each shipment of fuel oil received, of the amount, maximum sulfur content, and supplier.

ii. The Permittee shall maintain records of the sulfur content of the distillate fuel oil supply to the respective engines, based on the weighted average of material in the storage tank, or the sulfur content of the supply shall be assumed to be the highest sulfur content in any shipment in the tank.

iii. The Permittee shall maintain monthly records of the following items so as to demonstrate compliance with the limits in Condition 5.5 and 7.7.6:

A. Total usage of fuel oil for each affected engine fired by distillate oil, in gallons/month;

B. Emissions of NO_x, CO, SO_2, VOM, and PM, in tons/mo, with supporting calculations, for each affected engine.

7.7.10 Reporting Requirements

a. Notifications

The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with an emission limit as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

i. Notification within 60 days of operation of an affected engine that may not have been compliance with the opacity limitations in Condition 5.2.2(b), and

ii. Emissions of CO, PM, SO_2, VOM and NO_x from the affected engines in excess of the limits specified in Condition 7.7.6 based on the current month’s record plus the preceding 11 months within 30 days of such occurrence.

b. Reporting for Startups of Engines

The Permittee shall provide an annual report, submitted with the Annual Emission Report, to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to Section 39.5(7)(b) of the Act, concerning startup of engines subject to Condition 7.1. At a minimum, this report shall include:

i. For each engine, the total number of startups to generate electricity and the total number of such startups that may have resulted in opacity in excess of Condition 5.2.2(b) (i.e., 35 IAC 212.123); and

ii. For each engine, the estimated duration of excess opacity during startup, minutes/year.

7.7.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.7.12 Compliance Procedures

a. Compliance with the source-wide emission limits specified in Condition 5.5 and 7.7.6 shall be based on the records required by Condition 7.7.9 and the use of USEPA emissions estimating guidance, i.e., AP-42 3.4-1 and 3.4-2.

Distillate Fuel Oil - Use the fuel oil usage and the following emission factors:

Pollutant	Factor (lb/mmBtu)
NO_x	3.2
CO	0.85
SO_2	$1.01S_{FO}$
VOM	0.09
PM	0.0697

where S_{FO} represents the percent sulfur in the fuel oil.

The heat content of distillate fuel oil shall be assumed to be 140,000 Btu/gal, per Title 5 permit application.

Emissions = Fuel Oil Usage × Emission Factor

b. Compliance with Condition 7.7.3(c) is assumed to be achieved by the work-practices inherent in the operation of the engines so that no compliance procedures are set in this permit addressing this regulation.

7.8 Unit 08: Tanks
Control: Permanent Submerged Pipe Loading

7.8.1 Descriptions

V 701 A – used to store Propane
V 701 B – used to store Propane
V 701 C – used to store Propane
V 701 D – used to store Propane
V 702 A – used to store ISO – Butane
V 702 B - used to store ISO – Butane
V 703 A – used to store n - Butane
V 703 B – used to store n – Butane
V 705 Off Specification Bullet – used to store off-specification liquids
TK 506 Methanol Storage Tank

7.8.2 List of Emission Units and Air Pollution Control Equipment

Date Constructed	Emission Unit	Description	Emission Control Equipment
3/00	V-701 A V 701 B V 701 C V 701 D	Pressure tanks (operated > 204.9 kPa)	Permanent Submerged Pipe loading
7/99	V-702 A V 702 B V 703 A V 703 B	Pressure tanks (operated > 204.9 kPa)	Permanent Submerged Pipe loading
7/99	V 705 Off Specification Bullet	Pressure tanks (operated > 204.9 kPa)	Permanent Submerged Pipe loading
3/00	TK520 Gasoline Dispensing Tank TK 506 Methanol Storage Tank	Fixed roof, < 40 m^3	Permanent Submerged Pipe loading

7.8.3 Applicability Provisions

a. The “affected tanks” for the purpose of these unit specific conditions, are the tanks identified in Condition 7.8.1 and 7.8.2.

b. An “affected tanks," for the purpose of these unit-specific conditions, are storage tanks only subject to 35 IAC 218.122(b). A storage tank is subject to the requirements of 35 IAC 218.122(b) if the tank has a capacity greater than 250 gallons and is used to

store a volatile organic liquid with a vapor pressure of 2.5 psia or greater at 70°F.

7.8.4 Non-Applicable Regulations

The affected tanks are not subject to 40 CFR 60, Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels), for which Construction, Reconstruction, or Modification Commenced After July 23, 1984, since tanks V701 A-D, V702A and B, V703 A and B, and tank V 705 Off Specification Bullet will be operated as pressure tanks at greater than 204.9 kPa of pressure and without emissions to the atmosphere. Tank TK 506 Methanol Storage Tank and TK520 are of capacity less thank 40 m^3; applicability requires greater than or equal to 40 m^3 with storage of a Volatile Organic Liquids.

7.8.5 Control Requirements

Each affected tanks shall be equipped and operated with a permanent submerged loading pipe, pursuant to 35 IAC 218.122(b). (The Illinois EPA has not approved use of other equivalent equipment in lieu of a permanent submerged loading pipe.)

7.8.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide limitations in Condition 5.5 that include these units.

7.8.7 Operating Requirements

None

7.8.8 Inspection Requirements

None

7.8.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected tank to demonstrate compliance with Condition 7.8.5 pursuant to Section 39.5(7)(b) of the Act:

a. Design information for the tank showing the presence of a permanent submerged loading pipe; and

b. Maintenance and repair records for the tank, as related to the repair or replacement of the loading pipe.

7.8.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with the control and operating requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

a. Any storage of VOL in an affected tank that is not in compliance with the control requirements due to absence of the features required by Condition 7.8.5, e.g., no “permanent submerged loading pipe,” within five days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps taken to avoid future non-compliance.

b. Any storage of VOL in an affected tank that is out of compliance with the control requirements (Condition 7.8.5) due to damage, deterioration, or other condition of the loading pipe, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

7.8.11 Operational Flexibility/ Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected tank without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee’s obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in the material stored in a tank, provided the tank continues to comply with the Conditions in Section 7.8.5 of this permit.

7.8.12 Compliance Procedures

Compliance with the emission limits in Condition 5.5.1 shall be based on the recordkeeping requirements in Condition 7.8.9 and the emission factors and formulas listed below:

For the purpose of estimating VOM emissions from the affected tanks to determine compliance with Conditions 5.5.1, Versions 3.1 or 4.0 of the TANKS program are acceptable.

7.9 Unit 09: TK 501 Storage Tank
Control: Submerged Loading Pipe/Carbon Canister

7.9.1 Descriptions

The Permittee operates a fixed roof storage tank to store water with trace amounts of VOM and sulfur compounds from processes. Permanent submerged loading must be used at the tank, minimizing turbulence and evaporation of VOM during loading.

7.9.2 List of Emission Equipment and Pollution Control Equipment

Unit	Date Constructed	Description	Emission Control Equipment
TK 501	3/00	Fixed roof tank, capacity 119 m^3	Permanent submerged loading pipe/Carbon Canister F-508

7.9.3 Applicability Provisions

a. An “affected tank” for the purpose of these unit specific conditions, is a tank which used to store water and trace amounts of VOM and Sulfur compounds from processes. The affected tank is identified in Condition 7.9.2.

b. The “affected tank" for the purpose of these unit-specific conditions, is a storage tank that is subject to 35 IAC 218.122(b). A storage tank is subject to the requirements of 35 IAC 218.122(b) if the tank has a capacity greater than 250 gallons and is used to store a volatile organic liquid with a vapor pressure of 2.5 psia or greater at 70°F.

c. The “affected tank” is subject to 40 CFR 60, Subpart Kb, Standards of Performance of Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, since the affected tank capacity is greater than or equal to 40 m^3 and is used to store volatile organic liquids for which construction commenced after July 23, 1984.

7.9.4 Non-Applicable Regulations

The affected tank is not subject to the Standards for volatile organic compounds (control requirements) of 40

CFR 60.112b, since the affected tank does not meet requirements of 40 CFR 112b(a) which require a tank with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa.

7.9.5 Control Requirements

The affected tank shall be equipped and operated with a permanent submerged loading pipe, pursuant to 35 IAC 218.122(b). (The Illinois EPA has not approved use of other equivalent equipment in lieu of a permanent submerged loading pipe.)

7.9.6 Emission Limitations

There are no specific emission limitations for these units, however, there are source wide limitations in Condition 5.5 that include these units.

7.9.7 Operating Requirements

None

7.9.8 Inspection Requirements

None

7.9.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected tank to demonstrate compliance with Condition 7.8.5 and 40 CFR 116b(b) pursuant to Section 39.5(7)(b) of the Act:

a. Design information for the tank showing the presence of a permanent submerged loading pipe; and

b. Maintenance and repair records for the tank, as related to the repair or replacement of the loading pipe.

7.9.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with the control and operating requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

a. Any storage of VOL in an affected tank that is not in compliance with the control requirements due to absence of the features required by Condition 7.8.5, e.g., no “permanent submerged loading pipe,” within five days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps taken to avoid future non-compliance.

b. Any storage of VOL in an affected tank that is out of compliance with the control requirements (Condition 7.8.5) due to damage, deterioration, or other condition of the loading pipe, within 30 days of becoming aware of the non-compliance status. This notification shall include a description of the event, the cause for the non-compliance, actions taken to correct the non-compliance, and the steps to be taken to avoid future non-compliance.

7.9.11 Operational Flexibility/ Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected tank without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee’s obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Changes in the material stored in a tank, provided the tank continues to comply with the Conditions in Condition 7.8.5 of this permit.

7.9.12 Compliance Procedures

Compliance with the emission limits in Condition 5.5.1 shall be based on the recordkeeping requirements in Condition 7.9.9 and the emission factors and formulas listed below:

For the purpose of estimating VOM emissions from the affected tanks to determine compliance with Conditions 5.5.1, Versions 3.1 or 4.0 of the TANKS program are acceptable.

7.10 Unit 10: Train # 1 - Inlet Separator
Control: High and Low Pressure Flares, and a Cryogenic Burn Pit ("ground flare")

7.10.1 Descriptions

This is the first step in the separation of natural gas liquids from residue gas (primarily methane). The products of this unit are natural gas liquids (ethane, propane, I-butane, n-butane, natural gasoline) and residue gas (primarily methane). Outlets of pressure relief valves and other equipment are hard piped directly to flare system.

7.10.2 List of Emission Equipment and Pollution Control Equipment

Unit	Date Constructed	Description	Emission Control Equipment
Inlet Separator	8/00	Separator	High and Low Pressure Flares, and Cyrogenic Burn Pit ("ground flare")

7.10.3 Applicability Provisions

a. An "affected inlet separator" for the purpose of these unit specific conditions, is the unit identified in Condition 7.10.2.

b. No person shall cause or allow the emission of sulfur dioxide into the atmosphere from any process emission source to exceed 2000 ppm. [35 IAC 214.301]

c. Malfunction and Breakdown Provisions

In the event of a malfunction or breakdown or condition known as plant upset conditions, the Permittee is authorized to continue operation of the cryogenic ground flare (burn pit) in violation of the applicable requirement of 35 IAC 212.122, as necessary to prevent risk of injury to personnel or severe damage to equipment. This authorization is subject to the following requirements:

i. The Permittee shall repair the damaged feature(s) of the knockout drums on the low pressure flare system or remove the knockout drums on the low pressure flare system from

service as soon as practicable. This shall be accomplished within one day unless the feature(s) can not be repaired within one day and the knockout drums on the low pressure flare system can not be removed from service within one day, and the Permittee obtains an extension, for up to three days, from the Illinois EPA. The request for such an extension must document that replacement parts or replacement of the knockout drums on the low pressure flare system are/is unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will be repaired or the knockout drums on the low pressure flare system replaced. The unit shall be shut down if operation beyond extension is required.

ii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.1.9(b) and 7.1.10(a).

7.10.4 Non-Applicable Regulations

Pursuant to 35 IAC 218.303, flares are not subject to 35 IAC 218.301, Use of Organic Material.

7.10.5 Control Requirements

None

7.10.6 Emission Limitations

In addition to Condition 5.2.2 and the source-wide emission limitations in Condition 5.5, the affected inlet separator and its emission control equipment are subject to the following:

Emissions and operation of the high-pressure flare shall not exceed the following limits:

Process Rate				
Million Cubic Feet (of Gas/Mo)	Million Cubic Feet (of Gas/Yr)	Pollutant	Emissions (Lb/Mo)	(T/Yr)
3.29	38.33	NO_x	330	2.0
		CO	270	1.6
		VOM	55	0.3

These limits are based on standard emission factors and maximum operation.

The above limitations were established in Permit 98080090, pursuant to Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]

7.10.7 Operating Requirements

The condition the flare shall be inspected on a periodic basis for the presence of deficiencies and any deficiencies shall be expeditiously repaired or the flare taken out of service/replaced.

7.10.8 Inspection Requirements

None

7.10.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected inlet separator to demonstrate compliance with Condition 7.10.5, and Condition 7.10.6 pursuant to Section 39.5(7)(b) of the Act:

a. Total natural gas usage for the flares (ft^3/yr);

b. Records for Malfunctions and Breakdowns of knockout drums on the low pressure flare system

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of a cyrogenic ground flare (burn pit)) subject to 35 IAC 212.122 during malfunctions and breakdown of the knockout drums on the low pressure flare system, which as a minimum, shall include:

i. Date and duration of malfunction or breakdown;

ii. A detailed explanation of the malfunction or breakdown;

iii. An explanation why the damaged feature(s) could not be immediately repaired or the knockout drums on the low pressure flare system removed from service without risk of injury to personnel or severe damage to equipment;

iv. The measures used to reduce the quantity of emissions and the duration of the event;

v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and

vi. The amount of release above typical emissions during malfunction/breakdown.

7.10.10 Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Unit of noncompliance with the control and operating requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

Emissions of NO_x, CO, or VOM from the affected inlet separator in excess of the limits specified in Condition 7.10.6 based on the 12 months rolling period.

a. Reporting of Malfunctions and Breakdowns for knockout drums on the low pressure flare system

The Permittee shall provide the following notification and reports to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of a cyrogenic ground flare (burn pit) subject to Condition 7.10.3(c) during malfunction or breakdown of the knockout drums on the low pressure flare system.

i. The Permittee shall notify the Illinois EPA’s regional office by telephone as soon as possible during normal working hours, but no later than one (1) day, upon the occurrence of noncompliance due to malfunction or breakdown.

ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the

Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the cyrogenic ground flare system (burn pit) was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the knockout drums on the low pressure flare system in conjunction with the burn pit were taken out of service.

iii. If compliance is not achieved within 4 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete. The unit will be taken out of service if operation beyond the extension deadline is required.

7.10.11 Operational Flexibility/ Anticipated Operating Scenarios

N/A

7.10.12 Compliance Procedures

a. Emissions from the flares shall be calculated based on the following emission factors:

Pollutant	Emission Factor ($lb/10^6\ ft^3$)
NO_x	0.68
CO	0.37
VOM*	0.00972

These are the emission factors from Flare Operations, Tables 13.5-1, 13.5-2, AP-42, Volume I, Supplement D, January, 1995.

Flare Emissions** (ton) = natural gas consumed multiplied by the appropriate emission factor/2000.

b. Compliance of the affected inlet separator with Condition 7.10.3(b) is assured by the operation of the flares as control equipment so that no compliance procedures are set in this permit addressing this requirement.

* Per Title 5 permit application, VOM factor is based upon the AP-42 factor of 0.14 lb 10^6 Btu multiplied by the VOM weight percentage of 6.664 % for a factor of 0.00072 lb/mmBtu.

** Per Title 5 permit application, flare emissions are calculated by typical pilot and purge gas usage with the standard heater factors. High pressure flare has a purge rate of 4,000 cf/hr and a pilot rate of 325 cf/hr. Low pressure flare has a purge, pilot and emission rate from V704 of 3,380 cf/hr. Ground flare has a purge rate of 225 cf/hr.

7.11 Unit 11: Fugitive VOM Emissions from Pumps, PRV, Valves, Open Ended Valve or Line, Fittings and Various Fittings
Control: Leak Detection and Repair Program

7.11.1 Description

The processes of Extraction, Ethane Recovery, Fractionation, Storage, and Loading are comprised of pumps in light liquid service, pressure relief valves (PRV) in gas/vapor service, open-ended valve or line, valves, all fittings, and various fittings. The processes make up the units that are this natural gas processing plant's sources of fugitive VOM emissions. While these individual fittings and processes at the plant emit insignificant amounts of VOM emissions, the sum of the thousands of fittings are the primary source of VOC emissions at the plant. The procedures outlined in ***Protocol for Equipment Leak Emission Estimates*** (USEPA, 1995) were used to determine fugitive VOC emission rates for the plant. The NSPS for natural gas processing plants, 40 CFR 60, Subpart KKK, Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants requires that a Leak Detection and Repair (LDAR) program be instated. Expected levels of control for the LDAR were calculated using the method developed in Protocol for Equipment Leak Emission Estimates (USEPA, 1995).

7.11.2 List of Emission Units and Pollution Control Equipment

Emission Unit	Description	Date Constructed	Control
Fugitive VOM Emissions	Natural Gas Procession Plant	2000	Leak Detection and Repair Program

7.11.3 Applicability Provisions and Applicable Regulations

a. The "affected natural gas processing plant", for the purpose of these unit-specific conditions, is the emission unit described in section 7.11.1 and 7.11.2.

b. The affected natural gas processing plant is subject to 40 CFR 60, Subpart KKK, Standards of Performance for Equipment Leaks of VOC From Onshore Natural Gas Processing Plants, since the affected natural gas processing plant is an onshore natural gas processing plant.

c. The affected natural gas processing plant is subject to 40 CFR 60 Subpart LLL, Standards of Performance for Onshore Natural Gas Processing since the affected natural gas processing plant is a an onshore natural gas processing plant; facilities that have a design capacity less than 2 long tons per day (LT/D) of hydrogen sulfide (H_2S) in the acid gas (expressed as sulfur) are required to keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 LT/D of H_2S expressed as sulfur per 40 CFR 60.647(c), but are not required to comply with 40 CFR 60.642 (standards for sulfur dioxide), 40 CFR 60.643 (compliance provisions), 40 CFR 60.644 (test methods and procedures), 40 CFR 60.645 (reserved), and 40 CFR 60.646 (monitoring of emissions and operations). [40 CFR 60.640(b)].

d. Malfunction and Breakdown Provisions

When an over pressure situation occurs, the pipeline gas may be vented to the atmosphere for a period not exceeding 10 seconds. This condition applies to malfunction or breakdown. The Permittee shall operate in violation of the applicable requirement of Condition 7.11.3(b), (c), and (d), as necessary to prevent risk of injury to personnel or severe damage to equipment. This authorization is subject to the following requirements:

i. The Permittee shall repair the damaged feature(s) of the natural gas processing plant or remove the natural gas processing plant from service as soon as practicable. This shall be accomplished within one day unless the feature(s) can not be repaired within one day and the natural gas processing plant can not be removed from service within one day, and the Permittee obtains an extension, for up to two days, from the Illinois EPA. The request for such an extension must document that natural gas processing plant replacement parts are unavailable and specify a schedule of actions the Permittee will take that will assure the feature(s) will be repaired or the natural gas processing plant as soon as possible.

ii. The Permittee shall fulfill the applicable recordkeeping and reporting requirements of Conditions 7.1.9(b) and 7.1.10(a).

7.11.4 Non-Applicability of Regulations of Concern

None

7.11.5 Operational and Production Limits and Work Practices

For Compressors:

a. Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere [40 CFR 60.482-3(a)].

b. Each compressor seal system as required in Condition 7.11.5(a) shall be:

i. Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure [40 CFR 60.482-3(b)(1)]; or

ii. Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of 40 VFR §60.482-10 [40 CFR 60.482-3(b)(2)]; or

iii. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere [40 CFR 60.482-3(b)(3)]

c. The barrier fluid system shall be in heavy liquid service or shall not be in VOC service [40 CFR 60.482-3(c)]

d. Each barrier fluid system as described in Condition 7.11.5(a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both [40 CFR 60.482-3(d)]

e. i. Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an audible alarm. [40 CFR 60.482-3(e)]

ii. The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-3(e)(2)]

f. If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected. [40 CFR 60.482-3(f)]

g. i. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR §60.482-9; [40 CFR 60.482-3(g)]

ii. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-3(g)(2)]

For Pumps:

h. Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of monthly monitoring to detect leaks by the methods specified in 40 CFR §60.485(b), *Provided* the following requirements of 40 CFR 60.482-2(d) through are met: [40 CFR 60.482-2(d)]

i. Each dual mechanical seal system is

A. Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or [40 CFR 60.482-2(d)(1)(i)]

B. Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of 40 CFR §60.482-10; or [40 CFR 60.482-2(d)(1)(ii)]

C. Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere. [40 CFR 60.482-2(d)(1)(iii)]

ii. The barrier fluid system is in heavy liquid service or is not in VOC service [40 CFR 60.482-2(d)(2)]

iii. Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(3)]

iv. Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals. [40 CFR 60.482-2(d)(4)]

v. A. Each sensor as described in Condition h(i)(c)(iii) is checked daily or is equipped with an audible alarm, and [40 CFR 60.482-2(d)(5)]

B. The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both. [40 CFR 60.482-2(d)(5)(ii)]

vi. A. If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph 40 CFR 60.482-2(d)(5)(ii), a leak is detected. [40 CFR 60.482-2(d)(6)]

B. When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in 40 CFR §60.482-9. [40 CFR 60.482-2(d)(6)(ii)]

C. A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. [40 CFR 60.482-2(d)(6)(iii)]

For Pressure Relief Valves in gas/vapor service

i. Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in 40 CFR §60.485(c). [40 CFR 60.482-4(a)]

j. i. After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in 40 CFR §60.482-9; [40 CFR 60.482-4(b)]

ii. No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in 40 CFR §60.485(c). [40 CFR 60.482-4(b)(2)]

k. Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in 40 CFR §60.482-10 is exempted from the requirements of 40 CFR 60.482-4(a) and 40 CFR 60.482-4(b). [40 CFR 60.482-4(c)]

l. i. Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of 40 CFR 60.482-4(a) and 40 CFR 60.482-4(b), provided the owner or operator complies with the requirements (ii) below; [40 CFR 60.482-4(d)]

ii. After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in 40 CFR §60.482-9. [40 CFR 60.482-4(d)(2)]

Open-ended valve or line

m. i. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in 40 CFR §60.482-1(c). [40 CFR 60.482-6(a)]

ii. The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line. [40 CFR 60.482-6(a)(2)]

n. Each open-ended valve or line equipped with a second valve shall be operated in a manner such that the valve on the process fluid end is closed before the second valve is closed. [40 CFR 60.482-6(b)]

o. When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph 40 CFR 60.482-6(a) at all other times. [40 CFR 60.482-6(c)]

p. Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of 40 CFR 60.482-6(a), 40 CFR 60.482-6(b) and 40 CFR 60.482-6(c). [40 CFR 60.482-6(d)]

q. Open-ended valves or lines containing materials which would auto catalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in 40 CFR 60.482-6(a) through (c) are exempt from the requirements of 40 CFR 60.482-6(a) through (c) of this section. [40 CFR 60.482-6(e)]

For Valves in gas/vapor service in light liquid service:

r. i. The Permittee shall install valves that are designated, as described in 40 CFR §60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, exempt from the requirements of 40 CFR 60.482-7(a), which requires monthly monitoring to detect leaks by

the methods specified in 40 CFR §60.485(b) and compliance with paragraphs (b) through (e) of 40 CFR 60.482-7, Standards: Valves in gas/vapor service in light liquid service, if each valve; [40 CFR 60.482-7(f)]

ii. Has no external actuating mechanism in contact with the process fluid, [40 CFR 60.482-7(f)(1)]

ii. Is operated with emissions less than 500 ppm above background as determined by the method specified in 40 CFR §60.485(c), and [40 CFR 60.482-7(f)(2)]

iii. Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator. [40 CFR 60.482-7(f)(3)]

Leaks:

s. Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section. [40 CFR 60.482-10(g)]

i. A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. [40 CFR 60.482-10(g)(1)]

ii. Repair shall be completed no later than 15 calendar days after the leak is detected. [40 CFR 60.482-10(g)(2)]

t. Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown. [40 CFR 60.482-10(h)]

7.11.6 Emission Limitations

In addition to Condition 5.2.2 and the source-wide emission limitations in Condition 5.5, the affected natural gas processing plant and is subject to the following:

Emissions and operation of the following equipment shall not exceed the following limits:

Emission Unit	Natural Gas Processed Billion (Standard Cubic Feet)	VOM Emissions (Lb/Day)	(T/Yr)
Fugitive VOM Emissions from Individual Fittings	2.5 Per Day 912.5 Per Year	60	10.2

These limits are based on standard emission factors and maximum operation. Compliance with annual limits shall be determined from a running total of 12 months of data.

The above limitations were established in Permit 98080090, pursuant to 35 IAC Part 203. These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically 35 IAC Part 203 [T1].

7.11.7 Testing Requirements

a. The owner or operator shall determine compliance with the standards in 40 CFR §§60.482, 60.483, and 60.484 as follows: [40 CFR 60.485(b)]

i. Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used: [40 CFR 60.485(b)(1)]

A. Zero air (less than 10 ppm of hydrocarbon in air); and [40 CFR 60.485(b)(1)(i)]

B. A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane. [40 CFR 60.485(b)(1)(ii)]

b. The owner or operator shall determine compliance with the no detectable emission standards in 40 CFR §§60.482-2(e), 60.482-3(i), 60.482-4, 60.482-7(f), and 60.482-10(e) as follows: [40 CFR 60.485(c)]

   i. The requirements of 40 CFR 60.485(b) shall apply. [40 CFR 60.485(c)(1)]

   ii. Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance. [40 CFR 60.485(c)(2)]

c. The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used: [40 CFR 60.485(d)]

   i. Procedures that conform to the general methods in ASTM E260-73, 91, or 96, E168-67, 77, or 92, E169-63, 77, or 93 (incorporated by reference-see 40 CFR §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment. [40 CFR 60.485(d)(1)]

   ii. Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid. [40 CFR 60.485(d)(2)]

   iii. Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement. [40 CFR 60.485(d)(3)]

d. The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply: [40 CFR 60.485(e)]

i. The vapor pressure of one or more of the components is greater than 0.3 kPa at 20°C (1.2 in. H_20 at 68°F. Standard reference texts or ASTM D2879-83, 96, or 97 (incorporated by reference-see 40 CFR §60.17) shall be used to determine the vapor pressures. [40 CFR 60.485(e)(1)]

ii. The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20°C (1.2 in. H_20 at 68°F is equal to or greater than 20 percent by weight. [40 CFR 60.485(e)(2)]

iii. The fluid is a liquid at operating conditions. [40 CFR 60.485(e)(3)]

e. Samples used in conjunction with 40 CFR 60.485(d), 40 CFR 60.485(e), and 40 CFR 60.485(g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare. [40 CFR 60.485(f)]

7.11.8 Monitoring Requirements

Pumps and valves in heavy liquid service, pressure relief valves in light liquid or heavy liquid service and flanges and other connectors shall be monitored within 5 days by the method specified in 40 CFR 60.485(b) if evidence of a potential leak is found by visual, audible, olfactory, or other inspection methodology pursuant to 40 CFR 60.482-8.

7.11.9 Recordkeeping Requirements

The Permittee shall maintain records of the following items to demonstrate compliance with Conditions 5.5.1, and 40 CFR 60, Subpart VV pursuant to Section 39.5(7)(b) of the Act:

a. The following information pertaining to the design requirements for closed vent systems and control devices described in 40 CFR §60.482-10 shall be recorded and kept in a readily accessible location: [40 CFR 60.486(d)]

i. Detailed schematics, design specifications, and piping and instrumentation diagrams. [40 CFR 60.486(d)(1)]

ii. The dates and descriptions of any changes in the design specifications. [40 CFR 60.486(d)(2)]

iii. A description of the parameter or parameters monitored, as required in §60.482-10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring. [40 CFR 60.486(d)(3)]

iv. Periods when the closed vent systems and control devices required in §§60.482-2, 60.482-3, 60.482-4, and 60.482-5 are not operated as designed, including periods when a flare pilot light does not have a flame. [40 CFR 60.486(d)(4)]

v. Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482-2, 60.482-3, 60.482-4, and 60.482-5. [40 CFR 60.486(d)(5)]

b. The following information pertaining to all equipment subject to the requirements in §§60.482-1 to 60.482-10 shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(e)]

i. A list of identification numbers for equipment subject to the requirements of this subpart. [40 CFR 60.486(e)(1)]

ii. A. A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482-2(e), 60.482-3(i) and 60.482-7(f). [40 CFR 60.486(e)(2)]

B. The designation of equipment as subject to the requirements of §60.482-2(e), §60.482-3(i), or §60.482-7(f) shall be signed by the owner or operator. [40 CFR 60.486(e)(2)(ii)]

iii. A list of equipment identification numbers for pressure relief devices required to comply with 40 CFR §60.482-4. [40 CFR 60.486(e)(3)]

iv. A. The dates of each compliance test as required in 40 CFR §§60.482-2(e), 60.482-3(i), 60.482-4, and 60.482-7(f). [40 CFR 60.486(e)(4)]

B. The background level measured during each compliance test. [40 CFR 60.486(e)(4)(ii)]

C. The maximum instrument reading measured at the equipment during each compliance test. [40 CFR 60.486(e)(4)(iii)]

v. A list of identification numbers for equipment in vacuum service. [40 CFR 60.486(e)(5)]

c. The following information shall be recorded in a log that is kept in a readily accessible location: [40 CFR 60.486(h)]

i. Design criterion required in §§60.482-2(d)(5) and 60.482-3(e)(2) and explanation of the design criterion; and [40 CFR 60.486(h)(1)]

ii. Any changes to this criterion and the reasons for the changes. [40 CFR 60.486(h)(2)]

d. Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location. [40 CFR 60.486(j)]

e. To certify that a affected natural gas procession plant is exempt from the control requirements of 40 CFR 60 Subpart LLL, Standards for Onshore Natural Gas Processing Plants, the facility with a design capacity less that 2 Long Ton/Day of H_2S in the acid gas (expressed as sulfur) shall keep, for the life of the facility, an analysis demonstrating that the facility's design capacity is less than 2 Long Ton/Day of H_2S expressed as sulfur.

f. Records for Malfunctions and Breakdowns of the affected natural gas processing plant.

The Permittee shall maintain records, pursuant to 35 IAC 201.263, of continued operation of the affected natural gas processing plant subject to Condition 7.11.3(b), (c), and (d) during malfunctions and breakdown of the control features of the natural gas processing plant, which as a minimum, shall include:

i. Date and duration of malfunction or breakdown;

ii. A detailed explanation of the malfunction or breakdown;

iii. An explanation why the damaged feature(s) could not be immediately repaired or the natural gas processing plant removed from service without risk of injury to personnel or severe damage to equipment;

iv. The measures used to reduce the quantity of emissions and the duration of the event;

v. The steps taken to prevent similar malfunctions or breakdowns or reduce their frequency and severity; and

vi. The amount of release above typical emissions during malfunction/breakdown.

g. The number of each type of component in the affected natural gas processing plant (valve, connector, etc.).

h. The service each component is in (gas, light liquid, etc.).

i. The VOC concentration of the stream.

j. The time period each component will be in service.

7.11.10 Reporting Requirements (include reporting of deviations from limits)

The Permittee shall promptly notify the Illinois EPA, Compliance Section of noncompliance with applicable control and operating requirements as follows pursuant to Section 39.5(7)(f)(ii) of the Act:

a. The Permittee shall submit all applicable reports for the affected natural gas processing plant as specified in 40 CFR 60, Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, Subsection 60.487, Reporting Requirements.

b. Reporting of Malfunctions and Breakdowns for the affected natural gas processing plant.

The Permittee shall provide the following notification and reports to the Illinois EPA, Compliance Section and Regional Field Office, pursuant to 35 IAC 201.263, concerning continued operation of the affected natural gas processing plant subject to Condition 7.1.3(b), (c), and (d) during malfunction or breakdown of the control features of the natural gas processing plant.

i. The Permittee shall notify the Illinois EPA's regional office by telephone as soon as possible during normal working hours, but no later than three (3) days, upon the occurrence of noncompliance due to malfunction or breakdown.

ii. Upon achievement of compliance, the Permittee shall give a written follow-up notice to the Illinois EPA, Compliance Section and Regional Field Office, providing a detailed explanation of the event, an explanation why continued operation of the natural gas processing plant was necessary, the length of time during which operation continued under such conditions, the measures taken by the Permittee to minimize and correct deficiencies with chronology, and when the repairs were completed or when the natural gas processing plant was taken out of service.

iii. If compliance is not achieved within 5 working days of the occurrence, the Permittee shall submit interim status reports to the Illinois EPA, Compliance Section and Regional Field Office, within 5 days of the occurrence and every 14 days thereafter, until compliance is achieved. These interim reports shall provide a brief explanation of the nature of the malfunction or breakdown, corrective actions

accomplished to date, actions anticipated to occur with schedule, and the expected date on which repairs will be complete or the natural gas processing plant will be taken out of service.

c. Emissions of VOM from the affected natural gas processing plant in excess of the limits specified in Condition 7.11.6 based on the 12 months rolling period

7.11.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.11.12 Compliance Procedures

a. Compliance with the emission limits in Conditions 5.5.1, 5.5.3, and 7.11.6 shall be based on the recordkeeping requirements in Condition 7.11.9 and the emission factors and formulas listed below:

i. The average emission factors for oil and gas production operations (Table 2-4 of Protocol for Equipment Leak Emission Estimates, 1995) were used for calculating fugitive VOC emissions for all fittings except valves. The following equation was used utilizing the fugitive emission factors:

$$E_{VOC} = F_A \text{ X } WF_{VOC} \text{ X N X } 2.20 \text{ lb/kg}$$

Where:

E_{VOC} = Emission rate of VOC from all equipment in the stream of a given equipment type (lb/hr)

F_A = Applicable average emission factor for the equipment type (kg/hr/source) from table 2-4 of Protocol for Equipment Leak Emission Estimates, 1995.

WF_{VOC} = Average weight fraction of VOC in the stream

N = Number of pieces of equipment of the applicable equipment in the stream.

ii. For valves, a leak rate is determined from the following equation (Table 2-10, Protocol for Equipment Leak Emission Estimates, 1995)

$$\text{Leak Rate (kg/hr/valve)} = 2.29 \times 10^{-6} \times (SV)^{0.746}$$

Where:

SV = Screening value in ppm (assumed 500 ppm for PTE purposes; also, this is the value certified by the manufactured that will not be exceeded for 100,000 cycles)

iii. Calculations of leak detection and repair control (LDAR) effectiveness are based on the methods in Protocol for Equipment Leak Emission Estimates, 1995, USEPA. LDAR is applied to pumps and valves.

b. Calculations of LDAR control effectiveness are based on the methods in: USEPA (1995): 1995 *Protocol for Equipment Leak Emission Estimates*. United States Environmental Protection Agency, OAQPS, RTP, N.C.

1.0 LDAR will be looked at for pumps and valves (both liquid and gas)

2.0 The emission rate prior to implementing the LDAR is assumed to be the emission rate predicted by the average emission rate factor used in calculating the uncontrolled emissions for a fitting.

3.0 Average emission factors for:

Pumps – 1.3×10^{-2} kg/hr
Valves (gas) – 4.5×10^{-3} kg/hr
Valves (liquid) – 2.5×10^{-3} kg/hr
Flanges (gas) - 3.9×10^{-4} kg/hr
Flanges (liquid) – 1.10×10^{-4} kg/hr

4.0 The initial leak frequency is assumed to be equivalent to the leak frequency associated with the applicable average emission factor.

5.0 The key parameters for estimating the control effectiveness are:

a. The leak definition (10,000 ppm, 5,000 ppm, etc.);

b. The initial leak frequency; and

c. The final or steady state leak frequency.

6.0

Leak Definition	Initial Leak Fraction
10,000 ppm	0.125
5,000 ppm	0.125
2,000 ppm	0.156
1,000 ppm	0.163
500 ppm	0.182

Gas Valves

Leak Definition	Initial Leak Fraction
10,000 ppm	0.046
5,000 ppm	0.049
2,000 ppm	0.054
1,000 ppm	0.059
500 ppm	0.064

Liquid Valves

Leak Definition	Initial Leak Fraction
10,000 ppm	0.029
5,000 ppm	0.030
2,000 ppm	0.033
1,000 ppm	0.036
500 ppm	0.042

Flanges (Gas)

Leak Definition	Initial Leak Fraction
10,000 ppm	0.005

Flanges (Liquid)

Leak Definition	Initial Leak Fraction
10,000 ppm	0.001

7.0 The leak frequency after a monitoring cycle is determined as follows:

$Y_i = Z_i - (FR \times Z_i) + (FR \times Z_i \times R)$

Where:

Y_i = Leak fraction immediately after monitoring cycle i;

Z_i = Leak fraction immediately preceding monitoring cycle i (note that Z_i equals point X);

R = Fraction of repaired sources for which a leak immediately recurs; and

FR = Fraction of leaking sources successfully repaired.

8.0 Point Z is the leak frequency immediately preceding equipment monitoring. After a LDAR program is implemented for a given time period, point Z will reach a “steady-state” value. To go from point Y to point Z the occurrence rate is added to point Y. The occurrence rate equals the percentage of initially nonleaking equipment that starts to leak between monitoring cycles. The following equation is used to go from point Y to point Z:

$Z_{i+1} = Oc \times (1 - Y_i)\ Y_i$

Where:

Z^{i+1} = Leak fraction immediately preceding monitoring cycle i+1

Oc = Fraction of nonleaking sources which will leak in the time period between monitoring cycles (i.e. occurrence rate); and

Y_i = Leak fraction immediately after monitoring cycle i.

9.0 After several monitoring cycles, the leak frequency will be found to approximately oscillate between points Y and Z. The average value of these two “steady-state” values is the final leak frequency. The final leak

frequency is the average percent of sources that are still leaking after a LDAR program has been implemented.

After the initial and final leak frequencies are determined, they can be entered into the applicable equations from Table 5-7 (USEPA, 1995) to calculate the associated average leak rates at these leak frequencies. Based on the initial leak rate and the final leak rate, the control effectiveness for a LDAR program can be calculated. The control effectiveness is calculated as:

Eff = (ILR – FLR)/ILR x 100

Where:

Eff = Control effectiveness (percent);

ILR = Initial leak rate (kg/hr/source); and

FLR = Final leak rate (kg/hr/source).

10.0 The USEPA (1995) concluded that recurrence rate and unsuccessful repair rate for pumps was zero percent (Appendix G). The occurrence rate determined to be 0.47 x the initial leak fraction. For valves the USEPA (1995) concluded that the recurrence rate of valves was 14 percent and the unsuccessful repair rate was 10 percent. Estimates of the occurrence rate are based on the NSPS performance level of 2% for leaking valves.

Pump emissions (lb/hr) = E_{VOC} X (1 – (LDAR effectiveness from attachment 1/100))

Valve emissions (lb/hr) = Leak Rate X (1 – (LDAR effectiveness from attachment 1/100))

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after _____**{insert public notice start date}** (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms

without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

a. The changes do not violate applicable requirements;

b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

c. The changes do not constitute a modification under Title I of the CAA;

d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and

e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:

i. Describe the physical or operational change;

ii. Identify the schedule for implementing the physical or operational change;

iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;

iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and

v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions,

methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

If monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

Monitoring Period	Report Due Date
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

a. The name and identification of the affected unit(s);

b. The person(s) who will be performing sampling and analysis and their experience with similar tests;

c. The specific conditions under which testing will be performed, including a discussion of why these conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;

d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;

e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;

f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and

g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

a. The name and identification of the affected unit(s);

b. The date and time of the sampling or measurements;

c. The date any analyses were performed;

d. The name of the company that performed the tests and/or analyses;

e. The test and analytical methodologies used;

f. The results of the tests including raw data, and/or analyses including sample calculations;

g. The operating conditions at the time of the sampling or measurements; and

h. The name of any relevant observers present including the testing company's representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:

i. Illinois EPA - Air Compliance Section

Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
9511 West Harrison
Des Plaines, Illinois 60016

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AE - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 (“Title I provisions”) and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;

b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and

d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7)(a) and (p)(ii) of the Act and 415 ILCS 5/4]:

a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

d. Sample or monitor any substances or parameters at any location:

i. At reasonable times, for the purposes of assuring permit compliance; or

ii. As otherwise authorized by the CAA, or the Act.

e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and

f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or

resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12)(b)(iv) of the Act].

9.6.3 Retention of Records

a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for

continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7)(e)(ii) of the Act].

b. Other records required by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7)(p)(v) of the Act, the Permittee shall submit annual compliance certifications. The compliance certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 – Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.

b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.

c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:

i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency. Normally, an act of God such as lightning or flood is considered an emergency;

ii. The permitted source was at the time being properly operated;

iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and

iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.

b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;

b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;

c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations, or other terms or conditions of this permit; and

d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15)(b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7)(o)(v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7)(i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal application. For a renewal to be timely it must be submitted no later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5)(l), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1 Emission Limits from Permit 98080090

Combined emissions and operation of the equipment listed shall not exceed the following:

Item of Equipment	Maximum Firing Rate (mmBtu/Hr)	Pollutant	Emissions (Tons/Mo)	Emissions (Tons/Yr)
1C201 Gas Turbine	228.6	NO_x	30	228.7
2C201 Gas Turbine	228.6	CO	30	237.8
		PM	10	94.1
501A HTF Heater	175.5	VOM	2	11.0
501B HTF Heater	175.5			
1H101 Inlet Regeneration Gas Heater	13.0			
2H101 Inlet Regeneration Gas Heater	13.0			
H601 Regeneration Gas Heater	4.0			
H602 Regeneration Gas Heater	4.0			
H301 Amine Regeneration Gas Heater	17.1			
Low-Pressure Flare When Flaring the Ethane Sulfur Removal Molecular Sieve				

These limits are based on standard emission factors, maximum operation and data from manufacturer. Compliance with annual limits shall be determined from a running total of 12 months of data.

The above limitations were established in Permit 98080090, pursuant to Title I of the Clean Air Act, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to these rules. [T1]

10.2 Attachment 2 Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

10.3 Attachment 3 Guidance on Revising This Permit

The Permittee must submit an application to the Illinois EPA using the appropriate revision classification in accordance with Sections 39.5(13) and (14) of the Act and 35 IAC 270.302. Specifically, there are currently three classifications for revisions to a CAAPP permit. These are:

1. Administrative Permit Amendment;

2. Minor Permit Modification; and

3. Significant Permit Modification.

The Permittee must determine, request, and submit the necessary information to allow the Illinois EPA to use the appropriate procedure to revise the CAAPP permit. A brief explanation of each of these classifications follows.

1. Administrative Permit Amendment

- Corrects typographical errors;
- Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- Requires more frequent monitoring or reporting by the Permittee;
- Allows for a change in ownership or operational control of the source where no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the Illinois EPA. This shall be handled by completing form 272-CAAPP, REQUEST FOR OWNERSHIP CHANGE FOR CAAPP PERMIT; or
- Incorporates into the CAAPP permit a construction permit, provided the conditions of the construction permit meet the requirements for the issuance of CAAPP permits.

2. Minor Permit Modification

- Do not violate any applicable requirement;
- Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- Do not require a case-by-case determination of an emission limitation or other standard, or a source-specific determination of ambient impacts, or a visibility or increment analysis;
- Do not seek to establish or change a permit term or condition for which there is no corresponding underlying requirement and which avoids an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
    - A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the CAA; and
    - An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA.
- Are not modifications under any provision of Title I of the CAA;
- Are not required to be processed as a significant permit modification; and
- Modifications involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches.

An application for a minor permit modification shall include the following:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
- The source's suggested draft permit/conditions;

- Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and

- Information as contained on form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT for the Illinois EPA to use to notify USEPA and affected States.

3. Significant Permit Modification

- Applications that do not qualify as either minor permit modifications or as administrative permit amendments;

- Applications requesting a significant change in existing monitoring permit terms or conditions;

- Applications requesting a relaxation of reporting or recordkeeping requirements; and

- Cases in which, in the judgment of the Illinois EPA, action on an application for modification would require decisions to be made on technically complex issues.

An application for a significant permit modification shall include the following:

- A detailed description of the proposed change(s), including all physical changes to equipment, changes in the method of operation, changes in emissions of each pollutant, and any new applicable requirements which will apply as a result of the proposed change. Note that the Permittee need only submit revised forms for equipment and operations that will be modified.

The Illinois EPA requires the information on the following appropriate forms to be submitted in accordance with the proper classification:

- Form 273-CAAPP, REQUEST FOR ADMINISTRATIVE PERMIT AMENDMENT FOR CAAPP PERMIT; or

- Form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT; or

- Form 200-CAAPP, APPLICATION FOR CAAPP PERMIT (for significant modification).

Application forms can be obtained from the Illinois EPA website at http://www.epa.state.il.us/air/forms.

Note that the request to revise the permit must be certified for truth, accuracy, and completeness by a responsible official.

Note that failure to submit the required information may require the Illinois EPA to deny the application. The Illinois EPA reserves the right to require that additional information be submitted as needed to evaluate or take final action on applications pursuant to Section 39.5(5)(g) of the Act and 35 IAC 270.305.

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Application For Construction Permit (For CAAPP Sources Only)	For Illinois EPA use only
	ID number:
	Permit number:
	Date received:

This form is to be used by CAAPP sources to supply information necessary to obtain a construction permit. Please attach other necessary information and completed CAAPP forms regarding this construction/modification project.

Source Information

1. Source name:		
2. Source street address:		
3. City:		4. Zip code:
5. Is the source located within city limits?		☐ Yes ☐ No
6. Township name:	7. County:	8. ID number:

Owner Information

9. Name:		
10. Address:		
11. City:	12. State:	13. Zip code:

Operator Information (if different from owner)

14. Name		
15. Address:		
16. City:	17. State:	18. Zip code:

Applicant Information

19. Who is the applicant? ☐ Owner ☐ Operator	20. All correspondence to: (check one) ☐ Owner ☐ Operator ☐ Source
21. Attention name and/or title for written correspondence:	
22. Technical contact person for application:	23. Contact person's telephone number:

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Summary Of Application Contents

24.	Does the application address whether the proposed project would constitute a new major source or major modification under each of the following programs: a) Non-attainment New Source Review – 35 IAC Part 203; b) Prevention of Significant Deterioration (PSD) – 40 CFR 52.21; c) Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources – 40 CFR Part 63?	☐ Yes ☐ No
25.	Does the application identify and address all applicable emissions standards, including those found in the following: a) Board Emission Standards – 35 IAC Chapter I, Subtitle B; b) Federal New Source Performance Standards – 40 CFR Part 60; c) Federal Standards for Hazardous Air Pollutants – 40 CFR Parts 61 and 63?	☐ Yes ☐ No
26.	Does the application include a process flow diagram(s) showing all emission units and control equipment, and their relationship, for which a permit is being sought?	☐ Yes ☐ No
27.	Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?	☐ Yes ☐ No
28.	Does the application include the information as contained in completed CAAPP forms for all appropriate emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements, and identifying and describing any outstanding legal actions by either the USEPA or the Illinois EPA? Note: The use of "APC" application forms is not appropriate for applications for CAAPP sources. CAAPP forms should be used to supply information.	☐ Yes ☐ No
29.	If the application contains TRADE SECRET information, has such information been properly marked and claimed, and have two separate copies of the application suitable for public inspection and notice been submitted, in accordance with applicable rules and regulations?	☐ Yes ☐ No ☐ Not Applicable, No TRADE SECRET information in this application

Note 1: Answering "No" to any of the above may result in the application being deemed incomplete.

Signature Block

This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.

30. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete.

Authorized Signature:

BY:

_____ _____
AUTHORIZED SIGNATURE TITLE OF SIGNATORY

_____ _____ / _____ / _____
TYPED OR PRINTED NAME OF SIGNATORY DATE

Note 2: An operating permit for the construction/modification permitted in a construction permit must be obtained by applying for the appropriate revision to the source's CAAPP permit, if necessary.

10.5 Attachment 5 Guidance on Renewing This Permit

Timeliness - Pursuant to Section 39.5(5)(n) of the Act and 35 IAC 270.301(d), a source must submit to the Illinois EPA a complete CAAPP application for the renewal of a CAAPP permit not later than 9 months before the date of permit expiration of the existing CAAPP permit in order for the submittal to be deemed timely. Note that the Illinois EPA typically sends out renewal notices approximately 18 months prior to the expiration of the CAAPP permit.

The CAAPP application must provide all of the following information in order for the renewal CAAPP application to be deemed complete by the Illinois EPA:

1. A completed renewal application form 200-CAAPP, APPLICATION FOR CAAPP PERMIT.

2. A completed compliance plan form 293-CAAPP, COMPLIANCE PLAN/SCHEDULE OF COMPLIANCE FOR CAAPP PERMIT.

3. A completed compliance certification form 296-CAAPP, COMPLIANCE CERTIFICATION, signed by the responsible official.

4. Any applicable requirements that became effective during the term of the permit and that were not included in the permit as a reopening or permit revision.

5. If this is the first time this permit is being renewed and this source has not yet addressed CAM, the application should contain the information on form 464-CAAPP, COMPLIANCE ASSURANCE MONITORING (CAM) PLAN.

6. Information addressing any outstanding transfer agreement pursuant to the ERMS.

7. a. If operations of an emission unit or group of emission units remain unchanged and are accurately depicted in previous submittals, the application may contain a letter signed by a responsible official that requests incorporation by reference of existing information previously submitted and on file with the Illinois EPA. This letter must also include a statement that information incorporated by reference is also being certified for truth and accuracy by the responsible official's signing of the form 200-CAAPP, APPLICATION FOR CAAPP PERMIT and the form 296-CAAPP, COMPLIANCE CERTIFICATION. The boxes should be marked

yes on form 200-CAAPP, APPLICATION FOR CAAPP PERMIT, as existing information is being incorporated by reference.

b. If portions of current operations are not as described in previous submittals, then in addition to the information above for operations that remain unchanged, the application must contain the necessary information on all changes, e.g., discussion of changes, new or revised CAAPP forms, and a revised fee form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT, if necessary.

8. Information about all off-permit changes that were not prohibited or addressed by the permit to occur without a permit revision and the information must be sufficient to identify all applicable requirements, including monitoring, recordkeeping, and reporting requirements, for such changes.

9. Information about all changes made under 40 CFR 70.4(b)(12)(i) and (ii) that require a 7-day notification prior to the change without requiring a permit revision.

The Illinois EPA will review all applications for completeness and timeliness. If the renewal application is deemed both timely and complete, the source shall continue to operate in accordance with the terms and conditions of its CAAPP permit until final action is taken on the renewal application.

Notwithstanding the completeness determination, the Illinois EPA may request additional information necessary to evaluate or take final action on the CAAPP renewal application. If such additional information affects your allowable emission limits, a revised form 292-CAAPP, FEE DETERMINATION FOR CAAPP PERMIT must be submitted with the requested information. The failure to submit to the Illinois EPA the requested information within the time frame specified by the Illinois EPA, may force the Illinois EPA to deny your CAAPP renewal application pursuant to Section 39.5 of the Act.

Application forms may be obtained from the Illinois EPA website at http://www.epa.state.il.us/air/forms.html.

If you have any questions regarding this matter, please contact a permit analyst at 217/782-2113.

Mail renewal applications to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

I. INTRODUCTION

This source has applied for a Clean Air Act Permit Program (CAAPP) operating permit for its existing operation. The CAAPP is the program established in Illinois for the operating permits for significant stationary sources required by the federal Clean Air Act, as amended in 1990. The conditions in a CAAPP permit are enforceable by both the Illinois Environmental Protection Agency (Illinois EPA) and the USEPA.

Aux Sable Liquid Products L.P. is located at 6155 East US Route 6, in Morris. The source is a natural gas liquids processing plant. The facility produces quantities of propane, butane, iso-butane, and a pentanes plus liquid (composed of butane, iso-butane, pentane, iso-pentane, n-hexane, and heptane) in excess of the United States Environmental Protection Agency's Risk Management Plan (RMP) threshold planning quantities for flammable substances. The facility is considered a RMP program 3 facility. The natural gas liquids plant removes commercial grade ethane, propane, iso-butane, normal butane and a pentane plus product (condensate) from the natural gas stream being transported by Alliance Pipeline L.P. Processes include: extraction and demanthanization; ethane recovery; depropanization; debutanization and butane splitting. Other associated equipment includes compression equipment, process heaters, product storage for propane, butane, iso-butane, and a pentanes plus liquid. The prevention program based on this regulation includes the following: Employee Participation; Process Safety Information; Process Hazardous Analysis; Operating Procedures; Training; Contractor Safety; Contractor and Visitor Orientation; Pre-Job Startup Review; Mechanical Integrity; Code of Safe Practices; Management of Change; Incident Investigation; Emergency Planning and Response; and Compliance Audits. Mechanical Integrity includes ultrasonic testing of vessels and piping, material specifications, hydrotesting, and other applicable testing/treating procedures. Aux Sable liquid Products LP maintains an emergency response plan in compliance with local emergency response agencies. The worst case scenario is a release from a 30,000 barrel propane storage pressure sphere. The quantity of propane that could be released and contribute to the worst case scenario is estimated at 5,118,530 pounds (1,260,000 gallons), resulting in a vapor cloud explosion. The 1-psia overpressure could extend out to a distance of 1.39 miles from the pressure sphere. The distance was calculated using equation C-1 from the USEPA's RMP Offsite Consequence Analysis Guidance based on liquefied propane stored under pressure. The alternative release scenario is a vapor cloud explosion, which results in a 1-psia overpressure at a distance of 0.10 miles. This does not result in ay property impacts. The distance was calculated using the TNT equivalency method and assuming 3 % of the flammable vapor is assumed to participate in the explosion. The distance to a 1-psia overpressure was also calculated using the Multi Energy method of explosion overpressure calculation. The Multi Energy Method is considered more accurate for hydrocarbon vapor cloud explosions. Using this method, the distance to a 1-psia overpressure was 0.04 miles (no off property impacts). The alternative release scenario assumes that the plant by-pass stack vents for 10 seconds. The Aux Sable Liquid Products L.P. facility is a new state-of-the-art facility with the highest level of safety designed into the plant. As a new plant, it has had zero incidents within the past five years.

II. EMISSION UNITS

Significant emission units at this source are as follows:

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 01: Fuel Combustion Units	1H101 Regeneration Gas heater	08/99	Low NO_x Burners
	2H101 Regeneration Gas heater	08/99	Low NO_x Burners
	H301 Amine Regeneration Heater	8/99	Low NO_x Burners
	H601 Regeneration Gas Heater	8/99	None
	H602 Regeneration Gas Heater	8/99	None
Unit 02: Gas Turbines	1C202 Gas Turbine	8/1999	None
	2C202 Gas Turbine	8/1999	
Unit 03: Gas Treatment Units	Merox Treatment	8/1999	Merox Off-Gas Incinerator
	Amine Treatment	8/1999	Acid Gas Incinerator
Unit 04: Molecular Sieve	Molecular Sieve	8/2000	IN 507 Low Pressure Flare
Unit 05: V-704 Condensate (C5+) Liquid Storage Tank	V-704 Condensate (C5+) Liquid Storage Tank	7/1999	Low Pressure Flare
Unit 06: Heat Transfer Fluid Heaters	Two Natural Gas-Fired Heaters, Maximum Heat Input Capacity: 198 mmBtu/hr	8/99	Low NO_x Burners

Emission Unit	Description	Date Constructed	Emission Control Equipment
Unit 07: Engines - Fuel Oil Fired Internal Combustion Engines	Two Mitsubishi S12R-PTA- Fuel oil fired engines	3/00	None
Unit 08: Tanks	V-701 A V 701 B V 701 C V 701 D	3/00	Permanent Submerged Pipe Loading
	V-702 A V 702 B V 703 A V 703 B	7/99	Permanent Submerged Pipe Loading
	V 705 Off Specification Bullet	7/99	Permanent Submerged Pipe Loading
	TK 506 Methanol Storage Tank	8/00	Permanent Submerged Pipe Loading
	TK520 Gasoline Dispensing Tank		Permanent Submerged Pipe Loading
Unit 09: TK 501 Storage Tank	Fixed roof tank, capacity 119 m^3	3/00	Submerged Loading Pipe/Carbon Canister
Unit 10: Train # 1 - Inlet Separator	Inlet Separator	8/00	High and Low Pressure Flares, and Cryogenic Burn Pit (“ground flare”)
Unit 11: Fugitive VOM Emissions from Pumps, PRV, Valves, Open Ended Valves or Line, Fittings and Various Fittings	Pumps, PRV, Valves, Open Ended Valves or Line, Fittings and Various Fittings	2000	Leak Detection and Repair Program

III. EMISSIONS

This source is required to have a CAAPP permit since it is a major source of emissions.

For purposes of fees, the source is allowed the following emissions:

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	22.3
Sulfur Dioxide (SO_2)	241.2
Particulate Matter (PM)	95.1
Nitrogen Oxides (NO_x)	243.9
HAP, not included in VOM or PM	---
Total	602.5

This permit is a combined Title I/CAAPP permit that may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the Clean Air Act and regulations promulgated thereunder, including 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the permit by T1, T1R, or T1N. The source has requested that the Illinois EPA establish or revise such conditions in a Title I permit, consistent with the information provided in the CAAPP application. Any conditions established in a construction permit pursuant to Title I and not revised or deleted in this permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board’s emission standards. The Board's emission standards represent the basic requirements for sources in Illinois.

All emission sources in Illinois must comply with the federal New Source Performance Standards (NSPS). The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

All emission sources in Illinois must comply with the federal National Emission Standards for Hazardous Air Pollutants (NESHAP). The Illinois EPA is administering NESHAP in Illinois on behalf of the United States EPA under a delegation agreement.

V. PROPOSED PERMIT

CAAPP

A CAAPP permit contains all conditions that apply to a source and a listing of the applicable state and federal air pollution control regulations that are the origin of the conditions. The permit also contains emission limits and appropriate compliance procedures. The appropriate compliance procedures may include inspections, work practices, monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis.

Title I

A combined Title I/CAAPP permit contains terms and conditions established by the Illinois EPA pursuant to authority found in Title I provisions, e.g., 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Notwithstanding the expiration date on the first page of the permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source’s permit application meets the standards for issuance of a CAAPP permit. The Illinois EPA is therefore proposing to issue a CAAPP permit, subject to the conditions proposed in the draft permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 166.

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