



United States Environmental Protection Agency
Office of Enforcement and Compliance Assurance
Office of Criminal Enforcement, Forensics and Training

National Enforcement Investigations Center

NEIC

NEICVP1446E01

NEIC CIVIL INVESTIGATION REPORT

Indorama Ventures Oxides LLC

Port Neches Operations

Port Neches, Texas 77651

Investigation Dates:

October 17-21, 2022

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BUSTAMANTE**

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Armando Bustamante, Project Manager, NEIC

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APPENDICES (*NEIC-created document)

A	Process Description* (4 pages) [Contains Company-claimed Confidential Business Information (CBI)]
B	LDAR Monitoring Summary* (2 pages)
C	OGI Survey Images and Videos (file containing multiple videos and still images)
D	2018-2021 BWON TAB Reports (7 pages)
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F	Monthly Visual Inspection Records (74 pages)
G	2021 BWON LDAR Monitoring Records (12 pages)
H	Aromatic Distillate Sales Data from November 2, 2021-November 3, 2022 (14 pages)
I	Composition Data for Aromatic Distillate (2 pages)
J	November 3, 2022, Email from Indorama Re: Follow-up Records Request (8 pages)
K	Third-Party Compliance Audit (8 pages) [Contains Company-claimed CBI]
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M	NOCS for A3 Olefins Unit (60 pages)
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INVESTIGATION OVERVIEW

PROJECT OBJECTIVE

At the request of U.S. Environmental Protection Agency (EPA) Region 6 (Region), EPA's National Enforcement Investigations Center (NEIC) conducted a compliance investigation of the Indorama Ventures Oxides LLC – Port Neches Operations (Indorama) facility located at 2701 Spur 136, Port Neches, Texas 77651. The scope of the investigation included a review of Indorama's compliance with the Clean Air Act (CAA). The investigation focused on the ethylene and ethylene oxide production areas of the Indorama facility.

Table 1 lists the project team members.

Table 1. PROJECT TEAM MEMBERS		
Team Member	Organization	Project Role
Armando Bustamante	NEIC	Project manager (PM)
Brianna Leiker	NEIC	Field team member
Zel Nabiyyar	NEIC	Field team member
Cindy Schafer	NEIC	Field team member
Matthew Schneider	NEIC	Field team member
REGIONAL AND OTHER CONTACTS		
Justin Chen	EPA Region 6	Regional field team member
Benjamin Donaldson	EPA Region 6	Regional field team member
Colleen McCarthy	EPA Region 6	Regional field team member

FACILITY CONTACT INFORMATION

Table 2 lists the primary facility contacts.

Table 2. FACILITY CONTACT INFORMATION	
Name, Title	Email Address
Michael Dubois, Environmental Manager	michael.dubois@us.indorama.net
Kim Hoyt, Site Director	kim.hoyt@us.indorama.net
Adam Brown, Regional EHS Representative	adam.r.brown@us.indorama.net
Leslie Stuart, Integrated Oxides and Derivatives Corporate Environmental Manager	leslie.stuart@us.indorama.net
James Kalathra, Environmental Team Lead	james.kalathra@us.indorama.net
Rachel Lavergne, Environmental Team Lead	rachel.lavergne@us.indorama.net
Allison Broussard, Environmental Specialist	allison.broussard@us.indorama.net

FACILITY OVERVIEW

According to the EPA Envirofacts database, this facility has the following North American Industry Classification System (NAICS) codes (**Table 3**):

Table 3. APPLICABLE NAICS CODES	
NAICS Code	Description
325110	Petrochemical manufacturing
325199	All other basic organic chemical manufacturing

Indorama is a chemical manufacturer located in Port Neches, Texas, whose primary products include ethanolamines, ethylene glycols, ethylene oxide (EO), methyl tertiary butyl ether (MTBE), propylene, propylene glycol, and surfactants. Huntsman Petrochemical LLC previously owned and operated the facility, which Indorama purchased in 2020. One of the facility's primary raw materials is ethane, which is processed in the cracking furnaces to produce ethylene, which is then used in the production of ethylene oxide. Saleable byproducts of the ethylene manufacturing process include propylene, a C4-rich stream, and aromatic distillate (AD). Indorama currently employs 600 full-time employees and approximately 450 contract employees at the Port Neches facility.

FACILITY OPERATIONS SUMMARY

Indorama operates an ethylene production unit (A3 olefins unit) that utilizes eight furnaces to crack ethane, received via pipeline, into ethylene and other byproducts. The ethylene is recovered from the cracked gas after quenching, compression, drying, and separation from other byproducts. The ethylene product is then sent to the ethylene oxide production units. The A3 olefins unit produces 50% of the ethylene feed with the remainder coming from off-site sources via pipeline. Indorama operates three ethylene oxide production units (F4, F6, and F8 units) to produce ethylene oxide, which is then used in the production of ethylene glycols, ethanolamines, and surfactants. Indorama also ships some of the produced ethylene oxide off-site via railcar. At the time of the NEIC inspection, unit F4 was not operating due to maintenance activities. A process description containing confidential business information is included in **Appendix A**.

FIELD ACTIVITIES SUMMARY

The NEIC field team consisted of Armando Bustamante, Brianna Leiker, Zel Nabiyyar, Cindy Schafer, and Matthew Schneider. The NEIC field team was joined by Justin Chen, Benjamin Donaldson, and Colleen McCarthy of EPA Region 6 during the on-site inspection. On October 17, 2022, the NEIC field team conducted an opening meeting and presented credentials to Adam Brown, Indorama's regional representative for environmental, health, and safety.

The compliance evaluation included:

- Conducting a detailed process review
- Interviewing plant personnel

- Conducting a process area walkthrough and inspection
- Reviewing reports and records
- Conducting leak detection and repair (LDAR) monitoring and data evaluation (data evaluation ongoing as of the date of this report)
- Identifying and recording volatile organic compound (VOC) emissions using optical gas imaging (OGI)
- Evaluating compliance with the following applicable regulations:
 - 40 Code of Federal Regulations (CFR) Part 63 Subpart YY – National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories: Generic Maximum Achievable Control Technology Standards (Ethylene Production)
 - 40 CFR Part 63 Subpart XX – National Emission Standards for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations
 - 40 CFR Part 63 Subpart G – National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
 - 40 CFR Part 63 Subpart H – National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
 - 40 CFR Part 60 Subpart VV – Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006
 - 40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations (BWON)

BWON

Indorama is a chemical plant subject to the BWON and has reported that its aqueous waste contains more than 10 megagrams (Mg) of benzene per year; therefore, it is required to implement a strategy to control benzene emissions from facility waste operations. Indorama has selected the compliance option as described in 40 CFR § 61.342(c), also known as the “2 Mg” option. The 2 Mg compliance option requires the control of all organic and aqueous waste streams that contain benzene. Indorama can exempt waste streams from control that contain less than 10 parts per million (ppm) benzene and exempt additional waste streams, but the total annual benzene quantity of the additional exempted waste streams must be less than or equal to 2 Mg per year.

Storage Tanks

Indorama operates four main atmospheric tanks that collect process streams and saleable product from the A3 olefins unit and four chilled, pressurized spheres that store ethylene oxide.

These storage tanks are associated with process areas inspected by NEIC (A3 and F6 units). As described in **Appendix A**, these include two internal floating roof AD tanks (T-O-87 and T-O-88) and two fixed-roof AD tanks (T-O-126 and T-O-127). All four AD tanks vent to one of two bladder tanks, which then vent to a flare. The NEIC field team inspected each of the four AD tanks, two bladder tanks, and two of the ethylene oxide storage spheres using toxic vapor analyzers (TVAs) and infrared (IR) cameras from ground level and from the platform at the tank tops. In addition, the NEIC field team requested inspection records of the AD tanks and internal floating roofs.

Flaring

Indorama operates three plant flares: north flare (flare No. 1), central flare (flare No. 2), and south flare (flare No. 3). The north and central flares are low-pressure flares, and the south flare is a high-pressure flare. All three flares are steam-assisted, and each flare is equipped with a gas flow meter, a steam flow meter, a British thermal unit (BTU) analyzer, and three thermocouples and a flame sensor camera for pilot flame verification. The NEIC field team requested the continuous data collected by these monitors at hourly intervals from April 16-October 21, 2022.

Indorama representatives stated that the only continuous flow to flares is residue gas as sweep gas and that no other processes continuously vent to flares. Indorama representatives stated that the flare sources are mainly the A3 olefins unit (ethylene production unit), with some contribution from loading operations (receiving and shipping [R&S]). In addition, emissions from the AD tanks are controlled by the north and central flares. Natural gas is added as supplemental fuel for each flare.

Measurement Activities

The NEIC field team provided support to this investigation by conducting LDAR monitoring and OGI. **Table 4** summarizes field measurement activities; additional information can be found in the LDAR monitoring summary (**Appendix B**), the OGI survey images and videos (**Appendix C**), and the project file.

All environmental measurement activities were performed in accordance with the NEIC quality system. All field measurements/monitoring described in this report are within the scope of NEIC's ISO/IEC 17025 accreditation issued by the ANSI National Accreditation Board (certificate No. FT-0303).

Table 4. FIELD MEASUREMENT ACTIVITIES			
Location Identifier	Dates	Method and/or Procedure ¹ , and Equipment	Measurer Name
Process areas and regulated LDAR equipment	October 18 and 20, 2022	Method: EPA Method 21: Determination of Volatile Organic Compound Leaks NEIC Procedure: <i>Toxic Vapor Analyzer (TVA)</i> , NEICPROC/00-016 Equipment: Thermo Scientific TVA 2020 toxic vapor analyzer, NEIC ID Nos. B24213, B24309, and B24311	Cindy Schafer (B24311) Matthew Schneider (B24309) (B24213)
Used to screen location for safety	October 18 and 20, 2022	NEIC procedure: <i>Safety and Sample Screening Instruments</i> , NEICPROC/17-002 Instrument guide: <i>MSA Altair 5X Multi-Gas Monitoring Equipment</i> Equipment: MSA Altair 5x multiple-gas monitor, NEIC ID No. SN2624	Armando Bustamante
¹ The current version of each procedure, at the time of the investigation, was followed.			

INVESTIGATION OBSERVATIONS

NEIC identified the following observations during the Clean Air Act compliance inspection. NEIC field team members discussed all observations made at the time of the site inspection with facility representatives during the closeout meeting. These observations are not final compliance determinations. EPA Region 6 will make the final compliance determinations based on its review of this report and other technical, regulatory, and facility information.

Observation 1

Observation Summary: Indorama did not identify and report all points of benzene waste generation and did not identify and report points of benzene waste generation in the correct locations.

Citation:

40 CFR Part 63 Subpart XX – National Emission Standards for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations

40 CFR § 63.1091 What do the waste requirements do? *This subpart requires you to comply with 40 CFR part 61, subpart FF, National Emission Standards for Benzene Waste Operations...*

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

40 CFR § 61.342 – Standards: General.

(a) *An owner or operator of a facility at which the total annual benzene quantity from facility waste is less than 10 megagrams per year (Mg/yr) (11 ton/yr) shall be exempt from the requirements of paragraphs (b) and (c) of this section. The total annual benzene quantity from facility waste is the sum of the annual benzene quantity for each waste stream at the facility that has a flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. The benzene quantity in a waste stream is to be counted only once without multiple counting if other waste streams are mixed with or generated from the original waste stream. Other specific requirements for calculating the total annual benzene waste quantity are as follows:*

(4) *The total annual benzene quantity is determined based upon the quantity of benzene in the waste before any waste treatment occurs to remove the benzene except as specified in § 61.355(c)(1)(i) (A) through (C).*

40 CFR § 61.357 Reporting requirements.

(a) *Each owner or operator of a chemical plant, petroleum refinery, coke by-product recovery plant, and any facility managing wastes from these industries shall submit to the Administrator within 90 days after January 7, 1993, or by the initial startup for a new source with an initial startup after the effective date, a report that summarizes the regulatory status of each waste stream subject to § 61.342 and is determined by the procedures specified in §*

Observation 1

61.355(c) to contain benzene. Each owner or operator subject to this subpart who has no benzene onsite in wastes, products, by-products, or intermediates shall submit an initial report that is a statement to this effect. For all other owners or operators subject to this subpart, the report shall include the following information:

(1) Total annual benzene quantity from facility waste determined in accordance with § 61.355(a) of this subpart.

(2) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions in accordance with the requirements of this subpart.

(3) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart the following information shall be added to the table:

(i) Whether or not the water content of the waste stream is greater than 10 percent;

(ii) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate;

(iii) Annual waste quantity for the waste stream;

(iv) Range of benzene concentrations for the waste stream;

(v) Annual average flow-weighted benzene concentration for the waste stream; and

(vi) Annual benzene quantity for the waste stream.

(4) The information required in paragraphs (a) (1), (2), and (3) of this section should represent the waste stream characteristics based on current configuration and operating conditions. An owner or operator only needs to list in the report those waste streams that contact materials containing benzene. The report does not need to include a description of the controls to be installed to comply with the standard or other information required in § 61.10(a).

(d) If the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr), then the owner or operator shall submit to the Administrator the following reports:

(2) Beginning on the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this

Observation 1

section is not changed in the following year, the owner or operator may submit a statement to that effect.

40 CFR § 61.341 Definitions.

Point of waste generation *means the location where the waste stream exits the process unit component or storage tank prior to handling or treatment in an operation that is not an integral part of the production process, or in the case of waste management units that generate new wastes after treatment, the location where the waste stream exits the waste management unit component.*

Waste stream *means the waste generated by a particular process unit, product tank, or waste management unit. The characteristics of the waste stream (e.g., flow rate, benzene concentration, water content) are determined at the point of waste generation. Examples of a waste stream include process wastewater, product tank drawdown, sludge and slop oil removed from waste management units, and landfill leachate.*

Waste *means any material resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled, or discharged.*

40 CFR Part 63 Subpart XX – National Emission Standards for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations

40 CFR § 63.1082 What definitions do I need to know?

Dilution steam blowdown waste stream *means any continuously flowing process wastewater stream resulting from the quench and compression of cracked gas (the cracking furnace effluent) at an ethylene production unit and is discharged from the unit. This stream typically includes the aqueous or oily-water stream that results from condensation of dilution steam (in the cracking furnace quench system), blowdown from dilution steam generation systems, and aqueous streams separated from the process between the cracking furnace and the cracked gas dehydrators. The dilution steam blowdown waste stream does not include blowdown that has not contacted HAP-containing process materials...*

Evidence:

Appendix D – 2018-2021 BWON TAB Reports

Appendix A – Process Description [Contains CBI]

Appendix E – 2021 TRI Report

Field logbooks

Description of Observation: Based on an in-depth review of the production processes and inspection of the site operations, Indorama did not identify all points of waste generation in its total annual benzene (TAB) reports (**Appendix D**).

As described in the “Process Description” (**Appendix A [Contains CBI]**), ethylene gas and reaction byproducts from the cracking furnaces are quenched with water in the quench tower (F-101), and the condensed materials are collected in the quench drum (F-3). The

Observation 1

material collected in F-3 meets the definition of dilution steam blowdown waste because it is the continuously flowing wastewater stream from the cracking furnace quench system; therefore, the point of waste generation of the waste stream is the material being discharged from F-101 into F-3. Indorama has reported a waste stream called "O&O Quench Drum to WW Stripper," which, after a detailed process review, was determined to be the aqueous discharge from the wastewater coalescer to the stripper. The coalescer receives aqueous waste from the wastewater separator (F-58), which receives aqueous waste from F-3 and is located downstream of the point of waste generation after waste treatment had occurred (in a series of oil-water separators) to remove the benzene.

The overhead gas stream from F-101 is compressed in a three-stage compressor, and for several stages of compression, vapors are condensed into suction drums or knockout drums. The first-stage suction drum discharges directly into F-3. The second-stage suction drum collects condensate from the second- and third-stage discharge drums, the third-stage suction drum, and the caustic tower knockout drum (located between the second and third compressor stages). The second-stage suction drum is equipped with a weir that separates oil and water; the aqueous phase is sent to F-3, and the organic phase is sent to the AD storage tanks.

The materials condensed and discharged from each of the suction drums, discharge drums, and caustic tower knockout drum also meet the definition of dilution steam blowdown waste because they are continuously flowing wastewater streams generated from the compression of cracked gas and located between the cracking furnace and the cracked gas dehydrators; therefore, these waste streams should each be individual points of waste generation.

An inspection of the process unit and review of the TAB reports from 2018-2021 indicated additional points of benzene waste generation were not included in the TAB reports. The following potential points of benzene waste generation were not included in the TAB reports:

- Flare knockout tanks: Two low-pressure flares and one high-pressure flare are used to control vent streams that are expected to contain benzene. In the R&S area, a flare knockout tank collects liquids, and the collected liquids are pumped into the AD storage tanks. Additionally, one knockout tank for each flare is located at the flares themselves; each knockout tank collects liquids and sends the collected liquid to the AD storage tanks. Therefore, there are likely four points of waste generation associated with flare knockout pots that should be reported in the TAB report.
- Tank water draws (A-3 sump/wash oil/quench to T-O-88/126): This waste stream listed in the TAB reports is not described accurately, and after discussions with Indorama personnel, it appears to be several waste streams reported as a combined stream. The A3 sump collects mainly rainwater and process area drainage, and the material collected in the sump is sent to AD storage and is expected to contain benzene. According to Indorama personnel, the wash oil/quench to T-O-88/128 waste stream is likely the tank water draws from the AD storage tanks. However, there are four AD storage tanks, each with water draws that are sent to F-3. The benzene concentration reported for the combined stream is an average of 19.67 ppm. Because the AD is approximately 40% benzene, the water drawn off the bottom of the tanks (mixed with the AD in previous

Observation 1

processing steps) likely has a benzene concentration significantly higher than 20 ppm, and Indorama has not provided NEIC with analytical data to support the reported concentration. Each of these points of waste generation should be reported separately in the TAB report. The combined waste stream has been reported as an uncontrolled waste stream contributing to the 2Mg benzene/year that is exempt from control.

- Fuel gas knockout drum and coalescer: Wastewater generated in the ethylene process area and drawn off the AD storage tanks is stripped in a steam stripper. The stripped gas is used in the cracking furnaces but is first passed through a knockout drum and coalescer to remove entrained liquids. The liquids generated in the fuel gas knockout drum and coalescer are discharged to the quench tower and are expected to contain benzene.
- F-3 blowdown to tar tank: Liquid from the bottom of F-3 is blown down to the tar tank several times a day. The tar tank is vented to carbon drums as a control device. Tar that is entrained in the liquid is allowed to settle, and then the tar tank is periodically decanted into an open drain without a water seal. The TAB reports list the tar tank decant into the open drain, which is reported as uncontrolled, but a point of waste generation is where it is blown down from the F-3 quench drum prior to volatilization of the benzene in the tar tank.
- Low-point drains: NEIC field team members observed numerous low-point drains located on process vessels and piping throughout the A3 process area. Presumably, the drains may be used when maintenance is performed, or possibly during routine operations. The TAB reports did not list any equipment drains; if these drains are used, the resulting waste streams are discharged to uncontrolled individual drains (with a visible gap below the drain) or open concrete-lined trenches within the process area.
- Pump blowdowns: The TAB reports did not list any waste generated from pumps, but pumps are known to be drained for maintenance or have pump seal leaks. The pumps observed in the process area would be drained onto diked areas or into open trenches and would not be considered controlled.
- Spills: The TAB reports did not list any benzene waste generated from spills. NEIC did not investigate whether Indorama had any spills during the 4 years of TAB reports reviewed by the field team.
- Waste shipped off-site: The TAB reports list a “hazardous lab pack” waste stream; however, the 2021 TAB report did not report any benzene waste from this waste stream. A review of the facility’s 2021 Toxic Release Inventory (TRI) report (**Appendix E**) revealed that approximately 2,000 pounds of benzene waste were shipped off-site to Clean Harbors for disposal as hazardous waste. It is not clear if the lab pack waste stream is the same waste stream that was listed as shipped off-site in the 2021 TRI report.
- Turnaround waste: Every 5 years, the ethylene process unit undergoes a turnaround during which all process fluid is drained, and the equipment is inspected and repaired. One of the known waste streams that is generated during process unit turnarounds is the tar that is removed from the process and collected in the tar tank, which is removed from the tank during the turnaround. Generally, a large quantity of miscellaneous waste is generated during facility turnarounds. A process unit turnaround last occurred in 2018, but no turnaround waste was reported in the 2018 TAB report.

Observation 1

- Sample station purges: NEIC did not verify the locations of sample stations or how the purges are managed, but any purged material from the sampling stations should be considered waste and be reported in the TAB report.
- AD loading drips: The AD is loaded onto tank trucks, and the drips from the loading operations land in a concrete diked area and are collected in one of two open sumps. Vacuum trucks pump out the sumps and load the pumped material back into the AD tanks.

Observation 2

Observation Summary: Indorama did not route all organic vapors from oil-water separators to a control device and did not operate or maintain the fixed roofs without detectable emissions.

Citation:

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

§ 61.341 Definitions.

Oil-water separator means a waste management unit, generally a tank or surface impoundment, used to separate oil from water...

40 CFR § 61.347 Standards: Oil-water separators.

(a) Except as provided in § 61.352 of this subpart, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

(i) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.

Evidence:

Appendix B – LDAR Monitoring Summary

Appendix C – OGI Survey Images and Videos

Field logbooks

Description of Observation: The AD tanks collect aromatic distillate from the quench drum, wastewater separator, caustic separator, and various sumps throughout the ethylene process area. Water is brought over with the distillate and is separated in the AD tanks by periodically

Observation 2

draining water from the tanks back into F-3. Therefore, the AD tanks are operated as oil-water separators that are managing benzene waste.

There are four AD tanks. Tanks 126 and 127 are each equipped with an internal floating roof and a fixed roof. Tanks 87 and 88 are only equipped with a fixed roof. Tank 87 was out of service at the time of the inspection. The fixed roofs of all four tanks are vented to one of two bladder tanks. When the level of the bladder reaches a certain height, a vacuum pump is used to pull vapors from the bladder to be destroyed by a low-pressure flare.

NEIC field team members observed vapors being emitted from pressure relief devices and various hatches on the top of the tanks. NEIC field team members measured and observed detectable emissions, using a TVA and an IR camera, at the following locations on the tanks:

Tank 127 (**Appendix C**, videos 330, 332, and 333):

- Level transmitter hatch leaking at 20,000 ppm
- Gauge hatch leaking at 8,000 ppm
- White, rectangular hatch leaking at 10,000 ppm
- Pressure relief device observed leaking with IR camera but was not safe to monitor with TVA

Tank 126 (**Appendix C**, videos 330 and 331):

- Gauge hatch leaking at 30,000 ppm
- Small, rectangular hatch leaking at 600 ppm
- Pressure relief device leaking at 40,000 ppm then flameout
- Second pressure relief device observed leaking with IR camera but was not safe to monitor with TVA

Tank 88 (**Appendix C**, videos 427 and 428):

- Vacuum-break side of conservation vent leaking at 10,100 ppm
- Thief hatch leaking at 37,200 ppm then flameout

Observation 3

Observation Summary: Indorama did not operate a closed-vent system (CVS) that routes all organic vapors to a control device and did not operate or maintain the closed-vent system without detectable emissions.

Citation:

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

40 CFR § 61.347 Standards: Oil-water separators.

(a) Except as provided in § 61.352 of this subpart, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:

Observation 3

(1) *The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.*

(ii) *The closed-vent system and control device shall be designed and operated in accordance with the requirements of § 61.349 of this subpart.*

40 CFR § 61.349 Standards: Closed-vent systems and control devices.

(a) *For each closed-vent system and control device used to comply with standards in accordance with §§ 61.343 through 61.348 of this subpart, the owner or operator shall properly design, install, operate, and maintain the closed-vent system and control device in accordance with the following requirements:*

(1) *The closed-vent system shall:*

(i) *Be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.*

Evidence:

Appendix B – LDAR Monitoring Summary

Appendix C – OGI Survey Images and Videos

Field logbooks

Description of Observation: As described previously, the AD tanks are vented to one of two bladder tanks; the vapors collected in the bladder tanks are discharged to one of the low-pressure flares. NEIC field team members observed emissions from both bladder tanks at the outlet of the vent stacks located on top of the tanks. Because the bladder tanks are collecting the vapors from the oil-water separators and then conveying the gas to a control device, the bladder tanks are part of the closed-vent system and are required to be operated with no detectable emissions. Using a TVA, NEIC field team members measured detectable emissions of 8,000 ppm from one of the three vent stacks on bladder tank F-114A and emissions of 4,200 ppm and 4,300 ppm from two of the three vent stacks on bladder tank F-114B. NEIC field team members also observed the emissions using an IR camera (**Appendix C**, videos 334 and 336).

Observation 4

Observation Summary: Indorama likely did not conduct required inspections and monitoring of benzene waste management units and treatment processes.

Citation:

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

40 CFR § 61.341 Definitions.

Observation 4

Sewer line means a lateral, trunk line, branch line, or other enclosed conduit used to convey waste to a downstream waste management unit.

Treatment process means a stream stripping unit, thin-film evaporation unit, waste incinerator, or any other process used to comply with § 61.348 of this subpart.

Waste management unit means a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system, steam stripping unit, thin-film evaporation unit, waste incinerator, and landfill.

Waste means any material resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, thermally, or biologically treated prior to being discarded, recycled, or discharged.

Waste stream means the waste generated by a particular process unit, product tank, or waste management unit. The characteristics of the waste stream (e.g., flow rate, benzene concentration, water content) are determined at the point of waste generation. Examples of a waste stream include process wastewater, product tank drawdown, sludge and slop oil removed from waste management units, and landfill leachate.

40 CFR § 61.343 Standards: Tanks.

(a)(1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.

(i) The fixed-roof shall meet the following requirements:

(A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.

40 CFR § 61.346 – Standards: Individual drain systems.

(a) Except as provided in paragraph (b) of this section, the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain on each drain system opening a cover and closed-vent system that routes all organic vapors vented from the drain system to a control device.

Observation 4

(b) *As an alternative to complying with paragraph (a) of this section, an owner or operator may elect to comply with the following requirements:*

(3) *Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.*

(4) *Equipment installed in accordance with paragraphs (b)(1), (b)(2), or (b)(3) of this section shall be inspected as follows:*

(iv) *The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.*

40 CFR § 61.347 Standards: Oil-water separators.

(a)(1) *The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.*

(i) *The fixed-roof shall meet the following requirements:*

(A) *The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart.*

(b) *Each cover seal, access hatch, and all other openings shall be checked by visual inspection initially and quarterly thereafter to ensure that no cracks or gaps occur between the cover and oil-water separator wall and that access hatches and other openings are closed and gasketed properly.*

40 CFR § 61.348 – Standards: Treatment processes.

(e) *Except as specified in paragraph (e)(3) of this section, if the treatment process or wastewater treatment system unit has any openings (e.g., access doors, hatches, etc.), all such openings shall be sealed (e.g., gasketed, latched, etc.) and kept closed at all times when waste is being treated, except during inspection and maintenance.*

(1) *Each seal, access door, and all other openings shall be checked by visual inspections initially and quarterly thereafter to ensure that no cracks or gaps occur and that openings are closed and gasketed properly.*

Evidence:

Appendix F – Monthly Visual Inspection Records

Appendix G – 2021 BWON LDAR Monitoring Records

Description of Observation: Waste management units have inspection and monitoring requirements, which depend on the type of unit managing benzene waste. NEIC requested

Observation 4

BWON-specific inspection records for the various types of waste management units at the site. Based on discussions with facility personnel, Indorama has not implemented a monitoring and inspection program specific to BWON, but the facility provided NEIC records of monthly visual inspections conducted within the ethylene process unit (presumably to demonstrate that quarterly visual inspections are taking place), as well as records of LDAR monitoring performed within the unit that have been categorized as subject to BWON monitoring requirements (**Appendices F and G**).

Based on historical records of leaking components, it appears Indorama is conducting EPA Method 21 monitoring on some equipment subject to BWON monitoring requirements; however, it is not possible to determine if monitoring has been conducted on all required waste management units. The BWON waste management units also have a quarterly visual inspection requirement. NEIC requested records of the quarterly inspections, and Indorama provided a checklist of equipment that is inspected monthly. The inspection checklist does not specify which pieces of equipment are being inspected or that any of the equipment is specifically inspected for evidence of gaps, cracks, defects, or other problems that could result in benzene emissions.

Because NEIC is unable to determine whether all required inspections are being performed, NEIC identified the following list of waste management units as equipment subject to the BWON inspection requirements that may not have been inspected.

Oil-water separators managing waste that NEIC field team members identified, but that Indorama may not have inspected (annual EPA Method 21 and quarterly visual inspections), include:

- F-58 waste water separator
- Wastewater coalescer
- F-59 caustic phase separator
- F-3 quench drum
- F-5 second-stage suction drum
- AD tanks
- F-36 aromatic distillate coalescer

The following tanks managing benzene waste may not have been included in the annual EPA Method 21 monitoring required by the BWON:

- Tar tank
- F-4 first-stage suction drum
- F-6 second-stage discharge drum
- F-16 caustic tower knockout drum
- F-8 third-stage suction drum
- F-9 third-stage discharge drum
- F-51 fuel gas knockout drum
- F-120 A/B coalescers
- Flare knockout tanks

Observation 4

The unburied portions of the following sewer lines may not have been included in the quarterly visual inspections required by the BWON:

- Line from F-3 quench drum to F-58 waste water separator
- Line from F-3 quench drum to tar tank
- Line from F-3 quench drum to AD tanks
- Line from F-58 waste water separator to D-8 A/B pre-filters
- Line from D-8 A/B pre-filters to wastewater coalescer
- Line from wastewater coalescer to F-205 A/B wastewater stripper
- Line from F-59 caustic phase separator to F-205 A/B wastewater stripper
- Line from F-58 wastewater separator to AD tanks
- Line from F-59 caustic phase separator to AD tanks
- Line from F-51 fuel gas knockout drum to quench tower
- Line from F-120 A/B coalescers to quench tower
- Line from F-4 first-stage suction drum to AD tanks
- Line from F-5 second-stage suction drum to quench drum
- Line from F-5 second-stage suction drum to AD tanks
- Line from F-6 second-stage discharge drum to F-5 second-stage suction drum
- Line from F-16 caustic tower knockout drum to F-5 second-stage suction drum
- Line from F-8 third-stage suction drum to F-5 second-stage suction drum
- Line from F-9 third-stage discharge drum to F-6 second-stage discharge drum
- Line from F-51 fuel gas knockout drum to quench tower
- Line from F-120 A/B fuel gas coalescers to quench tower
- Line from F-114 debutanizer to AD tanks

The following treatment process may not have been included in the quarterly visual inspections required by the BWON:

- F-205 A/B wastewater stripper

Observation 5

Observation Summary: Indorama failed to comply with the 2 Mg compliance option because the facility managed more than 2 Mg of benzene waste in non-compliant waste management units.

Citation:

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

40 CFR § 61.342 Standards: General.

(c) Each owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section shall manage and treat the facility waste as follows:

Observation 5

(1) For each waste stream that contains benzene, including (but not limited to) organic waste streams that contain less than 10 percent water and aqueous waste streams, even if the wastes are not discharged to an individual drain system, the owner or operator shall:

(i) Remove or destroy the benzene contained in the waste using a treatment process or wastewater treatment system that complies with the standards specified in § 61.348 of this subpart.

(ii) Comply with the standards specified in §§ 61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste stream prior to and during treatment of the waste stream in accordance with paragraph (c)(1)(i) of this section.

(iii) Each waste management unit used to manage or treat waste streams that will be recycled to a process shall comply with the standards specified in §§ 61.343 through 61.347. Once the waste stream is recycled to a process, including to a tank used for the storage of production process feed, product, or product intermediates, unless this tank is used primarily for the storage of wastes, the material is no longer subject to paragraph (c) of this section.

(2) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the flow-weighted annual average benzene concentration for the waste stream is less than 10 ppmw as determined by the procedures specified in § 61.355(c)(2) or § 61.355(c)(3).

(3) A waste stream is exempt from paragraph (c)(1) of this section provided that the owner or operator demonstrates initially and, thereafter, at least once per year that the conditions specified in either paragraph (c)(3)(i) or (c)(3)(ii) of this section are met.

(i) The waste stream is process wastewater that has a flow rate less than 0.02 liters per minute (0.005 gallons per minute) or an annual wastewater quantity of less than 10 Mg/yr (11 ton/yr); or

(ii) All of the following conditions are met:

(A) The owner or operator does not choose to exempt process wastewater under paragraph (c)(3)(i) of this section,

(B) The total annual benzene quantity in all waste streams chosen for exemption in paragraph (c)(3)(ii) of this section does not exceed 2.0 Mg/yr (2.2 ton/yr) as determined in the procedures in § 61.355(j), and

(C) The total annual benzene quantity in a waste stream chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated.

Observation 5

40 CFR § 61.355 (a) *An owner or operator shall determine the total annual benzene quantity from facility waste by the following procedure:*

(1) *For each waste stream subject to this subpart having a flow-weighted annual average water content greater than 10 percent water, on a volume basis as total water, or is mixed with water or other wastes at any time and the resulting mixture has an annual average water content greater than 10 percent as specified in § 61.342(a), the owner or operator shall:*

(i) *Determine the annual waste quantity for each waste stream using the procedures specified in paragraph (b) of this section.*

(ii) *Determine the flow-weighted annual average benzene concentration for each waste stream using the procedures specified in paragraph (c) of this section.*

(iii) *Calculate the annual benzene quantity for each waste stream by multiplying the annual waste quantity of the waste stream times the flow-weighted annual average benzene concentration.*

(b) *For purposes of the calculation required by paragraph (a) of this section, an owner or operator shall determine the annual waste quantity at the point of waste generation...*

(j) *An owner or operator shall determine the benzene quantity for the purposes of the calculation required by § 61.342 (c)(3)(ii)(B) according to the provisions of paragraph (a) of this section, except that the procedures in paragraph (a) of this section shall also apply to wastes with a water content of 10 percent or less.*

Evidence: See Observations 2, 3, and 4.

Appendix H – Aromatic Distillate Sales Data from November 2, 2021-November 3, 2022

Appendix I – Composition Data for Aromatic Distillate

Description of Observation: Indorama has chosen the compliance option in 40 CFR § 61.342(c), which requires either the management and treatment of all benzene-containing waste streams such that 99% of the benzene is removed from or destroyed in the waste stream or the waste stream is treated such that the benzene concentration is less than 10 parts per million by weight (ppmw). Waste streams with benzene concentrations less than 10 ppmw are exempt from this control requirement, and Indorama may exempt waste streams containing a total (cumulative) annual benzene quantity less than or equal to 2.0 Mg/yr. This is known as the 2 Mg compliance option.

Under the 2 Mg compliance option, Indorama is required to determine the benzene quantity in waste streams based on the calculation specified in 40 CFR § 61.355(j); specifically, the benzene quantity is determined at each location where a waste stream is generated, before it is treated, and before any other wastes are mixed with or dilute the waste stream. Each benzene-containing waste stream must be managed in waste management units complying with the applicable requirements in 40 CFR §§ 61.343-61.347. Only 2 Mg of benzene may be exempted from the control requirement, as well as any waste streams containing less than 10 ppm benzene.

Observation 5

Indorama failed to manage benzene waste in compliant waste management units as required in 40 CFR § 61.342(c). The waste streams entering each non-compliant waste management unit should be considered uncontrolled, and the benzene quantity within the waste should count toward the allowable 2 Mg benzene per year exempted from control.

Indorama did not route all the organic vapors from the AD tanks to a control device, as required (see Observations 2 and 3). Based on AD sales data from November 2, 2021-November 3, 2022 (**Appendix H**), 33,299,120 pounds of AD were sold during the past year. Analytical data for the AD composition also provided by Indorama (**Appendix I**) indicate the AD is approximately 43% benzene by weight. Therefore, at least 14,318,622 pounds (6,495 Mg) of benzene were managed in the AD tanks during the past year. This quantity of benzene underestimates the total benzene managed in the AD tanks because it only includes the benzene contained in the organic phase of the oil-water separators. Because Indorama did not route all organic vapors from oil-water separators to a control device, all benzene entering the AD tanks is considered uncontrolled, substantially exceeding the 2 Mg per year limit.

Observation 6

Observation Summary: NEIC field team members observed emissions from portions of the ethylene process area individual drain system.

Citation:

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

40 CFR § 61.341 – Definitions.

Individual drain system means the system used to convey waste from a process unit, product storage tank, or waste management unit to a waste management unit. The term includes all process drains and common junction boxes, together with their associated sewer lines and other junction boxes, down to the receiving waste management unit.

Sewer line means a lateral, trunk line, branch line, or other enclosed conduit used to convey waste to a downstream waste management unit.

Waste management unit means a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system, steam stripping unit, thin-film evaporation unit, waste incinerator, and landfill.

40 CFR § 61.346 Standards: Individual drain systems.

(a) Except as provided in paragraph (b) of this section, the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain on each drain system opening a cover and closed-vent system that routes all organic vapors vented from the drain system to a control device.

(b) As an alternative to complying with paragraph (a) of this section, an owner or operator may elect to comply with the following requirements:

(1) Each drain shall be equipped with water seal controls or a tightly sealed cap or plug.

(3) Each sewer line shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces.

(4) Equipment installed in accordance with paragraphs (b)(1), (b)(2), or (b)(3) of this section shall be inspected as follows:

(i) Each drain using water seal controls shall be checked by visual or physical inspection initially and thereafter quarterly for indications of low water levels or other conditions that would reduce the effectiveness of water seal controls.

(iv) The unburied portion of each sewer line shall be visually inspected initially and thereafter quarterly for indication of cracks, gaps, or other problems that could result in benzene emissions.

(5) Except as provided in § 61.350 of this subpart, when a broken seal, gap, crack or other problem is identified, first efforts at repair shall be made as soon as practicable, but not later than 15 calendar days after identification.

40 CFR Part 61 Subpart A – General Provisions**40 CFR § 61.01** Lists of pollutants and applicability of part 61.

(c) This part applies to the owner or operator of any stationary source for which a standard is prescribed under this part.

40 CFR § 61.12 Compliance with standards and maintenance requirements.

(c) The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, 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

Observation 6

to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source.

Evidence:

Appendix B – LDAR Monitoring Summary

Appendix C – OGI Survey Images and Videos

Field logbooks

Description of Observation: NEIC field team members observed several drain system openings, trenches, and wastewater piping and conveyance equipment within the ethylene process area. In several locations, using a TVA, NEIC field team members measured elevated organic vapor emissions from the individual drain system.

An example is a drain system opening located below the A3 olefins unit low-pressure flare knockout tank (F-45). NEIC field team members traced the three individual drain lines that discharge to the drain system opening below F-45 and observed that two of them were from decommissioned process equipment (not in service). The third drain was for condensate from a non-contact steam tracing line (not expected to contain organic compounds) that is used to vaporize the contents of the knockout pot. However, organic vapors were coming from the drain system opening and overwhelmed the TVA, causing it to flame out. NEIC field team members could not verify the presence of a water seal in the drain system opening, and, based on the emissions from the drain system opening, there likely was not a water seal control installed at the time of inspection.

Another concern was a seal vent installed on the debutanizer bottoms pump (AD pump A3-38A), which, at the time of the NEIC inspection, was open to atmosphere and venting emissions measured at 87,000 ppm (**Appendix C**, video 328). A drain located on the piping connected to the pump was designed to discharge material into an uncovered concrete ditch; the plug at the end of the drain measured emissions of 1,900 ppm (Indorama personnel confirmed with the facility's TVA that it was leaking at 10,000 ppm). The pump is used to convey aromatic distillate (high in benzene) to the AD tanks from the bottoms of the debutanizer and is part of the individual drain system. As described previously in Observation 1, Indorama's TAB reports did not report any waste from pump drains. The pump itself is a waste management unit because it is a piece of equipment or transport mechanism used in handling waste, but there are no specific standards for this type of waste management unit in Subpart FF.

However, the general provisions (Subpart A) of 40 CFR Part 61 apply to Subpart FF and require Indorama to operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. The open seal vent (that was subsequently plugged following the on-site inspection) was indicative of the pump not being operated in a manner that minimized emissions of benzene from the waste.

Observation 7

Observation Summary: Indorama did not maintain records of the underlying calculations and analytical data to support the information reported in the TAB reports. Information

Observation 7

presented in the TAB reports does not appear to be based on current configuration or operating conditions.

Citation:

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

40 CFR § 61.357 Reporting requirements.

(a) Each owner or operator of a chemical plant, petroleum refinery, coke by-product recovery plant, and any facility managing wastes from these industries shall submit to the Administrator within 90 days after January 7, 1993, or by the initial startup for a new source with an initial startup after the effective date, a report that summarizes the regulatory status of each waste stream subject to § 61.342 and is determined by the procedures specified in § 61.355(c) to contain benzene. Each owner or operator subject to this subpart who has no benzene onsite in wastes, products, by-products, or intermediates shall submit an initial report that is a statement to this effect. For all other owners or operators subject to this subpart, the report shall include the following information:

(1) Total annual benzene quantity from facility waste determined in accordance with § 61.355(a) of this subpart.

(2) A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions in accordance with the requirements of this subpart.

(3) For each waste stream identified as not being controlled for benzene emissions in accordance with the requirements of this subpart the following information shall be added to the table:

(i) Whether or not the water content of the waste stream is greater than 10 percent;

(ii) Whether or not the waste stream is a process wastewater stream, product tank drawdown, or landfill leachate;

(iii) Annual waste quantity for the waste stream;

(iv) Range of benzene concentrations for the waste stream;

(v) Annual average flow-weighted benzene concentration for the waste stream; and

(vi) Annual benzene quantity for the waste stream.

(4) The information required in paragraphs (a) (1), (2), and (3) of this section should represent the waste stream characteristics based on current configuration and operating conditions. An owner or operator only needs to list in the report those waste streams that contact materials containing benzene. The report does not need

Observation 7

to include a description of the controls to be installed to comply with the standard or other information required in § 61.10(a).

40 CFR § 61.356 Recordkeeping requirements.

(a) Each owner or operator of a facility subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section. Each record shall be maintained in a readily accessible location at the facility site for a period not less than two years from the date the information is recorded unless otherwise specified.

(b) Each owner or operator shall maintain records that identify each waste stream at the facility subject to this subpart, and indicate whether or not the waste stream is controlled for benzene emissions in accordance with this subpart. In addition the owner or operator shall maintain the following records:

(1) For each waste stream not controlled for benzene emissions in accordance with this subpart, the records shall include all test results, measurements, calculations, and other documentation used to determine the following information for the waste stream: waste stream identification, water content, whether or not the waste stream is a process wastewater stream, annual waste quantity, range of benzene concentrations, annual average flow-weighted benzene concentration, and annual benzene quantity.

(2) For each waste stream exempt from § 61.342(c)(1) in accordance with § 61.342(c)(3), the records shall include:

(ii) All measurements, calculations, and other documentation used to determine that the sum of the total annual benzene quantity in all exempt waste streams does not exceed 2.0 Mg/yr (2.2 ton/yr) in accordance with § 61.342(c)(3)(ii).

Evidence:

Appendix D – 2018-2021 TAB Reports

Appendix J – November 3, 2022, Email from Indorama Re: Follow-up Records Request Field logbooks

Description of Observation: The NEIC field team requested the supporting information for the uncontrolled waste streams and their benzene quantities reported in the TAB reports (**Appendix D**). The information requested includes test results, measurements, calculations, and any other documentation used to determine the characteristics of the waste streams. Indorama could not locate any of the supporting documentation during the site visit and subsequently sent an email to NEIC that confirmed that the facility had used the reported waste stream characteristics since 2004 and could not locate the underlying supporting documentation (**Appendix J**). While Indorama is only required to keep this information in a readily accessible location for 2 years from the date the information is recorded, the information is required to be maintained by Indorama, with no time limit specified in the rule.

Observation 7

One specific concern is that the TAB reports need to reflect current configuration and operating conditions. An example is the combined waste stream “A-3 Sump/wash oil/quench to T-O-88/126,” reported as uncontrolled in the TAB reports. As described in Observation 1, there is a concern that the reported benzene concentration may underrepresent the true concentration based on the solubility of benzene in water that has been mixed with AD. Additionally, for the reported waste stream, the TAB reports only mention T-O-88/126, which appears to describe two AD tanks (tanks 88 and 126). However, there are currently four AD tanks, and, therefore, the waste stream as reported is likely not based on the current configuration of the facility.

Observation: 8

Observation Summary: In October 2019, a third-party compliance audit was performed and potential violations of 40 CFR Part 63, Subparts A, G, and FFFF, and 40 CFR Part 60, Subparts NNN, RRR, and VVa were identified. NEIC is not aware of disclosure of these potential violations to the EPA.

Citation:

Volume 65, Federal Register 19618 – 19627, April 11, 2000, Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations (EPA Audit Policy)

Evidence:

Appendix K – Third-Party Compliance Audit [Contains CBI]

Appendix L – June 2022 Quarterly Audit Update to TCEQ

Description of Observation: From October 28-30, 2019, Trinity Consultants conducted a third-party audit of the Indorama (was Huntsman at the time of the audit) Port Neches facility. The audit focused on the facility’s compliance with 40 CFR Part 63, Subparts F and G, at the ethylene oxide, methyl tertiary butyl ether (MTBE), and propylene oxide chemical manufacturing operations (**Appendix K**).

The third-party audit identified 12 areas of potential noncompliance and made recommendations for corrective actions. The following is a summary of the areas of potential noncompliance identified in the third-party audit; see the third-party audit report (**Appendix K**) for additional details:

1. Failure to maintain records of Hazardous Organic NESHAP (HON) applicability and update the notification of compliance status (NOCS) to reflect physical and operational changes to the affected facilities for F4, F5, and F6.
2. Failure to perform HON applicability determinations and submit a NOCS for F8.
3. Failure to identify group status and to maintain records of the determination for continuous process vents associated with the carbon dioxide (CO₂) removal system for F4, F6, and F8.
4. Failure to identify all wastewater streams and conduct group status determinations under HON for F4, F5, F6, and F8.
5. Failure to identify and inspect all HON waste management units in F5.
6. Failure to identify process units subject to 40 CFR Part 60, Subparts NNN and RRR.
7. Failure to comply with 40 CFR Part 60, Subpart VVa (New Source Performance Standards [NSPS] VVa), after modifying affected facilities or to document that modifications did not trigger NSPS VVa applicability.

Observation: 8

8. CVS inspections do not identify each portion of the closed-vent systems.
9. Documentation that the facility is meeting requirements applicable to bypass lines subject to 40 CFR Part 63, Subpart G.
10. Documentation demonstrating that 40 CFR Part 63, Subpart FFFF, does not apply to F5.
11. Startup, shutdown, and malfunction procedures not adequate to minimize releases from the recycle gas loop or the CO₂ removal system. Indorama has had releases of ethylene oxide above the reportable quantity from the reclaim compressor gas and reabsorber towers from F4, F6, and F8.
12. Permitted potential to emit values do not support group 2 determinations for the CO₂ vents and process wastewater for F4, F6, and F8.

Indorama disclosed the potential violations to the Texas Commission on Environmental Quality (TCEQ) at some point. While the NEIC field team did not ascertain exactly when this disclosure was made, it appears there was periodic written correspondence between Indorama and TCEQ regarding the audit and the findings starting as far back September 27, 2019. The *Federal Register* notice for the EPA Audit Policy states that EPA will generally defer to state penalty mitigation for self-disclosures if the state policy meets minimum requirements. The notice also states that EPA is opposed to state statutory and regulatory audit laws that provide immunity, privilege, or shield evidence of wrongdoing and inhibit investigations.

The NEIC field team did not find any evidence that disclosure to EPA had been made, or that EPA's audit policy was invoked. NEIC requested information about disclosure of the violations in the third-party audit to EPA during and following the on-site inspection.

According to the April 11, 2000, *Federal Register* notice on the EPA Audit Policy, to take advantage of the EPA audit policy, a facility is required to:

1. Discover the violation through an environmental audit or the implementation of a compliance management system.
2. Discover the violation voluntarily and not as a result of a legally required monitoring, sampling, or auditing procedure.
3. Disclose the violation to EPA within 21 days of discovery.
4. Independently discover and disclose the violation before EPA or another regulator would likely have identified the violation.
5. Correct the violation within 60 days from the date of discovery.
6. Take actions to prevent the recurrence of the violation.
7. The violations may not be repeat violations.
8. The violations may not have resulted in serious actual harm, presented an imminent and substantial endangerment, or violated specific terms of an administrative or judicial order or consent agreement.
9. Cooperate with EPA's investigation of the disclosure.

As of at least June 30, 2022, there are outstanding potential violations identified by the third-party audit that Indorama has not corrected (**Appendix L**). Based on this and the lack of disclosure of the violations to the EPA, Indorama does not meet requirements 3 and 5 above.

Observation 9

Observation Summary: The NOCS submitted for the A3 olefins and oxides process has not been updated to reflect current operating scenarios.

Citation:

40 CFR Part 63 Subpart YY – National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards

40 CFR § 63.1110 Reporting requirements.

(d) Notification of Compliance Status –

(1) Contents. *The owner or operator shall submit a Notification of Compliance Status for each affected source subject to this subpart containing the information specified in paragraphs (d)(1)(i) and (ii) of this section. ... For flares subject to the requirements of § 63.1103(e)(4), the owner or operator of an ethylene production affected source shall also submit the information listed in paragraph (d)(1)(iv) of this section in a supplement to the Notification of Compliance Status within 150 days after the first applicable compliance date for flare monitoring. ...*

- (i) Except as specified in paragraphs (d)(1)(iv) and (v) of this section, the Notification of Compliance Status shall include the information specified in this subpart and the subparts referenced by this subpart. Alternatively, this information can be submitted as part of a title V permit application or amendment.*
- (ii) The Notification of Compliance Status shall include a statement from the owner or operator identifying which subpart he or she has elected to comply with, where given a choice, as provided for in § 63.1100(g).*

(2) Due Date. *The owner or operator shall submit the Notification of Compliance Status for each affected source 240 days after the compliance date specified for the affected source under this subpart, or 60 days after completion of the initial performance test or initial compliance assessment/subsequent required performance test or subsequent compliance assessment, whichever is earlier. Notification of Compliance Status reports may be combined for multiple affected sources as long as the due date requirements for all sources covered in the combined report are met. [Emphasis added]*

Evidence:

Appendix M – NOCS for A3 Olefins Unit

Appendix N – Title V Permit for A3 Olefins Unit

Field logbooks

Description of Observation: NEIC compared the NOCS (**Appendix M**) submitted in March 2006 for the A3 olefins unit with the actual operations of the facility and identified several differences, including:

- The NOCS states that AD tank T-O-126 is controlled by a carbon adsorber that complies with 40 CFR Part 63, Subpart SS. At the time of the inspection, emissions from T-O-126 were routed to a bladder tank and then to a flare (see the storage tanks description on

Observation 9

pages 5-6). The NOCS also states that the facility elected to comply with 40 CFR Part 63.985(b)(1)(i) by submitting a design evaluation. The NOCS also indicates the monitoring parameters for the carbon adsorber, including monitoring for breakthrough, which was determined to be 100 ppm VOCs.

- The NOCS states that AD tank T-O-127 is controlled by a flare that complies with 40 CFR Part 63, Subpart SS. At the time of the inspection, emissions from T-O-127 were routed to a bladder tank and then to a flare (see the storage tanks description on pages 5-6). The NOCS does not mention the bladder tank.
- The NOCS states that AD tank T-O-87 is controlled by an internal floating roof complying with 40 CFR Part 63, Subpart WW. At the time of the inspection, T-O-87 had both an internal floating roof and a closed-vent system that routes emissions to a bladder tank and then a flare.
- The NOCS states that AD tank T-O-87 is controlled by an internal floating roof complying with 40 CFR Part 63, Subpart WW. At the time of the inspection, T-O-87 had both an internal floating roof and a closed-vent system that routes emissions to a bladder tank and then a flare.
- The NOCS states that no transfer racks are associated with the A3 olefins unit. The Title V permit for the A3 olefins unit (**Appendix N**) includes RSELTRKW, which is an above-ground loading rack subject to 40 CFR Part 63, Subpart YY.

Additionally, the NOCS submitted for the A3 olefins unit, which includes the AD tanks, indicates that tanks T-O-126 and T-O-127 meet the requirements of 40 CFR Part 63, Subpart YY, by complying with 40 CFR Part 63, Subpart SS, and that AD tanks T-O-87 and T-O-88 meet the requirements of 40 CFR Part 63, Subpart YY, by complying with 40 CFR Part 63, Subpart WW.

The applicability for these tanks appears to be incorrectly determined. The AD tanks store wastewater as defined by 40 CFR § 63.1101 because the annual average concentration of benzene is greater than 10,000 ppm and it is discarded from the ethylene production process, which is subject to 40 CFR Part 63, Subpart YY. Analytical data provided by Indorama shows the benzene concentration in the organic phase of the AD tanks to be >43% by weight (>430,000 ppm), and at least 50% of the material managed in the AD tanks is the organic aromatic distillate. As a result, the AD storage tanks are subject to the wastewater provisions in 40 CFR § 63.1106. Note, the Table 9 reference in 40 CFR § 63.1101 points to Table 9 of 40 CFR Part 63, Subpart G.

40 CFR § 63.1106 requires the AD tanks to comply with the HON process wastewater requirements in 40 CFR §§ 63.132-63.148. Per 40 CFR § 63.132(a)(1)(i); the wastewater stream is a group 1 wastewater stream because the concentration of benzene in the AD tanks is greater than 10,000 ppm. Requirements for group 1 wastewater streams are in 40 CFR § 63.133. Additionally, 40 CFR § 63.132(a)(2)(ii)-(iv) requires compliance with 40 CFR §§ 63.138, 63.143, 63.146, and 63.147.

40 CFR § 63.133 provides multiple compliance options, including using a fixed-roof tank, a fixed-roof tank with a closed-vent system that routes emissions to a control device, an internal floating roof tank, or an external floating roof tank. At the time of the inspection,

Observation 9

Indorama was relying on both (1) a fixed-roof tank with a CVS that routes emissions to a control device and an internal floating roof tank for tanks T-O-126 and T-O-127 and (2) a fixed roof that routes emissions via a CVS to a control device for tanks T-O-87 and T-O-88.

The changes made to the operations at the A3 olefins unit may have required that the compliance demonstration (e.g., performance test or design evaluation) for the chosen compliance option to have been updated, along with required monitoring parameters and monitoring parameter ranges for the AD tanks per 40 CFR § 63.1110(d)(2).

Observation 10

Observation Summary: Continuous parameter monitoring data indicate Indorama has been over-steaming the north, central, and south flares. As a result, the combustion gas mixture (vent gas, sweep gas, steam assist) has had insufficient heat content (less than 300 Btu/standard cubic foot [SCF]) to ensure adequate combustion. Indorama thus has not operated and maintained the three flares in conformance with their design and applicable performance standards.

Citation:

40 CFR Part 60 – Standards of Performance for New Stationary Sources

40 CFR Part 60 Subpart A – General Provisions

40 CFR § 60.18 General control device and work practice requirements.

(b) Flares. *Paragraphs (c) through (f) apply to flares.*

(c)(3) *An owner/operator has the choice of adhering to either the heat content specifications in paragraph (c)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (c)(4) of this section, or adhering to the requirements in paragraph (c)(3)(i) of this section.*

(ii) 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... The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.

40 CFR Part 61 Subpart FF – National Emission Standard for Benzene Waste Operations

§ 61.341 Definitions.

Oil-water separator *means a waste management unit, generally a tank or surface impoundment, used to separate oil from water...*

§ 61.347 Standards: Oil-water separators.

Observation 10

(a) Except as provided in § 61.352 of this subpart, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart:

(1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device.

(ii) The closed-vent system and control device shall be designated and operated in accordance with the requirements of § 61.349 of this subpart.

40 CFR § 61.349 Standards: Closed-vent systems and control devices.

(a)(2) The control device shall be designed and operated in accordance with the following conditions:

(iii) A flare shall comply with the requirements of 40 CFR 60.18.

New Source Review Permit 19823 – Special Conditions

10. Flares shall be designed and operated in accordance with the following requirements:

D. The permit holder shall install a continuous flow monitor and calorimeter that provide a record of the vent stream flow and Btu content to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed.

Evidence: See Observation 2.

Appendix N – Title V Permit for the A3 Olefins Unit

Appendix O – Storage Tank Data

Appendix P – New Source Review Permit 19823: Special Conditions and Technical Review

Appendix Q – Flare Continuous Monitoring Data

Appendix R – NEIC Calculation of Indorama NHVcz Based on Flare Data Adjusted for H₂

Description of Observation: As described in Observation 2, the AD tanks are operated as oil-water separators that are managing benzene waste. According to the “Applicable Requirements Summary” table in the A3 olefins unit Title V permit (permit No. O2288) (**Appendix N**), the AD tanks (RSET087, RSET088, RSET0126, and RSET0127) are subject to 40 CFR Part 61, Subpart FF, specifically the control requirements in 40 CFR § 61.343, 40 CFR § 61.349, and, by reference, 40 CFR § 60.18. 40 CFR § 61.343 covers standards for tanks. While NEIC has determined the AD tanks are functioning as oil-water separators, the requirements to design a closed-vent system and control device pursuant to 40 CFR § 61.349 (which references 40 CFR § 60.18) appear in the standards for both tanks (40 CFR § 61.343(a)(1)(ii)) and oil-water separators (40 CFR § 61.347(a)(1)(ii)). In addition, the “Applicable Requirements Summary” table of the A3 olefins unit Title V permit (**Appendix N**) states the AD tanks also are subject to the “applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY.”

Observation 10

Applicability of 40 CFR Part 61, Subpart FF and 40 CFR Part 63, Subpart YY to the AD tanks is also stated in the storage tank data provided by Indorama (**Appendix O**). In the storage tank data (**Appendix O**) table, applicable Clean Air Act regulations for tanks T-O-126 and T-O-127 are FF and YY, understood to be 40 CFR Part 61, Subpart FF, and 40 CFR Part 63, Subpart YY. In the storage tank data (**Appendix O**) table, applicable Clean Air Act regulations for tanks T-O-87 and T-O-88 are Kb, FF, and YY, understood to be 40 CFR Part 60, Subpart Kb; 40 CFR Part 61, Subpart FF; and 40 CFR Part 63, Subpart YY.

The north and central flares that control emissions from the AD tanks are, therefore, subject to the control requirements in 40 CFR § 60.18, incorporated by reference in 40 CFR § 61.349(a)(2)(iii). The flares are also subject to control requirements in 40 CFR Part 63, Subpart YY, but for simplicity, this observation focuses on BWON applicability since the current flare requirements are the same or very similar to those in Subpart YY and are cross-referenced from Subpart YY.

Although only the north and central flares control emission from the AD tanks, all three flares are subject to the control requirements in 40 CFR § 60.18, according to the “Applicable Requirements Summary” table of the A3 olefins unit Title V permit (**Appendix N**). UER037 (flare No. 3, south flare), UER044 (flare No. 1, north flare), and UER046 (flare No. 2, central flare) “shall comply with paragraphs (c)-(f) of § 60.18,” including the heat content requirement in 40 CFR § 60.18(c)(3)(ii) (**Appendix N**).

The north, central, and south flares have continuous monitoring data for flow and heat input of vent gas as required by New Source Review permit 19823 special condition 10D (**Appendix Q**). The technical review document for New Source Review permit 19823 describes the north (flare No. 1) and central (flare No. 2) flares as “flares that receive captured VOC vapors from several process streams” (page 6) (**Appendix R**).

NEIC requested and received available continuous parameter monitoring data for the period April 16-October 21, 2022, for the north, central, and south flares (**Appendix Q**). Indorama representatives stated that heat input at the flares is measured before steam addition. NEIC used equations from 40 CFR § 63.670 (l) and (m) and the provided monitoring data to calculate the net heating value (adjusted for hydrogen content) of the combined vent gas, sweep gas, and steam assist for each hour during this period (**Appendix R**). Based on these calculations, the net heating value of the combined gases (process gas, natural gas, and steam assist) being combusted at the north, central, and south flares was less than the currently applicable 300 Btu/SCF specified in 40 CFR § 60.18(c)(3) more than 71%, 14%, and 96%, respectively, of operating hours during the period for which NEIC received data (April 16-October 21, 2022) (**Appendix R**).

The north, central, and south flares are not currently subject to the equations cited above in 40 CFR § 63.670 (l) and (m) and the 270 Btu/SCF net heat value of combustion zone gas (15-minute average) requirement specified in 40 CFR § 63.1103(e)(4) until July 6, 2023. The 270 Btu/SCF requirement and associated equations were originally set forth in the National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries (40 CFR Part 63, Subpart CC) as an indicator of whether a steam-assisted flare is adding excessive assist steam, which would indicate the flare is not being operated properly to achieve the required

Observation 10

control. These requirements were later incorporated in the Generic Maximum Achievable Control Technology Standards for ethylene plants (40 CFR Part 63, Subpart YY) for the same purpose with an applicability date of July 6, 2023.

Based on NEIC's calculations, the net heating value of the combined gases (process gas, natural gas, and steam assist) combusted at the north, central, and south flares was less than the 270 Btu/SCF value more than 61%, 10%, and 95%, respectively, of operating hours during the period for which NEIC received data (April 16-October 21, 2022) (**Appendix R**). These data indicate that the north, central, and south flares have been operated with excessive amounts of assist steam and have not maintained adequate heat content for the gases being combusted, resulting in reduced combustion efficiency and destruction efficiency.

Observation 11

Observation Summary: NEIC field team members observed emissions from a propane bullet tank during the on-site inspection.

Citation:

Title V Permit No. 02288 Special Terms and Conditions: Emission Limitations and Standards, Monitoring and Testing, Recordkeeping and Reporting

- 4. For storage vessels maintaining working pressure as specified in 30 TAC Chapter 115, Subchapter B, Division 1: "Storage of Volatile Organic Compounds," the permit holder shall comply with the requirements of 30 TAC § 115.112(a)(1).*

Title 30 Texas Administrative Code (TAC) § 115.112 Control Requirements

(a) The following requirements apply in the Beaumont-Port Arthur, Dallas-Fort Worth, and El Paso areas, as defined in 30 TAC § 115.10. ...

- (1) No person shall place, store, or hold in any storage tank any volatile organic compounds (VOC) unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table I(a) of this paragraph for VOC other than crude oil and condensate or Table II(a) of this paragraph for crude oil and condensate.*

Title 30 TAC § 115.112(a)(1) Table I(a)

True Vapor Pressure (pounds per square inch absolute (psia))	Storage Capacity (gallon (gal))	Control Requirements
≥ 11 psia	> 25,000 gal	Submerged fill pipe and Vapor control system

Evidence:

Appendix C – OGI Survey Images and Videos

Appendix N – Title V Permit for the A3 Olefins Unit
Field logbooks

Observation 11

Description of Observation: During the on-site inspection, NEIC field team members observed emissions from a bullet tank, described as a propane bullet tank by Indorama representatives, using an IR camera (**Appendix C**, videos 335 and 337). The propane bullet tank is located in the R&S area. At the time of observation, NEIC field team members notified the facility's operators, who also confirmed the emissions using their own IR camera. Operators were then sent to close the valve on the propane bullet, and the emissions from the vent pipe ceased, demonstrating observed emissions were not the result of an upset that caused the pressure relief valve to be in the open position.

Propane bullet tanks are designed to be operated under significant pressure to keep propane in a liquid state and without emissions to the atmosphere. Based on a November 21, 2022, email to NEIC from Indorama, the propane bullets do not require permitting because they have no emissions. Presumably, this is because the tanks are intended to be operated under significant positive pressure and are not open to atmosphere. According to the Title V permit and the Texas Administrative Code (30 TAC § 115.112(a)(1)), the propane bullet tanks are required to maintain a working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or have a vapor control system and are not permitted to vent emissions directly to the atmosphere. Based on NEIC's IR camera observations and the apparent open pressure relief valve, emissions were allowed to be vented to atmosphere from tank FO-50.

On-site Monitoring Results

Indorama Ventures Oxides LLC – Port Neches Operations, Port Neches, Texas (VP1446)

Method 21 Monitoring Summary – Leaks Identified per Method 21 – Ethylene Plant (A3)

Component Type:	Leak Location:	NEIC Leak Reading	Confirmation Reading	Leak Description:	FLIR Video/Photo No.
Compressor	C-A3-5	8,700 ppm	33%	Compressor seal leaking; Indorama identified the compressor seal leak on 8/7/2018 and placed the leak on delay of repair (DOR).	417 and 418
Connector	C-A3-5	1.9%	35%	Inlet connector on compressor.	
Connector	C-A3-5	4,000 ppm	10,762 ppm	Leak on inlet flanged pipe to compressor.	
Connector	C-A3-5	555 ppm	999 ppm	Leak on connector to pipe coming off flanged inlet line to compressor.	419
Pump	P-A3-33A	1.32%	54,857 ppm	#1 propylene tower reflux pump.	
Pump	P-A3-11B	3.73% then flameout	2,095 ppm then flameout	Ethylene tower reflux pump.	329
Valve	P-A3-11B	1,300 ppm	2,696 ppm	Valve behind pump P-A3-11B; valved covered in ice.	327
Process Drain	F-A3-45	1,900 ppm then flameout	8,916 ppm	Process drain under combined low pressure flare knockout.	
Connector	T-O-88	3.72% then flameout	216,979 ppm	Thief hatch on top of tank T-O-88.	427
PRD	T-O-88	1.01%	50,844 ppm	Vacuum break side of the conservation vent on top of T-O-88.	428
Connector	3 rd stage lube oil line	>8,000 ppm		Leaks at 2 flanges on compressor 3 rd stage lube oil line; both over 8,000 ppm	326
Pump	Ethylene tower	>30,000 ppm		Ethylene tower reflux pump leaking past insulation	327
Open-ended line	AD Pump A3-38A	87,000 ppm		Open-ended line is from the pump drain to an open ditch.	328
Plug	AD Pump A3-38A	1,900 ppm	10,000 ppm	Plug on debutanizer bottoms AD pump A3-38A	
Drain	F-A3-45	2,000 ppm then flameout	8,900 ppm then flameout	Drain hub under knockout tank F-A3-45	
Connector	T-O-127	20,000 ppm		Level Transmitter Hatch (LT-6422) on top of tank T-O-127	333
Connector	T-O-127	8,000 ppm		Gauge hatch on top of tank T-O-127	332
Connector	T-O-127	10,000 ppm		White, rectangular hatch on top of tank T-O-127	
Connector	T-O-126	30,000 ppm		Gauge hatch on top of tank T-O-126	331

Connector	T-O-126	600 ppm		Small, rectangular hatch on top of tank T-O-126	
PRD	T-O-126	40,000 ppm then flameout		PRD on top of tank T-O-126	331
Vent	F-O-114A	8,000 ppm		Vent on top of bladder tank F-O-114A	334
Vent	F-O-114B	4,200 ppm		Vent on top of bladder tank F-O-114B	336
Vent	F-O-114B	4,300 ppm		Vent on top of bladder tank F-O-114B	336

Method 21 Monitoring Summary – Leaks Identified per Method 21 – Ethylene Oxide Plant (F6)

Component Type:	Leak Location:	NEIC Leak Reading	Confirmation Reading	Leak Description:	FLIR Video No.
Connector	C-F6-131	10.52% then flameout	18,290 ppm	Leak on connector on compressor C-F6-131. Connector line labeled “Non Drive End Leakage.”	
Connector	C-F6-31	31,158 ppm	300,066 ppm	Leak on connector on valve in front of gauge labeled F6-PT-3D	
Connector	F6 Tower	1,200 ppm	3,698 ppm	Leak on connector on check valve inlet labeled “Inlet #6” and the line was labeled “Cycle Gas Inlet to 6 RXTR.”	
Plug	Receiving and Shipping	4,040 ppm	11,247 ppm	Blue hose end on pyronaphtha truck loading area on the south side of the truck loading at the north end of 5 th street near the AD washoil loadout sump.	
Pump	P-51-B	8,000 ppm	4,544 ppm	EO pump	
Connector	EO rail loading	650 ppm	4,032 ppm	Leak on liquid loading connection to rail car	
Connector	EO rail loading	>10,000 ppm	33,346 ppm	Leak on vapor return connection from rail car	341
Plug	EO rail loading	>10,000 ppm	37,970 ppm	Plug on valve near tag 02096	
Connector	EO rail loading	>2,000 ppm	3,600 ppm	Leak on vapor return line for one of the EO rail loading bays	

Open-Ended Lines

Open-Ended Line Location:	Description:
AD Pump A3-38A	Debutanizer bottoms AD pump. Open-ended line is from the pump drain to an open ditch.

HUNTSMAN

April 5, 2019

Certified Mail – Return Receipt Requested

7005 0390 0005 2682 7741

Ramiro Garcia
Texas Commission on Environmental Quality
Office of Compliance and Enforcement (MC-174)
P. O. Box 13087
Austin, Texas 78711-3087

**Re: Benzene Waste Operations – NESHAP Subpart FF
Annual TAB Report – 2018
Huntsman Petrochemical LLC
Port Neches Operations
TCEQ Account No. JE-0052-V
Regulated Entity No. RN100219252**

To Whom It May Concern:

The National Emission Standard for Hazardous Air Pollutants (NESHAP) for Benzene Waste Operations, Subpart FF of 40 CFR 61, requires that affected facilities demonstrate regulatory compliance annually. In accordance with these regulations, Huntsman Petrochemical LLC (Huntsman) hereby submits this report summarizing the status of each applicable waste stream for its Port Neches Operations (PNO) site. Based on the data provided in the enclosed report, the total annual benzene (TAB) quantity for applicable waste streams for the year 2018 is determined in accordance with §61.355(a), totals 23.87 mega grams (Mg). The benzene quantity of exempt streams in accordance with §61.342(c) (3) (ii), totals 0.99 Mg. Data provided in the attached table identifies each waste stream and other pertinent information.

Huntsman certifies that the equipment necessary to comply with 40 CFR 61, Subpart FF benzene waste operations regulations has been installed and that all inspections and tests have been performed.

All information contained in this submittal was compiled by a knowledgeable and competent environmental staff member of Huntsman Petrochemical LLC. I certify that, based on information and belief formed after reasonable inquiry, the statements and information contained in the attached documents are true, accurate, and complete. Should there be any questions regarding this submittal, please contact Leslie Stuart at (409) 723-3753.

Sincerely,



Kim Knotts – CSP, CHMM
EH&S Sr. Manager, Port Neches Operations

Enc: 2018 TAB Report, Port Neches Performance Products
cc: Sarah Kirksey, Air Program Manager, TCEQ Region 10 – Beaumont

7005 0390 0005 2682 7758

HUNTSMAN CORPORATION

2701 Spur 136 • P.O. Box 847 • Port Neches, Texas 77651 • 409-722-8381 • Fax 409-723-3355

Environmental File – PN.10.050.NESHAP.All.Benzene NESHAP FF Annual Report
2018

HUNTSMAN PETROCHEMICAL LLC 2018 BENZENE QUANTITIES FOR PNO FACILITY

NEICVP1446E01

STREAM DESCRIPTION	SUBPART FF CONTROLS		(Ref. 4) STREAM TYPE	WASTE QUANTITY		RANGE OF CONC.	FLOW-WEIGHTED BENZENE CONC.	BENZENE QUANTITY
				(lbs/yr)	(Mg/yr)			
61.357(a)(2)	61.357(a)(2)	Ref #	61.357(a)(3)(i-v)					
Contaminated Soil (1104519H)	exempt	2	8,250	3.75	1000	1000.00	0.0037	
	exempt	2	1,349,640	612.74	1	1.00	0.00061	
Contaminated Soil (4129301H)	exempt	2	9,700	4.40	17	17.00	0.00007	
Diesel cont. with Benzene (4185219H)	exempt	3	950	0.43	500	500.00	0.00022	
Hazardous Lab Pack (4703009H)	exempt	2	652	0.30	10000	10000.00	0.0030	
Well Water (4317119H)	exempt	2	300	0.14	10000	10000.00	0.0014	
Plant Residual Slop (5014219H)	exempt	2	546,655	248.18	10.485	10.49	0.0026	
O&O A-3 Sump / Wash Oil / Quench to T-O-88/126	exempt	2	84,133,569.31	38,196.64	1.0 - 24.0	19.67	0.7513	
AD Washoil Loading Rack Sump (Controlled as of 09/09)	yes	-	3,686.00	1.67	300,000.00	300000.00	0.5020	
F-A3-4 First Stage Suction Drum	exempt	2	0.00	0.00	47.0 - 132.0	85.63	0.0000	
T-A3-46 Tar Tank Drain	exempt	2	14,336,126.00	6,508.60	19.23 - 65.18	34.52	0.2247	
O&O Quench Drum to WW Stripper	yes	-	313,984,887.91	142,549.14	69.6 - 184	129.53	18.4644	
O&O Spent Caustic to WW Stripper	yes	-	37,502,621.69	17,026.19	31 - 370	230.00	3.9160	
							TAB	23.87

Streams Excluded from TAB Calculation (H₂O <10%) (61.342(a)(1))

2018							
Excluded from TAB							0.0000

REFERENCES:

- Exempt from control requirements (<10 ppm benzene) (61.342(c)(2))
- Exempt from control requirements (benzene quantity sum <2 Mg/yr) (61.342(c)(3)(ii)) ==>
- Exempt from control requirements (annual avg. water content < 10 % (61.342(a)(1))
- Process Wastewater (PWW); Product Tank Draw-down (PTD); Landfill Leachate (LL)

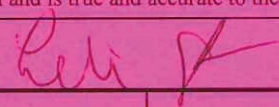
0.99 Mg

Huntsman PNO - Environmental Sign-off Sheet

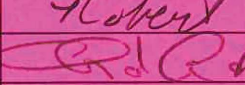
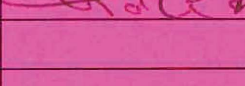
To be used for ALL regulatory submittals and retained in the files. Minimum requirement is the Submitter, Environmental Specialist, Team Leader, and the Operations Manger/Manager's for the area submitted sign-off.

Name of Report:	NESHAP FF Tab Report		
Brief Description, Highlights of Report:	Required by 40 CFR 61 Subpart FF regulating benzene waste operations.		
Plant Unit:	A3		
To be Signed by:	Chad Anderson		
Regulatory Mandated Due Date?	YES	Due Date:	4/7/2019

NOTE: Regulatory mandated due dates must be post-marked on the respective due date indicated above.

Submittal Prepared By:	Leslie Stuart		
This document was prepared by me or under my direction and is true and accurate to the best of my knowledge.			
Signature:			Date: 3/29/19
Document had legal review?	NO	Attorney:	Date:

The following individuals certify that they have reviewed this document and it is true and correct to the best of their knowledge.

Routing:					
Name	Title	Location	Date Received	Signature	Date Forwarded
Jason Begnaud	Environmental Team Lead	1J3	3/29/19		3/29/19
Todd A McLane	Environmental Manager	1J3	4/1/19		4/1/19
Kim Knotts	Sr. EHS Manager	2J2	3/29/19		3/29/19
Robert Hoyt	Operations Manager	A3CTRL	4-1-19		4-1-19
Chad Anderson	Site Director	2J2	4/1/19		4/1/19

CALL SARAH ABSHIRE AT EXT 3368 FOR DOCUMENT TO BE PICKED UP FOR SUBMITTAL
DATE SENT TO OR PICKED UP BY SARAH ABSHIRE:
DATE SUBMITTED:

HUNTSMAN PETROCHEMICAL LLC

2019 BENZENE QUANTITIES FOR PNO FACILITY

STREAM DESCRIPTION	SUBPART FF CONTROLS	(Ref. 4) STREAM TYPE	WASTE QUANTITY		RANGE OF CONC.	FLOW-WEIGHTED BENZENE CONC.	BENZENE QUANTITY
			(lbs/yr)	(Mg/yr)			
61.357(a)(2)		Ref #	61.357(a)(3)(i-v)				
Contaminated Sludge (1104519H)	exempt	2	2,000	0.91	1000	1000.00	0.0009
Hazardous Lab Pack (4703009H)	exempt	2	848	0.38	10000	10000.00	0.0038
Gasoline/Water (4168219H)	exempt	2	1,200	0.54	10	10.00	0.0001
Well Water (4317119H)	exempt	2	1,000	0.45	10000	10000.00	0.0005
Tank Bottoms (4315319H)	exempt	2	300	0.14	10000	10000.00	0.0001
Plant Residual Slop (5014219H)	exempt	2	781,440	354.77	1.21	1.21	0.0004
O&O A-3 Sump / Wash Oil / Quench to T-O-88/126	exempt	2	55,897,059.55	25,377.27	1.0 - 24.0	19.67	0.4992
AD Washoil Loading Rack Sump (Controlled as of 09/09)	yes	-	3,686.00	1.67	300,000.00	300000.00	0.5020
F-A3-4 First Stage Suction Drum	exempt	2	0.00	0.00	47.0 - 132.0	85.63	0.0000
T-A3-46 Tar Tank Drain	exempt	2	14,336,126.00	6,508.60	19.23 - 65.18	34.52	0.2247
O&O Quench Drum to WW Stripper	yes	-	347,485,071.44	157,758.22	69.6 - 184	129.53	20.4344
O&O Spent Caustic to WW Stripper	yes	-	46,397,321.40	21,064.38	31 - 370	230.00	4.8448
						TAB	26.51

Streams Excluded from TAB Calculation (H₂O <10%) (61.342(a)(1))

N/A for 2019							
REFERENCES:						Excluded from TAB	0.0000

- Exempt from control requirements (<10 ppm benzene) (61.342(c)(2))
- Exempt from control requirements (benzene quantity sum <2 Mg/yr) (61.342(c)(3)(ii)) ==>
- Exempt from control requirements (annual avg. water content < 10 % (61.342(a)(1))
- Process Wastewater (PWW); Product Tank Draw-down (PTD); Landfill Leachate (LL)

0.73 Mg

Indorama Ventures Oxides LLC

2020 BENZENE QUANTITIES FOR PNO FACILITY

STREAM DESCRIPTION	SUBPART FF CONTROLS	(Ref. 4) STREAM TYPE	WASTE QUANTITY		RANGE OF CONC.	FLOW- WEIGHTED BENZENE CONC.	BENZENE QUANTITY
			(lbs/yr)	(Mg/yr)			
61.357(a)(2)		Ref #	61.357(a)(3)(i-v)				
Contaminated Sludge (1104519H)	exempt	2	5,300	2.41	1000	1000.00	0.0024
Hazardous Lab Pack (4703009H)	exempt	2	650	0.30	10000	10000.00	0.0030
Dessicant (1140319H)	exempt	2	87,182	39.58	103,862	103.86	0.0411
Well Water (4317119H)	exempt	2	1,200	0.54	10000	10000.00	0.0005
Plant Residual Slop (5014219H)	exempt	2	387,780	176.05	1.21	1.21	0.0002
O&O A-3 Sump / Wash Oil / Quench to T-O-88/126	exempt	2	50,387,721.98	22,876.03	1.0 - 24.0	19.67	0.4500
AD Washoil Loading Rack Sump (Controlled as of 09/09)	yes	-	3,686.00	1.67	300,000.00	300000.00	0.5020
F-A3-4 First Stage Suction Drum	exempt	2	0.00	0.00	47.0 - 132.0	85.63	0.0000
T-A3-46 Tar Tank Drain	exempt	2	14,336,126.00	6,508.60	19.23 - 65.18	34.52	0.2247
O&O Quench Drum to WW Stripper	yes	-	329,391,042.42	149,543.53	69.6 - 184	129.53	19.3704
O&O Spent Caustic to WW Stripper	yes	-	41,097,181.20	18,658.12	31 - 370	230.00	4.2914
						TAB	24.89

Streams Excluded from TAB Calculation (H₂O <10%) (61.342(a)(1))

N/A for 2020							
REFERENCES:						Excluded from TAB	0.0000

1. Exempt from control requirements (<10 ppm benzene) (61.342(c)(2))
2. Exempt from control requirements (benzene quantity sum <2 Mg/yr) (61.342(c)(3)(ii)) ==>
3. Exempt from control requirements (annual avg. water content < 10 % (61.342(a)(1))
4. Process Wastewater (PWW); Product Tank Draw-down (PTD); Landfill Leachate (LL)

0.72 Mg

Indorama Ventures Oxides LLC

2021 BENZENE QUANTITIES FOR INDORAMA VENTURES OXIDES

STREAM DESCRIPTION	SUBPART FF CONTROLS	(Ref. 4) STREAM TYPE	WASTE QUANTITY		RANGE OF CONC.	FLOW- WEIGHTED BENZENE CONC.	BENZENE QUANTITY
			(lbs/yr)	(Mg/yr)			
61.357(a)(2)	61.357(a)(2)	Ref #					
Contaminated Sludge (1104519H)	exempt	2	2,600	1.18	1000	1000.00	0.0012
Hazardous Lab Pack (4703009H)	exempt	2	0	0.00	10000	10000.00	0.0000
Dessicant (1140319H)	exempt	2	0	0.00	103,862	103.86	0.0000
Well Water (4317119H)	exempt	2	0	0.00	10000	10000.00	0.0000
Plant Residual Slop (5014219H)	exempt	2	509,400	231.27	353,473	353.47	0.0817
O&O A-3 Sump / Wash Oil / Quench to T-O-88/126	exempt	2	196,771,985.69	89,334.48	1.0 - 24.0	19.67	1.7572
AD Washoil Loading Rack Sump (Controlled as of 09/09)	yes	-	3,686.00	1.67	300,000.00	300000.00	0.5020
F-A3-4 First Stage Suction Drum	exempt	2	0.00	0.00	47.0 - 132.0	85.63	0.0000
T-A3-46 Tar Tank Drain	exempt	2	516,362.76	234.43	19,23 - 65.18	34.52	0.0081
O&O Quench Drum to WW Stripper	yes	-	118,911,697.25	53,985.91	69.6 - 184	129.53	6.9928
O&O Spent Caustic to WW Stripper	yes	-	44,978,213.40	20,420.11	31 - 370	230.00	4.6966
						TAB	14.04

Streams Excluded from TAB Calculation (H₂O <10%) (61.342(a)(1))

N/A for 2021							
REFERENCES:						Excluded from TAB	0.0000

1. Exempt from control requirements (<10 ppm benzene) (61.342(c)(2))
2. Exempt from control requirements (benzene quantity sum <2 Mg/yr) (61.342(c)(3)(ii)) ==>
3. Exempt from control requirements (annual avg. water content < 10 % (61.342(a)(1))
4. Process Wastewater (PWW); Product Tank Draw-down (PTD); Landfill Leachate (LL)

1.85 Mg

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FORM R REPORTS

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Reference Point/Description	Latitude	Longitude	Collection Method	Accuracy Value
CENTER OF A FACILITY OR STATION	29.990148	-93.946735	INTERPOLATION-MAP	30

RCRA ID NUMBER
TXD008076846

NPDES PERMIT NUMBER
TX0005070

UIC ID NUMBER
NO DATA

To correct the FRS latitude, longitude or program ID values click on the "Report an Error" button in the top right corner of this page.Facilities wishing to correct other data elements with the FORM R or FORM A should refer to [the related TRI-MEweb tutorial](#).

For more information, see [Collection of Latitude, Longitude and Program ID Data Has Been Discontinued](#).

PART I. FACILITY IDENTIFICATION INFORMATION (FORM R)

DOCUMENT CONTROL NUMBER: 1321219853912

Facility Registry System ID: 110000599567

Section 1. Reporting Year

Reporting Year: 2021

Section 2. Trade Secret Information

2.1 Trade Secret: NO

2.2 Sanitized Copy: Unsanitized

Section 3. Certification

CERTIFYING OFFICIAL'S NAME	CERTIFYING OFFICIAL'S TITLE	CERTIFYING OFFICIAL'S SIGNATURE	DATE SIGNED
KIMBERLY HOYT	SITE DIRECTOR	Electronic	22-JUN-22

Section 4. Facility Identification

TRI Facility ID: 77651TXCCHHWY36

4.1 Facility Name and Address

Facility Information

NAME	STREET	CITY	COUNTY	STATE	ZIP CODE
HUNTSMAN PETROCHEMICAL LLC PORT NECHES FACILITY	6001 HWY 366	PORT NECHES	JEFFERSON	TX	77651

BIA Tribal Code	Tribe
NO DATA	NO DATA

Mailing Information

NAME	STREET	CITY	STATE	ZIP CODE
HUNTSMAN PETROCHEMICAL LLC PORT NECHES FACILITY	PO BOX 847	PORT NECHES	TX	77651

PROVINCE	COUNTRY (NON - US)
NEICVP1446E01	

NO DATA	NO DATA
---------	---------

4.2 Facility Classification

ENTIRE FACILITY	PARTIAL FACILITY	FEDERAL FACILITY	GOCO FACILITY
YES	NO	NO	NO

4.3 Technical Contact

Not Available to the Public as this information is only for Intranet.

4.4 Public Contact

NAME	PHONE	EXTENSION
KIMBERLY HOYT	4097233261	No Data

4.5 NAICS Codes

NAICS CODE	PRIMARY	NAICS CODE DESCRIPTION
325199	YES	All Other Basic Organic Chemical Manufacturing

4.7 Dun Numbers

DUNS NUMBER
NA
189049570

5. Parent Company Information

Parent Company Name: HUNTSMAN INTERNATIONAL LLC

Parent Company DUNS Number: 147173017

PART II. CHEMICAL - SPECIFIC INFORMATION

DOCUMENT CONTROL NUMBER: 1321219853912

Section 1. Toxic Chemical Identity

- 1.1 CAS Number: 71-43-2 PFAS Indicator: NO
- 1.2 Toxic Chemical or Chemical Category Name: Benzene
- 1.3 Generic Chemical Name: NA

1.4 Distribution of Each Member of the Dioxin and Dioxin like Compounds Category

NA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NO																	

Section 2. Mixture Component Identity

2.1 [Supplier Provided Generic Chemical Name](#): NA

Section 3. Activities and Uses of the Toxic Chemical

3.1 Manufacture the Toxic Chemical:

Produce : YES	Import : NO	On-Site Use/Processing : NO
Sale/Distribution : NO	Byproduct : YES	Impurity : NO

3.2 Process the Toxic Chemical:

Reactant :	YES
----------------------------	-----

Sub-Uses:

P103	Intermediates
------	---------------

Formulation Component :	NO
Article Component :	NO
Repackaging :	NO
Impurity :	NO
Recycling :	NO

3.3 Otherwise Use the Toxic Chemical:

Chemical Processing Aid :	NO
Manufacturing Aid :	NO
Ancillary or Other Use :	YES

Sub-Uses:

Z304	Fuel
------	------

Section 4. Maximum Amount of the Toxic Chemical Onsite During the Calendar Year

Maximum Chemical Amount: 1000000 to 9999999

Section 5. Quantity of the Toxic Chemical Entering each Environmental Medium Onsite

5.1 Fugitive or Non-Point Air Emissions

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
NO	160.57	Pounds	O - Other Approaches

5.2 Stack or Point Air Emissions

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
NO	7391.92	Pounds	O - Other Approaches

5.3 Discharges to Receiving Streams or Water Bodies

NA	STREAM/WATER BODY NAME	REACH Code	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE	% FROM STORMWATER
NO	NECHES RIVER	12020003000223	0	Pounds	O - Other Approaches	0

5.4-5.5 Disposal to Land Onsite

5.4.1 Underground Injection Onsite to Class I Wells.

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
YES			

5.4.2 Underground Injection Onsite to Class II-V Wells.

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
YES			

5.5 Disposal to Land Onsite

5.5.1A RCRA Subtitle C Landfills

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE

YES			
-----	--	--	--

5.5.1B [Other Landfills](#)

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
YES			

5.5.2 [Land Treatment/Application Farming](#)

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
YES			

5.5.3A [RCRA Subtitle C Surface Impoundments](#)

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
YES			

5.5.3B [Other Surface Impoundments](#)

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
YES			

5.5.4 [Other Disposal](#)

NA	TOTAL RELEASE (per year)	UNIT OF MEASURE	BASIS OF ESTIMATE
YES			

Optional Waste Rock Piles Information

Section 5.5 quantities include "waste rock piles":	NO
Quantity of "waste rock piles" (pounds/year*):	

*For Dioxin and Dioxin-like Compounds, report in grams/year

Section 6. Transfers of the Toxic Chemical in Wastes to Off-Site Locations**6.1** [Discharges to Publicly Owned Treatment Works \(POTWs\)](#)

1 - NAME :	ADDRESS :
CITY :	STATE :

NEICVP1446E01

<u>COUNTY:</u>	<u>ZIP CODE:</u>
----------------	------------------

<u>POTW AMOUNT SEQUENCE</u>	<u>TOTAL TRANSFERS (per year)</u>	<u>UNIT OF MEASURE</u>	<u>BASIS OF ESTIMATE</u>	<u>WASTE MANAGEMENT TYPE</u>
NO DATA	NO DATA		NO DATA	NO DATA

6.2 [Transfers to other Off-Site Locations](#)

1 <u>RCRA Number:</u> ARD069748192	<u>Parent Company Controlled:</u> NO
<u>Name:</u> CLEAN HARBORS EL DORADO, LLC	<u>Address:</u> 309 AMERICAN CIRCLE
<u>City:</u> EL DORADO	<u>State:</u> AR
<u>County:</u> UNION	<u>Zip Code:</u> 71730
<u>Country Code (Non - US):</u>	<u>Province:</u>

<u>OFFSITE AMOUNT SEQUENCE</u>	<u>TOTAL TRANSFERS (per year)</u>	<u>UNIT OF MEASURE</u>	<u>BASIS OF ESTIMATE</u>	<u>WASTE MANAGEMENT TYPE</u>
1	.41	Pounds	O - Other Approaches	M50 - Incineration/Thermal Treatment

2 <u>RCRA Number:</u> TXD055141378	<u>Parent Company Controlled:</u> NO
<u>Name:</u> CLEAN HARBORS DEER PARK	<u>Address:</u> 2027 INDEPENDENCE PKWY S
<u>City:</u> DEER PARK	<u>State:</u> TX
<u>County:</u> HARRIS	<u>Zip Code:</u> 77536
<u>Country Code (Non - US):</u>	<u>Province:</u>

<u>OFFSITE AMOUNT SEQUENCE</u>	<u>TOTAL TRANSFERS (per year)</u>	<u>UNIT OF MEASURE</u>	<u>BASIS OF ESTIMATE</u>	<u>WASTE MANAGEMENT TYPE</u>
1	2229.95	Pounds	O - Other Approaches	M50 - Incineration/Thermal Treatment

3 RCRA Number: TXD982290140	Parent Company Controlled: NO
Name: CLEAN HARBORS LAPORTE	Address: 500 500 INDEPENDENCE PKWY S
City: LA PORTE	State: TX
County: HARRIS	Zip Code: 775719768
Country Code (Non - US):	Province:

<u>OFFSITE AMOUNT SEQUENCE</u>	<u>TOTAL TRANSFERS (per year)</u>	<u>UNIT OF MEASURE</u>	<u>BASIS OF ESTIMATE</u>	<u>WASTE MANAGEMENT TYPE</u>
1	18	Pounds	O - Other Approaches	M10 - Storage Only

Section 7A. On-Site Waste Treatment Methods and Efficiency

7A.1a. Waste Stream: WASTEWATER

7A.1b.	<u>WASTE TREATMENT METHOD(S) SEQUENCE</u>
1	H081 - Biological treatment with or without precipitation

7A.1d. Waste Treatment Efficiency Estimate: Greater than 99.9999%

7A.2a. Waste Stream: GASEOUS

7A.2b.	<u>WASTE TREATMENT METHOD(S) SEQUENCE</u>
1	A01 - FLARE

7A.2d. Waste Treatment Efficiency Estimate: Greater than 95% but less than or equal to 99%

Section 7B. On-Site Energy Recovery Processes

<u>ON SITE ENERGY RECOVERY PROCESSES</u>
U02 - INDUSTRIAL FURNACE

Section 7C. On-Site Recycling Processes

ON SITE RECYCLING PROCESSES

NA

Section 8. Source Reduction and Recycling Activities

SECTION	<u>TYPE OF QUANTITY</u>	<u>UNITS</u>	<u>PRIOR YEAR</u>	<u>CURRENT REPORTING YEAR</u>	<u>FOLLOWING YEAR</u>	<u>SECOND FOLLOWING YEAR</u>
8.1a	Total on-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills		NA	NA	NA	NA
8.1b	Total other on-site disposal or other releases	Pounds	16399	7291.29	7291.29	7291.29
8.1c	Total off-site disposal to Class I Underground Injection Wells, RCRA Subtitle C landfills, and other landfills	Pounds	10.46	NA	NA	NA
8.1d	Total other off-site disposal or other releases	Pounds	NA	18	18	18
8.2	Quantity Used for Energy Recovery Onsite	Pounds	15429	18848	18848	18848
8.3	Quantity Used for Energy Recovery Offsite		NA	NA	NA	NA
8.4	Quantity Recycled Onsite		NA	NA	NA	NA
8.5	Quantity Recycled Offsite		NA	NA	NA	NA

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Appendix E
Page 9 of 12Indorama Ventures Oxides LLC
Port Neches, Texas

8.6	Quantity Treated Onsite	Pounds	794950	362277	362277	362277
8.7	Quantity Treated Offsite	Pounds	1992.35	2230.36	2230.36	2230.36

8.8 [One-Time Event Release](#): 261 Pounds

8.9 [Production Ratio](#) ☒ or [Activity Ratio](#) ☐ : 1.25

8.10 [Source Reduction Activities](#)

SOURCE REDUCTION ACTIVITIES	METHOD 1	METHOD 2	METHOD 3	ESTIMATED ANNUAL REDUCTION
NA				

8.11 [Additional Data Indicator](#): NO

No Data Found

9.1 Miscellaneous, Additional or Optional Information regarding the Form R submission

COMMENT TYPE	DESCRIPTION	COMMENT TEXT
DQA95	Change in the total quantity of air releases	The reduction in benzene emissions from section 5 was due to a decrease in the amount of benzene sent to the facility's flare system compared to 2020. This change was due to a decrease in waste gas flow as an effort to reduce flare emissions throughout the year.
DQA95	Change in the total quantity of air releases	This change in release totals was expected.
DQA97	Change in the total release quantity	The reduction in benzene emissions from section 8.1 was due to a decrease in the amount of benzene sent to the facility's flare system compared to 2020. This change was due to a decrease in waste gas flow as an effort to reduce flare emissions throughout the year.
DQA97	Change in the total release quantity	This change in release totals was expected.
DQA98	Change in the total quantity of production-	The reduction in benzene treated on-site in section 8.6 was due to a decrease in the amount of benzene sent to the facility's flare system compared to 2020. This change was due to a decrease in waste gas flow as an effort to reduce

	related waste	flare emissions throughout the year.
DQA98	Change in the total quantity of production-related waste	This change in release totals was expected.

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	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 12-27-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points, Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 2-23-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
 or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
 leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 



LDAR Check Sheet – Comp/Tower Section

Number: PN-16

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 10/18/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: A. Sandoz

Supervisor: Joe Romero



LDAR Check Sheet – Comp/Tower Section

Number: PN-16

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 10-3-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
 or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
 leaking? If yes, list leak location below.

Location(s) of leaks detected:

N/A

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 10-11-20

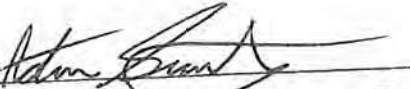
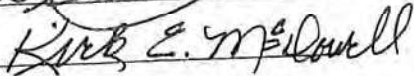
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 7-26-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]
 Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 7-5-20

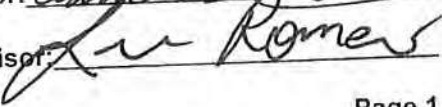
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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INDORAMA V E N T U R E S PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 5/24/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
 or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
 leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 4-19-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]

Supervisor: [Signature]

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 PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 4-12-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Song Phung
 Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 3/29/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

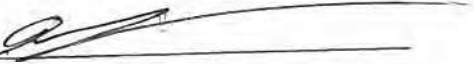
Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

N/A

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 3/12/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

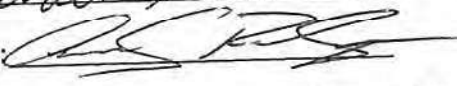
Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 2/22/20

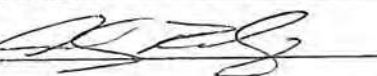
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 
 Supervisor: 



LDAR Check Sheet - Furnace Section

Number: PN-15

Department: A-3

Revision Date: 10 / 01 / 10

Record Retention Code: E20

Date:

3/28/20

Inspect area for missing caps or plugs on open ended process lines, bleeders and sample points. Are all caps or plugs in place? ☒ Yes ☐ No

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator:

Supervisor:

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 4/12/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 4/19/20

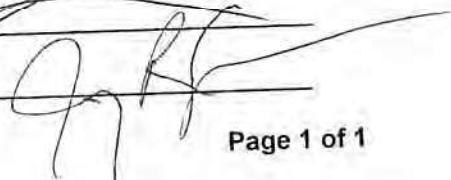
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 07-04-2020

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Freddie Online
 Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 7/26/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: Aug. 15 2020

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]

Supervisor: _____



LDAR Check Sheet - Furnace Section

Number: PN-15

Department: A-3

Revision Date: 10 / 01 / 10

Record Retention Code: E20

Date: 9/26/10

Inspect area for missing caps or plugs on open ended process lines, ☐ Yes ☒ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator:

James Swearingen

Supervisor:

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INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 10-10-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges
 or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be
 leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: *Sage Smith*Supervisor: *Kirk E. McDowell*

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INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 10/11/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: A. Sampson
 Supervisor: Kirk E. McDonald

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 10/18/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 10-3-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: S. MontySupervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 12-28-20

Inspect area for missing caps or plugs on open ended process lines, ☐ Yes ☒ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: S.M.Supervisor: [Signature]

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 PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 12-27-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

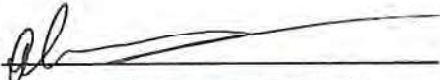
Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

N/A

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 10-3-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 



LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: Sep 26, 2020

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

N/A

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 



LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 7-26-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: James SugarinenSupervisor: Lu Romero

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LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 04-19-20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: *Freddie*Supervisor: *[Signature]*

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LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 4/11/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Freddie ArlineSupervisor: [Signature]

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LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 3 / 28 / 20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: S. N...Supervisor: [Signature]



LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 03/21/20

Inspect area for missing caps or plugs on open ended process lines, bleeders and sample points. Are all caps or plugs in place? ☒ Yes ☐ No

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Freddie Olive

Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 02/29/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Jordie Online

Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 2/15/20

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

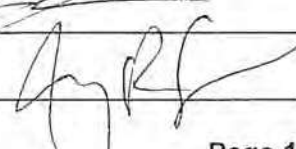
Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

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LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: Jan. 25, 2020

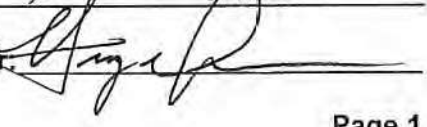
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: JULY 4th 2020

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges
 or valves found to be leaking? If yes, list leak location below.

☒ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be
 leaking? If yes, list leak location below.

☒ Yes ☒ No

*per L. Shearin.
 The "yes" marked
 was a clerical
 error. No
 leaks found in
 the area*

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: _____



LDAR Check Sheet – Comp/Tower Section

Number: PN-16

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 6/10/21

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 



LDAR Check Sheet - Furnace Section

Number: PN-15

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code:E20

Date: 4/17/21

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 5/1/21

Inspect area for missing caps or plugs on open ended process lines. ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

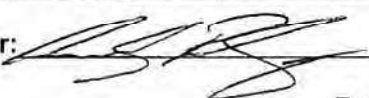
Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
 or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
 leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 5/15/21

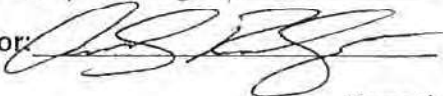
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
 or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
 leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 
 Supervisor: 

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 6/5/21

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Juditha Online

Supervisor: Kirk E. McDowell

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 6/12/21

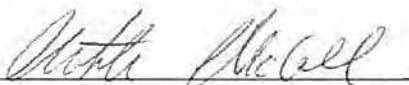
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

Page 1 of 1



LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 6/19/21

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☒ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]Supervisor: [Signature]



LDAR Check Sheet - Furnace Section

Number: PN-15

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 7-10-21

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]Supervisor: [Signature]

Page 1 of 1



LDAR Check Sheet – Comp/Tower Section

Number: PN-16

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 8-7-21

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

NONE

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: S. M. B.Supervisor: [Signature]

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 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 9-4-21

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

Page 1 of 1



LDAR Check Sheet - Utility Section

Number: PN-14

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 1-8-22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: James SwearingenSupervisor: Tim [Signature]

Page 1 of 1

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15 Department: A-3	Revision Date: 10 / 01 / 10 Record Retention Code: E20

Date: 1-8-22

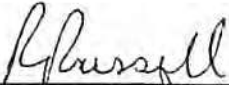
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

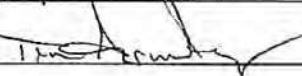
Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 



LDAR Check Sheet – Comp/Tower Section

Number: PN-16

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 1-8-22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Wayne BuchananSupervisor: Jim [Signature]

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 1-22-22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

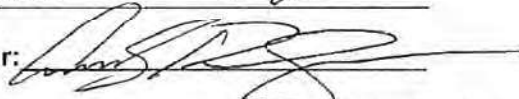
Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

Page 1 of 1



LDAR Check Sheet - Furnace Section

Number: PN-15

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 1-22-22

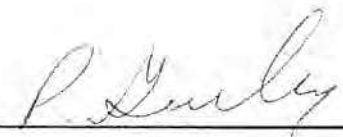
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

Page 1 of 1



LDAR Check Sheet – Comp/Tower Section

Number: PN-16

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 1 - 22 - 22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☒ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

C-A3-1

Any leaks detected must be reported immediately to the Operations Team Leader.

Natural gas leak on
C-A3-1

Operator: [Signature]Supervisor: [Signature]

Page 1 of 1

 PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 5-14-22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 5-14-22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
 or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
 leaking? If yes, list leak location below.

Location(s) of leaks detected: N/A

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]
 Supervisor: [Signature]



LDAR Check Sheet - Furnace Section

Number: PN-15

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 5-14-22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: R Russell
Supervisor: Wade Bohm

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Furnace Section	
	Number: PN-15	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 5-29-22

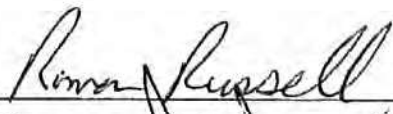
Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 
 Supervisor: 

Page 1 of 1

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 8-28-22

Inspect area for missing caps or plugs on open ended process lines, bleeders and sample points. Are all caps or plugs in place? ☒ Yes ☐ No

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☒ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☒ Yes ☒ No

Location(s) of leaks detected:

A11A

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor: 

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LDAR Check Sheet - Furnace Section

Number: PN-15

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 9/3/22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Supervisor:



LDAR Check Sheet – Comp/Tower Section

Number: PN-16

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 7/9/22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: S. [Signature]Supervisor: [Signature]

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet – Comp/Tower Section	
	Number: PN-16	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 7/2/22

Inspect area for missing caps or plugs on open ended process lines, ☐ Yes ☒ No
 bleeders and sample points. Are all caps or plugs in place?

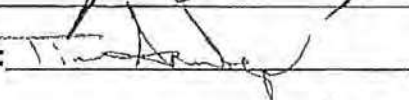
Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: 

Supervisor: 

Page 1 of 1



LDAR Check Sheet - Furnace Section

Number: PN-15

Revision Date: 10 / 01 / 10

Department: A-3

Record Retention Code: E20

Date: 7/2/22

Inspect area for missing caps or plugs on open ended process lines, ☒ Yes ☐ No
bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges ☐ Yes ☒ No
or valves found to be leaking? If yes, list leak location below.

Inspect pump seals for leaks. Were any pump seals found to be ☐ Yes ☒ No
leaking? If yes, list leak location below.

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: [Signature]Supervisor: [Signature]

Page 1 of 1

 INDORAMA VENTURES PORT NECHES, TX	LDAR Check Sheet - Utility Section	
	Number: PN-14	Revision Date: 10 / 01 / 10
	Department: A-3	Record Retention Code: E20

Date: 7/2/22

Inspect area for missing caps or plugs on open ended process lines, ☐ Yes ☒ No
 bleeders and sample points. Are all caps or plugs in place?

Inspect lines, flanges and valves for leaks. Were any lines, flanges or valves found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Inspect pump seals for leaks. Were any pump seals found to be leaking? If yes, list leak location below. ☐ Yes ☒ No

Location(s) of leaks detected:

Any leaks detected must be reported immediately to the Operations Team Leader.

Operator: Freddie Arline
 Supervisor: Tim Doherty

Base	Status	Procedure	Approved Date/Time
A3	COMPLETE	Utility Operator LDAR	10/19/2019 12:14 PM
A3	COMPLETE	Utility Operator LDAR	10/26/2019 5:12 PM
A3	COMPLETE	Utility Operator LDAR	11/9/2019 12:25 PM
A3	COMPLETE	Utility Operator LDAR	11/23/2019 3:58 PM
A3	COMPLETE	Utility Operator LDAR	11/30/2019 12:04 PM
A3	COMPLETE	Utility Operator LDAR	12/7/2019 3:51 PM
A3	COMPLETE	Utility Operator LDAR	12/14/2019 4:56 PM
A3	COMPLETE	Utility Operator LDAR	12/21/2019 3:27 PM
A3	COMPLETE	Utility Operator LDAR	1/4/2020 2:58 PM
A3	COMPLETE	Utility Operator LDAR	1/11/2020 11:37 PM
A3	COMPLETE	Utility Operator LDAR	1/18/2020 1:30 PM
A3	COMPLETE	Utility Operator LDAR	2/1/2020 7:19 AM
A3	COMPLETE	Utility Operator LDAR	2/8/2020 5:19 PM
A3	LATE	Utility Operator LDAR	2/25/2020 3:27 AM
A3	COMPLETE	Utility Operator LDAR	2/22/2020 3:10 PM
A3	COMPLETE	Utility Operator LDAR	3/7/2020 3:41 PM
A3	COMPLETE	Utility Operator LDAR	3/14/2020 2:52 PM
A3	COMPLETE	Utility Operator LDAR	4/5/2020 12:40 AM
A3	COMPLETE	Utility Operator LDAR	4/25/2020 4:15 PM
A3	COMPLETE	Utility Operator LDAR	5/2/2020 4:06 PM
A3	COMPLETE	Utility Operator LDAR	5/9/2020 4:48 PM
A3	COMPLETE	Utility Operator LDAR	5/16/2020 3:49 PM
A3	COMPLETE	Utility Operator LDAR	5/23/2020 6:07 PM
A3	COMPLETE	Utility Operator LDAR	5/30/2020 5:13 PM
A3	COMPLETE	Utility Operator LDAR	6/6/2020 12:53 PM
A3	COMPLETE	Utility Operator LDAR	6/13/2020 3:18 PM
A3	COMPLETE	Utility Operator LDAR	7/1/2020 3:24 PM
A3	COMPLETE	Utility Operator LDAR	7/18/2020 2:44 PM
A3	COMPLETE	Utility Operator LDAR	8/1/2020 2:40 PM
A3	COMPLETE	Utility Operator LDAR	8/7/2020 4:26 PM
A3	COMPLETE	Utility Operator LDAR	8/15/2020 12:09 PM

A3	COMPLETE	Utility Operator LDAR	8/22/2020 3:54 PM
A3	COMPLETE	Utility Operator LDAR	9/6/2020 3:45 AM
A3	COMPLETE	Utility Operator LDAR	9/12/2020 7:36 PM
A3	COMPLETE	Utility Operator LDAR	9/19/2020 3:29 PM
A3	COMPLETE	Utility Operator LDAR	10/31/2020 3:26 PM
A3	COMPLETE	Utility Operator LDAR	11/7/2020 4:24 PM
A3	COMPLETE	Utility Operator LDAR	11/14/2020 1:57 PM
A3	COMPLETE	Utility Operator LDAR	11/21/2020 3:18 PM
A3	COMPLETE	Utility Operator LDAR	11/28/2020 3:07 PM
A3	COMPLETE	Utility Operator LDAR	12/5/2020 3:47 PM
A3	COMPLETE	Utility Operator LDAR	12/12/2020 1:05 PM
A3	COMPLETE	Utility Operator LDAR	12/19/2020 12:08 PM
A3	COMPLETE	Utility Operator LDAR	1/23/2021 3:42 PM
A3	COMPLETE	Utility Operator LDAR	1/30/2021 7:56 AM
A3	COMPLETE	Utility Operator LDAR	2/6/2021 3:19 PM
A3	COMPLETE	Utility Operator LDAR	2/13/2021 11:57 PM
A3	COMPLETE	Utility Operator LDAR	3/13/2021 3:12 PM
A3	COMPLETE	Utility Operator LDAR	3/20/2021 3:59 PM
A3	COMPLETE	Utility Operator LDAR	3/27/2021 10:46 AM
A3	COMPLETE	Utility Operator LDAR	4/3/2021 4:09 PM
A3	COMPLETE	Utility Operator LDAR	4/10/2021 3:16 PM
A3	COMPLETE	Utility Operator LDAR	4/17/2021 3:40 PM
A3	COMPLETE	Utility Operator LDAR	4/24/2021 4:26 PM
A3	COMPLETE	Utility Operator LDAR	5/1/2021 4:58 PM
A3	COMPLETE	Utility Operator LDAR	5/8/2021 10:44 AM
A3	LATE	Utility Operator LDAR	5/20/2021 2:50 AM
A3	COMPLETE	Utility Operator LDAR	5/22/2021 6:51 AM
A3	COMPLETE	Utility Operator LDAR	5/29/2021 3:08 PM
A3	COMPLETE	Utility Operator LDAR	6/5/2021 11:38 AM
A3	COMPLETE	Utility Operator LDAR	6/12/2021 1:44 PM
A3	COMPLETE	Utility Operator LDAR	6/26/2021 12:11 PM
A3	LATE	Utility Operator LDAR	
A3	COMPLETE	Utility Operator LDAR	7/4/2021 3:10 AM

A3	COMPLETE	Utility Operator LDAR	7/10/2021 3:52 PM
A3	COMPLETE	Utility Operator LDAR	7/17/2021 3:49 PM
A3	COMPLETE	Utility Operator LDAR	7/24/2021 11:56 AM
A3	COMPLETE	Utility Operator LDAR	7/31/2021 3:15 PM
A3	COMPLETE	Utility Operator LDAR	8/7/2021 8:33 AM
A3	COMPLETE	Utility Operator LDAR	8/14/2021 10:21 AM
A3	COMPLETE	Utility Operator LDAR	8/21/2021 10:17 AM
A3	COMPLETE	Utility Operator LDAR	8/28/2021 3:45 PM
A3	COMPLETE	Utility Operator LDAR	9/4/2021 2:55 PM
A3	COMPLETE	Utility Operator LDAR	9/11/2021 3:11 PM
A3	COMPLETE	Utility Operator LDAR	9/19/2021 3:44 AM
A3	COMPLETE	Utility Operator LDAR	9/25/2021 3:51 PM
A3	COMPLETE	Utility Operator LDAR	10/2/2021 2:47 PM
A3	COMPLETE	Utility Operator LDAR	10/9/2021 3:03 PM
A3	COMPLETE	Utility Operator LDAR	10/16/2021 3:42 PM
A3	COMPLETE	Utility Operator LDAR	10/23/2021 4:02 PM
A3	COMPLETE	Utility Operator LDAR	10/30/2021 3:21 PM
A3	COMPLETE	Utility Operator LDAR	11/6/2021 1:54 PM
A3	COMPLETE	Utility Operator LDAR	11/13/2021 2:30 PM
A3	COMPLETE	Utility Operator LDAR	11/20/2021 4:00 PM
A3	COMPLETE	Utility Operator LDAR	11/27/2021 3:17 PM
A3	COMPLETE	Utility Operator LDAR	12/4/2021 2:27 PM
A3	COMPLETE	Utility Operator LDAR	12/18/2021 2:17 PM
A3	COMPLETE	Utility Operator LDAR	12/26/2021 12:08 AM
A3	COMPLETE	Utility Operator LDAR	1/1/2022 12:07 PM
A3	OVERDUE	Utility Operator LDAR	
A3	COMPLETE	Utility Operator LDAR	2/5/2022 11:28 AM
A3	COMPLETE	Utility Operator LDAR	2/12/2022 1:02 PM
A3	COMPLETE	Utility Operator LDAR	2/19/2022 3:01 PM
A3	COMPLETE	Utility Operator LDAR	
A3	COMPLETE	Utility Operator LDAR	3/26/2022 3:13 PM
A3	COMPLETE	Utility Operator LDAR	4/2/2022 2:31 PM
A3	COMPLETE	Utility Operator LDAR	4/9/2022 11:15 AM

A3	LATE	Utility Operator LDAR	4/16/2022 3:16 PM
A3	COMPLETE	Utility Operator LDAR	4/23/2022 3:19 PM
A3	COMPLETE	Utility Operator LDAR	4/30/2022 3:12 PM
A3	COMPLETE	Utility Operator LDAR	5/7/2022 3:35 PM
A3	LATE	Utility Operator LDAR	5/21/2022 2:08 PM
A3	COMPLETE	Utility Operator LDAR	6/4/2022 3:28 PM
A3	COMPLETE	Utility Operator LDAR	6/11/2022 2:59 PM
A3	COMPLETE	Utility Operator LDAR	6/18/2022 2:59 PM
A3	COMPLETE	Utility Operator LDAR	6/25/2022 3:17 PM
A3	LATE	Utility Operator LDAR	7/9/2022 3:03 PM
A3	COMPLETE	Utility Operator LDAR	7/16/2022 2:19 PM
A3	COMPLETE	Utility Operator LDAR	7/23/2022 3:41 PM
A3	COMPLETE	Utility Operator LDAR	7/31/2022 3:08 AM
A3	COMPLETE	Utility Operator LDAR	8/6/2022 3:22 PM
A3	COMPLETE	Utility Operator LDAR	8/13/2022 3:07 PM
A3	COMPLETE	Utility Operator LDAR	8/20/2022 3:40 PM
A3	COMPLETE	Utility Operator LDAR	9/3/2022 3:10 PM
A3	COMPLETE	Utility Operator LDAR	9/10/2022 2:06 PM
A3	COMPLETE	Utility Operator LDAR	9/17/2022 3:20 PM
A3	COMPLETE	Utility Operator LDAR	9/24/2022 3:11 PM
A3	COMPLETE	Utility Operator LDAR	10/1/2022 3:20 PM
A3	COMPLETE	Utility Operator LDAR	10/8/2022 3:05 PM
A3	COMPLETE	Furnace Operator LDAR	10/19/2019 4:04 PM
A3	COMPLETE	Furnace Operator LDAR	10/26/2019 5:11 PM
A3	COMPLETE	Furnace Operator LDAR	11/2/2019 3:49 PM
A3	COMPLETE	Furnace Operator LDAR	11/9/2019 12:23 PM
A3	COMPLETE	Furnace Operator LDAR	11/16/2019 3:08 PM
A3	COMPLETE	Furnace Operator LDAR	11/23/2019 3:58 PM
A3	COMPLETE	Furnace Operator LDAR	11/30/2019 3:04 PM
A3	COMPLETE	Furnace Operator LDAR	12/7/2019 9:17 AM
A3	COMPLETE	Furnace Operator LDAR	12/14/2019 3:05 PM
A3	COMPLETE	Furnace Operator LDAR	12/22/2019 2:22 AM
A3	COMPLETE	Furnace Operator LDAR	12/28/2019 2:55 PM

A3	COMPLETE	Furnace Operator LDAR	1/4/2020 4:14 PM
A3	COMPLETE	Furnace Operator LDAR	1/11/2020 11:37 PM
A3	COMPLETE	Furnace Operator LDAR	1/19/2020 3:18 AM
A3	COMPLETE	Furnace Operator LDAR	1/25/2020 4:40 PM
A3	COMPLETE	Furnace Operator LDAR	2/1/2020 2:23 PM
A3	COMPLETE	Furnace Operator LDAR	2/8/2020 5:19 PM
A3	COMPLETE	Furnace Operator LDAR	2/16/2020 1:26 AM
A3	COMPLETE	Furnace Operator LDAR	2/25/2020 3:24 AM
A3	COMPLETE	Furnace Operator LDAR	2/29/2020 11:53 AM
A3	COMPLETE	Furnace Operator LDAR	3/7/2020 3:41 PM
A3	COMPLETE	Furnace Operator LDAR	3/14/2020 2:52 PM
A3	COMPLETE	Furnace Operator LDAR	4/4/2020 1:04 AM
A3	COMPLETE	Furnace Operator LDAR	4/25/2020 4:17 PM
A3	COMPLETE	Furnace Operator LDAR	5/2/2020 4:04 PM
A3	COMPLETE	Furnace Operator LDAR	5/9/2020 4:47 PM
A3	COMPLETE	Furnace Operator LDAR	5/16/2020 3:49 PM
A3	COMPLETE	Furnace Operator LDAR	5/23/2020 6:07 PM
A3	COMPLETE	Furnace Operator LDAR	6/6/2020 12:52 PM
A3	LATE	Furnace Operator LDAR	6/7/2020 6:21 AM
A3	COMPLETE	Furnace Operator LDAR	6/13/2020 3:17 PM
A3	COMPLETE	Furnace Operator LDAR	7/11/2020 3:24 PM
A3	COMPLETE	Furnace Operator LDAR	7/18/2020 3:59 PM
A3	LATE	Furnace Operator LDAR	8/2/2020 4:50 PM
A3	COMPLETE	Furnace Operator LDAR	8/8/2020 11:50 AM
A3	COMPLETE	Furnace Operator LDAR	8/22/2020 10:24 AM
A3	COMPLETE	Furnace Operator LDAR	9/6/2020 3:45 AM
A3	COMPLETE	Furnace Operator LDAR	9/12/2020 9:29 AM
A3	COMPLETE	Furnace Operator LDAR	9/19/2020 3:30 PM
A3	COMPLETE	Furnace Operator LDAR	10/24/2020 4:15 PM
A3	COMPLETE	Furnace Operator LDAR	10/31/2020 3:40 PM
A3	COMPLETE	Furnace Operator LDAR	11/7/2020 3:26 PM
A3	COMPLETE	Furnace Operator LDAR	11/21/2020 3:17 PM
A3	COMPLETE	Furnace Operator LDAR	11/27/2020 3:08 PM

A3	COMPLETE	Furnace Operator LDAR	12/5/2020 3:46 PM
A3	COMPLETE	Furnace Operator LDAR	12/12/2020 5:13 PM
A3	COMPLETE	Furnace Operator LDAR	12/19/2020 12:10 PM
A3	COMPLETE	Furnace Operator LDAR	1/23/2021 3:41 PM
A3	COMPLETE	Furnace Operator LDAR	1/30/2021 2:13 PM
A3	COMPLETE	Furnace Operator LDAR	2/6/2021 4:52 PM
A3	COMPLETE	Furnace Operator LDAR	2/13/2021 11:56 PM
A3	COMPLETE	Furnace Operator LDAR	3/13/2021 3:12 PM
A3	COMPLETE	Furnace Operator LDAR	3/20/2021 3:59 PM
A3	COMPLETE	Furnace Operator LDAR	3/27/2021 2:45 PM
A3	COMPLETE	Furnace Operator LDAR	4/3/2021 1:56 PM
A3	COMPLETE	Furnace Operator LDAR	4/10/2021 3:16 PM
A3	COMPLETE	Furnace Operator LDAR	4/24/2021 4:26 PM
A3	COMPLETE	Furnace Operator LDAR	5/1/2021 4:58 PM
A3	COMPLETE	Furnace Operator LDAR	5/8/2021 10:44 AM
A3	COMPLETE	Furnace Operator LDAR	5/15/2021 11:22 AM
A3	COMPLETE	Furnace Operator LDAR	5/22/2021 3:30 PM
A3	COMPLETE	Furnace Operator LDAR	5/29/2021 3:08 PM
A3	COMPLETE	Furnace Operator LDAR	6/5/2021 5:35 AM
A3	COMPLETE	Furnace Operator LDAR	6/12/2021 1:44 PM
A3	COMPLETE	Furnace Operator LDAR	6/19/2021 6:44 AM
A3	COMPLETE	Furnace Operator LDAR	6/26/2021 12:11 PM
A3	COMPLETE	Furnace Operator LDAR	7/4/2021 3:10 AM
A3	COMPLETE	Furnace Operator LDAR	7/17/2021 3:49 PM
A3	COMPLETE	Furnace Operator LDAR	7/24/2021 11:56 AM
A3	COMPLETE	Furnace Operator LDAR	7/31/2021 3:15 PM
A3	COMPLETE	Furnace Operator LDAR	8/7/2021 8:33 AM
A3	COMPLETE	Furnace Operator LDAR	8/14/2021 4:16 PM
A3	COMPLETE	Furnace Operator LDAR	8/21/2021 10:17 AM
A3	COMPLETE	Furnace Operator LDAR	8/28/2021 3:45 PM
A3	COMPLETE	Furnace Operator LDAR	9/4/2021 2:55 PM
A3	COMPLETE	Furnace Operator LDAR	9/11/2021 3:11 PM
A3	COMPLETE	Furnace Operator LDAR	9/18/2021 2:22 PM

A3	COMPLETE	Furnace Operator LDAR	9/25/2021 3:51 PM
A3	COMPLETE	Furnace Operator LDAR	10/2/2021 2:47 PM
A3	COMPLETE	Furnace Operator LDAR	10/9/2021 3:03 PM
A3	COMPLETE	Furnace Operator LDAR	10/16/2021 3:42 PM
A3	COMPLETE	Furnace Operator LDAR	10/23/2021 4:02 PM
A3	LATE	Furnace Operator LDAR	10/29/2021 3:05 PM
A3	COMPLETE	Furnace Operator LDAR	10/30/2021 3:21 PM
A3	COMPLETE	Furnace Operator LDAR	11/6/2021 1:54 PM
A3	COMPLETE	Furnace Operator LDAR	11/13/2021 2:30 PM
A3	COMPLETE	Furnace Operator LDAR	11/20/2021 4:00 PM
A3	COMPLETE	Furnace Operator LDAR	11/27/2021 3:17 PM
A3	COMPLETE	Furnace Operator LDAR	12/4/2021 2:27 PM
A3	COMPLETE	Furnace Operator LDAR	12/18/2021 2:17 PM
A3	LATE	Furnace Operator LDAR	12/25/2021 3:08 PM
A3	COMPLETE	Furnace Operator LDAR	1/1/2022 12:07 PM
A3	COMPLETE	Furnace Operator LDAR	1/29/2022 3:42 PM
A3	COMPLETE	Furnace Operator LDAR	2/5/2022 11:28 AM
A3	COMPLETE	Furnace Operator LDAR	2/12/2022 1:02 PM
A3	COMPLETE	Furnace Operator LDAR	2/19/2022 3:01 PM
A3	COMPLETE	Furnace Operator LDAR	3/26/2022 7:16 AM
A3	COMPLETE	Furnace Operator LDAR	4/2/2022 2:32 PM
A3	COMPLETE	Furnace Operator LDAR	4/9/2022 11:15 AM
A3	COMPLETE	Furnace Operator LDAR	4/16/2022 3:16 PM
A3	COMPLETE	Furnace Operator LDAR	4/23/2022 3:19 PM
A3	COMPLETE	Furnace Operator LDAR	5/1/2022 3:01 PM
A3	COMPLETE	Furnace Operator LDAR	5/7/2022 3:35 PM
A3	COMPLETE	Furnace Operator LDAR	5/21/2022 2:05 PM
A3	COMPLETE	Furnace Operator LDAR	5/28/2022 12:52 PM
A3	COMPLETE	Furnace Operator LDAR	6/4/2022 3:28 PM
A3	COMPLETE	Furnace Operator LDAR	6/11/2022 2:59 PM
A3	COMPLETE	Furnace Operator LDAR	6/18/2022 2:59 PM
A3	COMPLETE	Furnace Operator LDAR	6/25/2022 3:17 PM
A3	COMPLETE	Furnace Operator LDAR	7/9/2022 3:02 PM

A3	COMPLETE	Furnace Operator LDAR	7/16/2022 2:19 PM
A3	COMPLETE	Furnace Operator LDAR	7/23/2022 3:41 PM
A3	COMPLETE	Furnace Operator LDAR	7/30/2022 2:33 PM
A3	COMPLETE	Furnace Operator LDAR	8/6/2022 3:22 PM
A3	COMPLETE	Furnace Operator LDAR	8/13/2022 3:07 PM
A3	COMPLETE	Furnace Operator LDAR	8/20/2022 3:40 PM
A3	COMPLETE	Furnace Operator LDAR	8/27/2022 3:07 PM
A3	LATE	Furnace Operator LDAR	9/7/2022 3:21 AM
A3	COMPLETE	Furnace Operator LDAR	9/10/2022 2:06 PM
A3	COMPLETE	Furnace Operator LDAR	9/17/2022 3:20 PM
A3	COMPLETE	Furnace Operator LDAR	10/1/2022 3:20 PM
A3	COMPLETE	Furnace Operator LDAR	10/8/2022 3:05 PM
A3	COMPLETE	Compressor Operator LDAR	10/19/2019 4:03 PM
A3	COMPLETE	Compressor Operator LDAR	10/26/2019 11:19 AM
A3	COMPLETE	Compressor Operator LDAR	11/2/2019 3:49 PM
A3	COMPLETE	Compressor Operator LDAR	11/9/2019 2:19 PM
A3	COMPLETE	Compressor Operator LDAR	11/16/2019 3:08 PM
A3	COMPLETE	Compressor Operator LDAR	11/23/2019 12:07 PM
A3	COMPLETE	Compressor Operator LDAR	11/30/2019 12:04 PM
A3	COMPLETE	Compressor Operator LDAR	12/7/2019 3:51 PM
A3	COMPLETE	Compressor Operator LDAR	12/14/2019 3:05 PM
A3	COMPLETE	Compressor Operator LDAR	12/21/2019 3:27 PM
A3	COMPLETE	Compressor Operator LDAR	1/4/2020 4:14 PM
A3	COMPLETE	Compressor Operator LDAR	1/11/2020 11:36 PM
A3	COMPLETE	Compressor Operator LDAR	1/19/2020 3:17 AM
A3	COMPLETE	Compressor Operator LDAR	1/25/2020 4:39 PM
A3	COMPLETE	Compressor Operator LDAR	2/1/2020 2:23 PM
A3	COMPLETE	Compressor Operator LDAR	2/8/2020 5:20 PM
A3	COMPLETE	Compressor Operator LDAR	2/16/2020 1:28 AM
A3	COMPLETE	Compressor Operator LDAR	2/29/2020 11:53 AM
A3	COMPLETE	Compressor Operator LDAR	3/7/2020 3:40 PM
A3	COMPLETE	Compressor Operator LDAR	3/15/2020 3:36 AM
A3	COMPLETE	Compressor Operator LDAR	4/5/2020 12:39 AM

A3	COMPLETE	Compressor Operator LDAR	4/25/2020 4:17 PM
A3	COMPLETE	Compressor Operator LDAR	5/2/2020 4:04 PM
A3	COMPLETE	Compressor Operator LDAR	5/9/2020 4:47 PM
A3	COMPLETE	Compressor Operator LDAR	5/16/2020 3:49 PM
A3	COMPLETE	Compressor Operator LDAR	5/30/2020 5:13 PM
A3	COMPLETE	Compressor Operator LDAR	6/6/2020 12:51 PM
A3	MISSED	Compressor Operator LDAR	6/13/2020 11:15 PM
A3	COMPLETE	Compressor Operator LDAR	7/11/2020 3:24 PM
A3	COMPLETE	Compressor Operator LDAR	7/18/2020 3:58 PM
A3	COMPLETE	Compressor Operator LDAR	8/1/2020 4:27 PM
A3	COMPLETE	Compressor Operator LDAR	8/8/2020 11:50 AM
A3	COMPLETE	Compressor Operator LDAR	8/15/2020 4:04 PM
A3	COMPLETE	Compressor Operator LDAR	8/22/2020 3:55 PM
A3	COMPLETE	Compressor Operator LDAR	
A3	COMPLETE	Compressor Operator LDAR	9/12/2020 3:24 PM
A3	COMPLETE	Compressor Operator LDAR	9/19/2020 8:51 PM
A3	COMPLETE	Compressor Operator LDAR	9/27/2020 5:36 AM
A3	COMPLETE	Compressor Operator LDAR	10/17/2020 4:37 PM
A3	COMPLETE	Compressor Operator LDAR	
A3	COMPLETE	Compressor Operator LDAR	10/31/2020 3:28 PM
A3	COMPLETE	Compressor Operator LDAR	11/7/2020 12:13 PM
A3	COMPLETE	Compressor Operator LDAR	11/15/2020 1:05 AM
A3	COMPLETE	Compressor Operator LDAR	11/21/2020 3:17 PM
A3	COMPLETE	Compressor Operator LDAR	11/28/2020 3:07 PM
A3	COMPLETE	Compressor Operator LDAR	12/5/2020 11:41 AM
A3	COMPLETE	Compressor Operator LDAR	12/12/2020 5:12 PM
A3	COMPLETE	Compressor Operator LDAR	12/19/2020 12:09 PM
A3	COMPLETE	Compressor Operator LDAR	1/22/2021 3:16 PM
A3	COMPLETE	Compressor Operator LDAR	1/30/2021 2:14 PM
A3	COMPLETE	Compressor Operator LDAR	2/6/2021 3:20 PM
A3	COMPLETE	Compressor Operator LDAR	2/13/2021 11:55 PM
A3	COMPLETE	Compressor Operator LDAR	3/6/2021 3:32 PM
A3	COMPLETE	Compressor Operator LDAR	3/13/2021 3:12 PM

A3	COMPLETE	Compressor Operator LDAR	3/27/2021 10:46 AM
A3	COMPLETE	Compressor Operator LDAR	4/3/2021 1:56 PM
A3	COMPLETE	Compressor Operator LDAR	4/17/2021 3:40 PM
A3	COMPLETE	Compressor Operator LDAR	4/24/2021 4:26 PM
A3	COMPLETE	Compressor Operator LDAR	5/8/2021 10:44 AM
A3	COMPLETE	Compressor Operator LDAR	5/15/2021 11:22 AM
A3	COMPLETE	Compressor Operator LDAR	5/22/2021 6:51 AM
A3	COMPLETE	Compressor Operator LDAR	5/29/2021 3:07 PM
A3	COMPLETE	Compressor Operator LDAR	6/19/2021 6:44 AM
A3	COMPLETE	Compressor Operator LDAR	6/26/2021 12:11 PM
A3	COMPLETE	Compressor Operator LDAR	7/4/2021 3:10 AM
A3	COMPLETE	Compressor Operator LDAR	7/10/2021 3:52 PM
A3	COMPLETE	Compressor Operator LDAR	7/17/2021 3:49 PM
A3	COMPLETE	Compressor Operator LDAR	7/24/2021 11:56 AM
A3	COMPLETE	Compressor Operator LDAR	7/31/2021 3:15 PM
A3	COMPLETE	Compressor Operator LDAR	8/14/2021 10:21 AM
A3	COMPLETE	Compressor Operator LDAR	8/21/2021 10:17 AM
A3	COMPLETE	Compressor Operator LDAR	8/28/2021 3:45 PM
A3	COMPLETE	Compressor Operator LDAR	9/11/2021 9:35 AM
A3	COMPLETE	Compressor Operator LDAR	9/18/2021 2:22 PM
A3	COMPLETE	Compressor Operator LDAR	9/25/2021 3:51 PM
A3	COMPLETE	Compressor Operator LDAR	10/2/2021 2:47 PM
A3	COMPLETE	Compressor Operator LDAR	10/9/2021 3:03 PM
A3	COMPLETE	Compressor Operator LDAR	10/16/2021 3:42 PM
A3	COMPLETE	Compressor Operator LDAR	10/23/2021 4:02 PM
A3	COMPLETE	Compressor Operator LDAR	10/30/2021 3:21 PM
A3	SUSPENDED	Compressor Operator LDAR	11/4/2021 3:04 AM
A3	COMPLETE	Compressor Operator LDAR	11/6/2021 1:54 PM
A3	COMPLETE	Compressor Operator LDAR	11/13/2021 2:30 PM
A3	COMPLETE	Compressor Operator LDAR	11/20/2021 4:00 PM
A3	LATE	Compressor Operator LDAR	11/27/2021 3:18 PM
A3	COMPLETE	Compressor Operator LDAR	12/4/2021 2:27 PM
A3	COMPLETE	Compressor Operator LDAR	12/18/2021 2:17 PM

A3	COMPLETE	Compressor Operator LDAR	12/25/2021 3:07 PM
A3	COMPLETE	Compressor Operator LDAR	1/1/2022 12:07 PM
A3	COMPLETE	Compressor Operator LDAR	1/29/2022 10:54 AM
A3	COMPLETE	Compressor Operator LDAR	2/5/2022 3:21 PM
A3	COMPLETE	Compressor Operator LDAR	2/12/2022 1:02 PM
A3	LATE	Compressor Operator LDAR	2/19/2022 3:01 PM
A3	COMPLETE	Compressor Operator LDAR	3/26/2022 3:13 PM
A3	COMPLETE	Compressor Operator LDAR	4/2/2022 2:31 PM
A3	COMPLETE	Compressor Operator LDAR	4/9/2022 11:15 AM
A3	COMPLETE	Compressor Operator LDAR	4/16/2022 3:15 PM
A3	COMPLETE	Compressor Operator LDAR	4/23/2022 3:19 PM
A3	COMPLETE	Compressor Operator LDAR	4/30/2022 3:12 PM
A3	COMPLETE	Compressor Operator LDAR	5/21/2022 2:05 PM
A3	COMPLETE	Compressor Operator LDAR	5/28/2022 12:52 PM
A3	COMPLETE	Compressor Operator LDAR	6/4/2022 3:28 PM
A3	COMPLETE	Compressor Operator LDAR	6/11/2022 2:59 PM
A3	COMPLETE	Compressor Operator LDAR	6/18/2022 2:59 PM
A3	COMPLETE	Compressor Operator LDAR	7/16/2022 2:19 PM
A3	COMPLETE	Compressor Operator LDAR	7/23/2022 3:41 PM
A3	COMPLETE	Compressor Operator LDAR	7/30/2022 2:33 PM
A3	LATE	Compressor Operator LDAR	8/6/2022 3:24 PM
A3	COMPLETE	Compressor Operator LDAR	8/13/2022 3:07 PM
A3	COMPLETE	Compressor Operator LDAR	8/20/2022 3:39 PM
A3	LATE	Compressor Operator LDAR	8/28/2022 2:55 PM
A3	COMPLETE	Compressor Operator LDAR	9/3/2022 3:10 PM
A3	COMPLETE	Compressor Operator LDAR	9/10/2022 2:06 PM
A3	COMPLETE	Compressor Operator LDAR	9/17/2022 3:20 PM
A3	COMPLETE	Compressor Operator LDAR	9/24/2022 3:11 PM
A3	COMPLETE	Compressor Operator LDAR	10/1/2022 3:20 PM
A3	COMPLETE	Compressor Operator LDAR	10/8/2022 3:05 PM



Leak Detail Report

Indorama OO

From: 1/1/2021 To: 3/31/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
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Unit: OO-A3-W/W-SYS

Area: SUBPART-FF - A3 W/W
SYS

A3-2242-004 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.1' N SIDE OF H-A3-H (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/19/21 8:50 AM	NRetherford	3943	1189	500			
1/22/21 9:32 AM	CMcGee	0083	10	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-2251-004 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.1' N SIDE OF H-A3-H (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/19/21 8:56 AM	NRetherford	3943	15356	500			
1/22/21 9:38 AM	CMcGee	0083	54	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-2313-001 Comp Type: CONNECTOR Rules: HUNTSMAN, FF .2" N SIDE OF H-A3-H (90)
Leak Source: 90 Size: 0.75 Service Type: GAS / VAPOR

1/19/21 12:28 PM	NRetherford	3943	731	500			
1/22/21 9:30 AM	CMcGee	0083	7	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-2672-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.3 " S SIDE OF H-A3-1G (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/19/21 12:53 PM	NRetherford	3943	1112	500			
1/22/21 9:34 AM	CMcGee	0083	26	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-2705-S1-000 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.1 " N SIDE OF H-A3-1F (Plug)
Leak Source: valve Size: 0.75 Service Type: GAS / VAPOR

1/20/21 8:07 AM	BMartindale	0587	1014	500			
1/22/21 9:36 AM	CMcGee	0083	219	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-2753-S2-000 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.4 " N SIDE OF H-A3-1F (Bushing)
Leak Source: nipple Size: 0.75 Service Type: GAS / VAPOR

1/20/21 9:41 AM	BMartindale	0587	16091	500			
1/22/21 9:37 AM	CMcGee	0083	35	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-2862-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4 " S SIDE OF H-A3-F (Union)
Leak Source: UNION Size: 0.75 Service Type: GAS / VAPOR

1/20/21 8:02 AM	CCollins	3064	3941	500			
1/22/21 9:29 AM	CMcGee	0083	2	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-2911-000 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.4' S SIDE OF H-A3-F (Plug)
Leak Source: SCREWED FITTING Size: 1 Service Type: GAS / VAPOR

1/20/21 9:13 AM	CCollins	3064	899	500			
1/22/21 9:40 AM	CMcGee	0083	19	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-3082-001 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4' S SIDE OF H-A3-1E (90)
Leak Source: 90 Size: 0.75 Service Type: GAS / VAPOR

1/20/21 8:56 AM	GRowland	0589	637	500			
1/22/21 9:42 AM	CMcGee	0083	10	500	1/22/2021	STORK	TIGHTEN CONNECTOR



Leak Detail Report

Indorama OO

From: 1/1/2021 To: 3/31/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
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Unit: OO-A3-W/W-SYS

Area: SUBPART-FF - A3 W/W
SYS

A3-3256-004 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4' N SIDE OF H-A3-D (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/20/21 8:40 AM	NRetherford	3943	6436	500			
1/22/21 9:27 AM	CMcGee	0083	5	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-3267-001 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.1' N SIDE OF H-A3-1D (Tee)
Leak Source: vent valve Size: 0.5 Service Type: GAS / VAPOR

1/20/21 8:45 AM	NRetherford	3943	2858	500			
1/22/21 9:26 AM	CMcGee	0083	173	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-3639-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.2' N SIDE OF H-A3-1B (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/21/21 9:25 AM	NRetherford	3943	757	500			
1/22/21 9:25 AM	CMcGee	0083	7	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-3642-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.2' N SIDE OF H-A3-1B (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/21/21 9:27 AM	NRetherford	3943	1719	500			
1/22/21 9:24 AM	CMcGee	0083	21	500	1/22/2021	STORK	TIGHTEN CONNECTOR

A3-3800-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.2 S SIDE OF H-A3-1B (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/25/21 7:54 AM	NRetherford	3943	1114	500			
1/26/21 8:12 AM	CMcGee	0083	202	500	1/26/2021	STORK	TIGHTEN CONNECTOR

A3-3801-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.2 S SIDE OF H-A3-1B (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/25/21 9:16 AM	NRetherford	3943	15222	500			
1/26/21 8:15 AM	CMcGee	0083	73	500	1/26/2021	STORK	TIGHTEN CONNECTOR

A3-3828-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.4 S SIDE OF H-A3-1B (90)
Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

1/25/21 9:18 AM	NRetherford	3943	28281	500			
1/26/21 8:17 AM	CMcGee	0083	10	500	1/26/2021	STORK	TIGHTEN CONNECTOR

A3-3948-000 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.1 N SIDE OF H-A3-1A (Flange)
Leak Source: flange Size: 4 Service Type: GAS / VAPOR

1/21/21 10:04 AM	BMartindale	0587	7299	500			
1/22/21 9:39 AM	CMcGee	0083	305	500	1/22/2021	STORK	TIGHTEN FLANGE

This report was generated using a filter:

Rule Name is equal to NESHAPS-FF



Leak Detail Report

Indorama OO

From: 4/1/2021 To: 6/30/2021

Include IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
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Unit: OO-A3-W/W-SYS

Area: SUBPART-FF - A3 W/W
SYS

A3-2103-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.5' N SIDE OF H-A3-1J OH (90)
 Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

4/12/21 9:50 AM	NRetherford	3943	37249	500			
4/13/21 1:28 PM	CMcGee	0083	357	500	4/13/2021	TURNER	TIGHTEN CONNECTOR

A3-2213-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.2' S SIDE OF H-A3-1J (Union)
 Leak Source: union Size: 0.5 Service Type: GAS / VAPOR

4/12/21 8:07 AM	GRowland	0589	844	500			
4/13/21 1:29 PM	CMcGee	0083	115	500	4/13/2021	TURNER	TIGHTEN CONNECTOR

A3-2415-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.1 " S SIDE OF H-A3-H (Union)
 Leak Source: union Size: 0.5 Service Type: GAS / VAPOR

4/12/21 7:55 AM	BMartindale	3931	35157	500			
4/13/21 1:31 PM	CMcGee	0083	4	500	4/13/2021	TURNER	TIGHTEN CONNECTOR

A3-2420-000 Comp Type: VALVE Rules: HUNTSMAN, FF 1.1 " S SIDE OF H-A3-H (V-Uncategorized)
 Leak Source: packing Size: 0.75 Service Type: GAS / VAPOR

4/12/21 8:08 AM	BMartindale	3931	1449	500			
4/13/21 1:32 PM	CMcGee	0083	281	500	4/13/2021	TURNER	TIGHTEN PACKING

A3-2548-000 Comp Type: VALVE Rules: HUNTSMAN, FF 0.2 " N SIDE OF H-A3-1G (V-Uncategorized)
 Leak Source: VALVE PACKING Size: 0.75 Service Type: GAS / VAPOR

4/12/21 8:24 AM	CCollins	3064	1020	500			
4/13/21 1:26 PM	CMcGee	0083	24	500	4/13/2021	TURNER	TIGHTEN PACKING

A3-2549-000 Comp Type: VALVE Rules: HUNTSMAN, FF 0.2 " N SIDE OF H-A3-1G (V-Uncategorized)
 Leak Source: VALVE PACKING Size: 0.75 Service Type: GAS / VAPOR

4/12/21 8:00 AM	CCollins	3064	769	500			
4/13/21 1:27 PM	CMcGee	0083	90	500	4/13/2021	TURNER	TIGHTEN PACKING

A3-2913-000 Comp Type: VALVE Rules: HUNTSMAN, FF 1.4' S SIDE OF H-A3-F (V-Uncategorized)
 Leak Source: valve packing Size: 0.75 Service Type: GAS / VAPOR

4/13/21 8:48 AM	GRowland	0589	1134	500			
4/15/21 7:41 AM	CMcGee	0083	108	500	4/15/2021	TURNER	TIGHTEN PACKING

A3-2996-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.2' N SIDE OF H-A3-E (90)
 Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

4/13/21 12:57 PM	GRowland	0589	4978	500			
4/15/21 7:42 AM	CMcGee	0083	204	500	4/15/2021	TURNER	TIGHTEN CONNECTOR

A3-3054-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.2' S SIDE OF H-A3-E (Union)
 Leak Source: union Size: 0.75 Service Type: GAS / VAPOR

4/13/21 7:40 AM	NRetherford	3943	1411	500			
4/15/21 7:43 AM	CMcGee	0083	221	500	4/15/2021	TURNER	TIGHTEN CONNECTOR



Leak Detail Report

Indorama OO

From: 4/1/2021 To: 6/30/2021

Include IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
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Unit: OO-A3-W/W-SYS

Area: SUBPART-FF - A3 W/W
SYS

A3-3078-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4' S SIDE OF H-A3-E (90)
 Leak Source: 99 Size: 0.75 Service Type: GAS / VAPOR

4/13/21 8:13 AM	NRetherford	3943	19011	500			
4/15/21 7:44 AM	CMcGee	0083	91	500	4/15/2021	TURNER	TIGHTEN CONNECTOR

A3-3085-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4' S SIDE OF H-A3-1E (Union)
 Leak Source: union Size: 0.75 Service Type: GAS / VAPOR

4/13/21 8:16 AM	NRetherford	3943	35488	500			
4/15/21 7:45 AM	CMcGee	0083	67	500	4/15/2021	TURNER	TIGHTEN CONNECTOR

A3-3090-000 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4' S SIDE OF H-A3-1E (Plug)
 Leak Source: plug Size: 0.75 Service Type: GAS / VAPOR

4/13/21 8:18 AM	NRetherford	3943	26536	500			
4/15/21 7:46 AM	CMcGee	0083	24	500	4/15/2021	TURNER	TIGHTEN CONNECTOR

A3-3251-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4' N SIDE OF H-A3-D (Union)
 Leak Source: UNION Size: 0.75 Service Type: GAS / VAPOR

4/13/21 8:05 AM	CCollins	3064	8506	500			
4/15/21 7:48 AM	CMcGee	0083	306	500	4/15/2021	TURNER	TIGHTEN CONNECTOR

A3-3678-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.2' N SIDE OF H-A3-1B (Union)
 Leak Source: UNION Size: 0.75 Service Type: GAS / VAPOR

4/13/21 2:41 PM	NHardy	3062	9330	500			
4/15/21 7:49 AM	CMcGee	0083	115	500	4/15/2021	TURNER	TIGHTEN CONNECTOR

A3-3828-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.4 S SIDE OF H-A3-1B (90)
 Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

4/14/21 9:12 AM	NRetherford	3943	16797	500			
4/15/21 7:50 AM	CMcGee	0083	273	500	4/15/2021	TURNER	TIGHTEN CONNECTOR

This report was generated using a filter:

Rule Name is equal to NESHAPS-FF



Leak Detail Report

Indorama OO

From: 7/1/2021 To: 9/30/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
Unit: OO-A3-W/W-SYS					Area: SUBPART-FF - A3 W/W SYS			
A3-2078-001	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.2' N SIDE OF H-A3-1J OH (90)			
	Leak Source: 90		Size: 0.75		Service Type: GAS / VAPOR			
	7/17/21 9:52 AM	BMartindale	3931	2525	500			
	7/19/21 8:59 AM	CMcGee	0096	16	500	7/19/2021	TURNER	TIGHTEN CONNECTOR
A3-2079-001	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.2' N SIDE OF H-A3-1J OH (90)			
	Leak Source: 90		Size: 0.75		Service Type: GAS / VAPOR			
	7/17/21 9:55 AM	BMartindale	3931	5816	500			
	7/19/21 8:58 AM	CMcGee	0096	28	500	7/19/2021	TURNER	TIGHTEN CONNECTOR
A3-2303-000	Comp Type: VALVE		Rules: HUNTSMAN, FF		.3" N SIDE OF H-A3-H (V-Uncategorized)			
	Leak Source: VALVE PACKING		Size: 0.5		Service Type: GAS / VAPOR			
	7/17/21 2:09 PM	NHardy	0587	3120	500			
	7/19/21 8:57 AM	CMcGee	0096	101	500	7/19/2021	TURNER	TIGHTEN PACKING
A3-2304-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		.2" N SIDE OF H-A3-H (Tee)			
	Leak Source: TEE		Size: 0.5		Service Type: GAS / VAPOR			
	7/17/21 2:11 PM	NHardy	0587	9816	500			
	7/19/21 8:56 AM	CMcGee	0096	76	500	7/19/2021	TURNER	TIGHTEN CONNECTOR
A3-2488-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.1 " N SIDE OF H-A3-1G (Union)			
	Leak Source: Union		Size: 0.75		Service Type: GAS / VAPOR			
	7/17/21 8:50 AM	JCollins	0083	2814	500			
	7/19/21 8:54 AM	CMcGee	0096	91	500	7/19/2021	TURNER	TIGHTEN CONNECTOR
A3-2489-S2-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.1 " N SIDE OF H-A3-1G (Flexhose)			
	Leak Source: Hose		Size: 0.75		Service Type: GAS / VAPOR			
	7/17/21 8:57 AM	JCollins	0083	5506	500			
	7/19/21 8:53 AM	CMcGee	0096	22	500	7/19/2021	TURNER	TIGHTEN CONNECTOR
A3-2494-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.1 " N SIDE OF H-A3-1G (Union)			
	Leak Source: Union		Size: 0.75		Service Type: GAS / VAPOR			
	7/17/21 10:14 AM	JCollins	0083	3630	500			
	7/19/21 8:51 AM	CMcGee	0096	58	500	7/19/2021	TURNER	TIGHTEN CONNECTOR
A3-2535-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.4 " N SIDE OF H-A3-1G (Union)			
	Leak Source: Union		Size: 0.75		Service Type: GAS / VAPOR			
	7/17/21 1:18 PM	JCollins	0083	11443	500			
	7/19/21 8:52 AM	CMcGee	0096	99	500	7/19/2021	TURNER	TIGHTEN CONNECTOR
A3-2545-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		0.2 " N SIDE OF H-A3-1G (Union)			
	Leak Source: Union		Size: 0.75		Service Type: GAS / VAPOR			
	7/17/21 1:35 PM	JCollins	0083	793	500			
	7/19/21 8:50 AM	CMcGee	0096	103	500	7/19/2021	TURNER	TIGHTEN CONNECTOR



Leak Detail Report

Indorama OO

From: 7/1/2021 To: 9/30/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
Unit: OO-A3-W/W-SYS					Area: SUBPART-FF - A3 W/W SYS			
A3-2552-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.2 " N SIDE OF H-A3-1G (Union)		
	Leak Source: union		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 9:42 AM	NRetherford	3943	1020	500			
	7/26/21 8:39 AM	CMcGee	0096	123	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2556-S1-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.2 " N SIDE OF H-A3-1G (Plug)		
	Leak Source: tub con		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 9:43 AM	NRetherford	3943	1294	500			
	7/26/21 8:40 AM	CMcGee	0096	86	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2569-003	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.4 " N SIDE OF H-A3-1G (90)		
	Leak Source: connector		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 9:46 AM	NRetherford	3943	1425	500			
	7/26/21 8:41 AM	CMcGee	0096	0	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2630-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.2 " S SIDE OF H-A3-1G (Union)		
	Leak Source: union		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 12:40 PM	NRetherford	3943	1174	500			
	7/26/21 8:42 AM	CMcGee	0096	16	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2705-S1-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			1.1 " N SIDE OF H-A3-1F (Plug)		
	Leak Source: VENT HOLE		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 9:23 AM	CCollins	3064	558	500			
	7/26/21 8:44 AM	CMcGee	0096	217	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2720-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			1.1 " N SIDE OF H-A3-1F (Union)		
	Leak Source: UNION		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 9:42 AM	CCollins	3064	2469	500			
	7/26/21 8:45 AM	CMcGee	0096	386	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2834-003	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.2 " S SIDE OF H-A3-1F (90)		
	Leak Source: union		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 9:08 AM	GRowland	0589	2203	500			
	7/26/21 8:47 AM	CMcGee	0096	109	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2913-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			1.4' S SIDE OF H-A3-F (screw connector)		
	Leak Source: union		Size: 0.75		Service Type: GAS / VAPOR			
	7/23/21 12:37 PM	GRowland	0589	7673	500			
	7/26/21 8:48 AM	CMcGee	0096	77	500	7/26/2021	TURNER	TIGHTEN CONNECTOR
A3-2997-003	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.2' N SIDE OF H-A3-E (90)		
	Leak Source: connector		Size: 0.75		Service Type: GAS / VAPOR			
	7/26/21 8:02 AM	NRetherford	3943	2117	500			
	7/27/21 8:07 AM	CMcGee	0096	58	500	7/27/2021	TURNER	TIGHTEN CONNECTOR



Leak Detail Report

Indorama OO

From: 7/1/2021 To: 9/30/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
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Unit: OO-A3-W/W-SYS

Area: SUBPART-FF - A3 W/W
SYS

A3-2999-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.2' N SIDE OF H-A3-E (90)
 Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

7/26/21 8:04 AM	NRetherford	3943	3367	500			
7/27/21 8:09 AM	CMcGee	0096	23	500	7/27/2021	TURNER	TIGHTEN CONNECTOR

A3-3000-001 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.2' N SIDE OF H-A3-E (90)
 Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

7/26/21 8:06 AM	NRetherford	3943	18479	500			
7/27/21 8:10 AM	CMcGee	0096	0	500	7/27/2021	TURNER	TIGHTEN CONNECTOR

A3-3002-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.2' N SIDE OF H-A3-E (90)
 Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

7/26/21 8:08 AM	NRetherford	3943	6223	500			
7/27/21 8:12 AM	CMcGee	0096	187	500	7/27/2021	TURNER	TIGHTEN CONNECTOR

A3-3089-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 0.4' S SIDE OF H-A3-1E (Union)
 Leak Source: union Size: 0.75 Service Type: GAS / VAPOR

7/26/21 1:01 PM	NRetherford	3943	7411	500			
7/27/21 8:13 AM	CMcGee	0096	74	500	7/27/2021	TURNER	TIGHTEN CONNECTOR

A3-3120-003 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.0' S SIDE OF H-A3-1E (90)
 Leak Source: connector Size: 0.75 Service Type: GAS / VAPOR

7/26/21 1:10 PM	NRetherford	3943	2208	500			
7/27/21 8:15 AM	CMcGee	0096	39	500	7/27/2021	TURNER	TIGHTEN CONNECTOR

A3-3399-002 Comp Type: CONNECTOR Rules: HUNTSMAN, FF 1.0' N SIDE OF H-A3-1C (Union)
 Leak Source: union Size: 0.75 Service Type: GAS / VAPOR

7/26/21 9:16 AM	GRowland	0589	1121	500			
7/27/21 8:18 AM	CMcGee	0096	161	500	7/27/2021	TURNER	TIGHTEN CONNECTOR

A3-5274-000 Comp Type: CONNECTOR Rules: HUNTSMAN, FF C-O-14B N OF F-0-114A (Flange)
 Leak Source: FLANGE Size: 3 Service Type: LIGHT LIQUID

7/27/21 3:20 PM	NHardy	0587	45808	500			
7/28/21 7:19 AM	CMcGee	0096	235	500	7/28/2021	TURNER	TIGHTEN FLANGE

This report was generated using a filter:

Rule Name is equal to NESHAPS-FF



Leak Detail Report

Indorama OO

From: 10/1/2021 To: 12/31/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
Unit: OO-A3-W/W-SYS					Area: SUBPART-FF - A3 W/W SYS			
A3-2003-000	Comp Type: VALVE	Rules: HUNTSMAN, FF			0.2' N SIDE OF H-A3-1J (V-Uncategorized)			
	Leak Source: tub con	Size: 1			Service Type: GAS / VAPOR			
	10/14/21 7:38 AM	NRetherford	3943	9179	500			
	10/15/21 8:02 AM	CMcGee	0096	31	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2015-000	Comp Type: VALVE	Rules: HUNTSMAN, FF			0.2' N SIDE OF H-A3-1J (V-Uncategorized)			
	Leak Source: valve	Size: 0.75			Service Type: GAS / VAPOR			
	10/14/21 8:01 AM	NRetherford	3943	23779	500			
	10/15/21 8:03 AM	CMcGee	0096	61	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2046-000	Comp Type: VALVE	Rules: HUNTSMAN, FF			0.4' N SIDE OF H-A3-1J (V-Uncategorized)			
	Leak Source: tub con	Size: 1			Service Type: GAS / VAPOR			
	10/14/21 8:22 AM	NRetherford	3943	1888	500			
	10/15/21 8:01 AM	CMcGee	0096	361	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2148-S1-000	Comp Type: CONNECTOR	Rules: HUNTSMAN, FF			0.2 S SIDE OF H-A3-1J (Plug)			
	Leak Source: plug	Size: 1			Service Type: GAS / VAPOR			
	10/14/21 2:21 PM	NRetherford	3943	15615	500			
	10/15/21 8:13 AM	CMcGee	0096	110	500	10/15/2021	TURNER	TIGHTEN CONNECTOR
A3-2248-002	Comp Type: CONNECTOR	Rules: HUNTSMAN, FF			1.1' N SIDE OF H-A3-H (Union)			
	Leak Source: UNION	Size: 0.5			Service Type: GAS / VAPOR			
	10/14/21 2:57 PM	NHardy	3071	3170	500			
	10/15/21 8:08 AM	CMcGee	0096	6	500	10/15/2021	TURNER	TIGHTEN CONNECTOR
A3-2252-001	Comp Type: CONNECTOR	Rules: HUNTSMAN, FF			1.1' N SIDE OF H-A3-H (90)			
	Leak Source: UNION	Size: 0.75			Service Type: GAS / VAPOR			
	10/14/21 2:55 PM	NHardy	3071	8354	500			
	10/15/21 8:07 AM	CMcGee	0096	23	500	10/15/2021	TURNER	TIGHTEN CONNECTOR
A3-2304-000	Comp Type: CONNECTOR	Rules: HUNTSMAN, FF			2" N SIDE OF H-A3-H (Tee)			
	Leak Source: SCREWED FITTING	Size: 0.5			Service Type: GAS / VAPOR			
	10/9/21 10:16 AM	GRowland	3071	20400	500			
	10/11/21 10:30 AM	CMcGee	0096	9	500	10/11/2021	TURNER	TIGHTEN CONNECTOR
A3-2507-000	Comp Type: VALVE	Rules: HUNTSMAN, FF			1.2 " N SIDE OF H-A3-1G (V-Uncategorized)			
	Leak Source: valve	Size: 0.75			Service Type: GAS / VAPOR			
	10/14/21 9:15 AM	BMartindale	3931	2135	500			
	10/15/21 8:13 AM	CMcGee	0096	16	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2508-000	Comp Type: VALVE	Rules: HUNTSMAN, FF			1.2 " N SIDE OF H-A3-1G (V-Uncategorized)			
	Leak Source: valve	Size: 0.75			Service Type: GAS / VAPOR			
	10/14/21 9:12 AM	BMartindale	3931	971	500			
	10/15/21 8:14 AM	CMcGee	0096	33	500	10/15/2021	TURNER	TIGHTEN PACKING



Leak Detail Report

Indorama OO

From: 10/1/2021 To: 12/31/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
Unit: OO-A3-W/W-SYS				Area: SUBPART-FF - A3 W/W SYS				
A3-2509-S2-000	Comp Type:	CONNECTOR		Rules: HUNTSMAN, FF			1.2 " N SIDE OF H-A3-1G (Flexhose)	
	Leak Source:	threads		Size:	0.75	Service Type: GAS / VAPOR		
	10/14/21 9:04 AM	BMartindale	3931	1685	500			
	10/15/21 8:15 AM	CMcGee	0096	19	500	10/15/2021	TURNER	TIGHTEN CONNECTOR
A3-2627-000	Comp Type:	VALVE		Rules: HUNTSMAN, FF			0.2 " S SIDE OF H-A3-1G (V-Uncategorized)	
	Leak Source:	VALVE PACKING		Size:	0.75	Service Type: GAS / VAPOR		
	10/14/21 9:08 AM	CCollins	3064	902	500			
	10/15/21 8:11 AM	CMcGee	0096	8	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2634-000	Comp Type:	VALVE		Rules: HUNTSMAN, FF			0.2 " S SIDE OF H-A3-1G (V-Uncategorized)	
	Leak Source:	VALVE PACKING		Size:	0.75	Service Type: GAS / VAPOR		
	10/14/21 9:22 AM	CCollins	3064	2377	500			
	10/15/21 8:10 AM	CMcGee	0096	46	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2669-000	Comp Type:	VALVE		Rules: HUNTSMAN, FF			1.3 " S SIDE OF H-A3-1G (V-Uncategorized)	
	Leak Source:	VALVE PACKING		Size:	0.75	Service Type: GAS / VAPOR		
	10/14/21 10:20 AM	CCollins	3064	101909	500			
	10/15/21 8:18 AM	CMcGee	0096	32	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2673-000	Comp Type:	VALVE		Rules: HUNTSMAN, FF			1.3 " S SIDE OF H-A3-1G (V-Uncategorized)	
	Leak Source:	VALVE PACKING		Size:	0.75	Service Type: GAS / VAPOR		
	10/14/21 10:29 AM	CCollins	3064	535	500			
	10/15/21 8:17 AM	CMcGee	0096	21	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2695-000	Comp Type:	VALVE		Rules: HUNTSMAN, FF			1.4 " S SIDE OF H-A3-1G (V-Uncategorized)	
	Leak Source:	VALVE PACKING		Size:	0.75	Service Type: GAS / VAPOR		
	10/14/21 12:47 PM	CCollins	3064	1912	500			
	10/15/21 8:19 AM	CMcGee	0096	10	500	10/15/2021	TURNER	TIGHTEN PACKING
A3-2803-000	Comp Type:	VALVE		Rules: HUNTSMAN, FF			0.4 " N SIDE OF H-A3-1F (V-Uncategorized)	
	Leak Source:	VALVE PACKING		Size:	0.75	Service Type: GAS / VAPOR		
	10/15/21 9:07 AM	CCollins	3064	821	500			
	10/18/21 1:07 PM	CMcGee	0096	312	500	10/18/2021	TURNER	TIGHTEN PACKING
A3-2862-000	Comp Type:	VALVE		Rules: HUNTSMAN, FF			0.4 " S SIDE OF H-A3-1F (V-Uncategorized)	
	Leak Source:	VALVE PACKING		Size:	0.75	Service Type: GAS / VAPOR		
	10/15/21 10:50 AM	CCollins	3064	11099	500			
	10/18/21 1:08 PM	CMcGee	0096	28	500	10/18/2021	TURNER	TIGHTEN PACKING
A3-2979-003	Comp Type:	CONNECTOR		Rules: HUNTSMAN, FF			1.3' N SIDE OF H-A3-E (90)	
	Leak Source:	connector		Size:	0.75	Service Type: GAS / VAPOR		
	10/15/21 8:08 AM	NRetherford	3943	21331	500			
	10/18/21 1:10 PM	CMcGee	0096	210	500	10/18/2021	TURNER	TIGHTEN CONNECTOR



Leak Detail Report

Indorama OO

From: 10/1/2021 To: 12/31/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
Unit: OO-A3-W/W-SYS					Area: SUBPART-FF - A3 W/W SYS			
A3-2988-003	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.3' N SIDE OF H-A3-E (90)			
	Leak Source: connector		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 8:16 AM	NRetherford	3943	5653	500			
	10/18/21 1:15 PM	CMcGee	0096	32	500	10/18/2021	TURNER	TIGHTEN CONNECTOR
A3-2999-003	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		0.2' N SIDE OF H-A3-E (90)			
	Leak Source: connector		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 8:31 AM	NRetherford	3943	4847	500			
	10/18/21 1:18 PM	CMcGee	0096	77	500	10/18/2021	TURNER	TIGHTEN CONNECTOR
A3-3030-000	Comp Type: VALVE		Rules: HUNTSMAN, FF		0.4' N SIDE OF H-A3-E (V-Uncategorized)			
	Leak Source: valve		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 1:47 PM	NRetherford	3943	1687	500			
	10/18/21 1:19 PM	CMcGee	0096	14	500	10/18/2021	TURNER	TIGHTEN PACKING
A3-3056-000	Comp Type: VALVE		Rules: HUNTSMAN, FF		0.2' S SIDE OF H-A3-E (V-Uncategorized)			
	Leak Source: valve		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 9:44 AM	NRetherford	3943	984	500			
	10/18/21 1:22 PM	CMcGee	0096	28	500	10/18/2021	TURNER	TIGHTEN PACKING
A3-3258-000	Comp Type: VALVE		Rules: HUNTSMAN, FF		0.4' N SIDE OF H-A3-D (V-Uncategorized)			
	Leak Source: valve		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 7:52 AM	BMartindale	3931	1820	500			
	10/18/21 1:27 PM	CMcGee	0096	101	500	10/18/2021	TURNER	TIGHTEN PACKING
A3-3268-S2-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		0.1' N SIDE OF H-A3-1D (Plug)			
	Leak Source: vent		Size: 0.5		Service Type: GAS / VAPOR			
	10/15/21 8:05 AM	BMartindale	3931	899	500			
	10/18/21 1:25 PM	CMcGee	0096	67	500	10/18/2021	TURNER	TIGHTEN CONNECTOR
A3-3396-000	Comp Type: VALVE		Rules: HUNTSMAN, FF		1.0' N SIDE OF H-A3-1C (V-Uncategorized)			
	Leak Source: packing		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 1:09 PM	JWilson	0589	1517	500			
	10/18/21 1:32 PM	CMcGee	0096	25	500	10/18/2021	TURNER	TIGHTEN PACKING
A3-3399-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF		1.0' N SIDE OF H-A3-1C (Union)			
	Leak Source: union		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 1:16 PM	JWilson	0589	1435	500			
	10/18/21 1:34 PM	CMcGee	0096	19	500	10/18/2021	TURNER	TIGHTEN CONNECTOR
A3-3400-000	Comp Type: VALVE		Rules: HUNTSMAN, FF		1.0' N SIDE OF H-A3-1C (V-Uncategorized)			
	Leak Source: packing		Size: 0.75		Service Type: GAS / VAPOR			
	10/15/21 1:19 PM	JWilson	0589	13870	500			
	10/18/21 1:37 PM	CMcGee	0096	31	500	10/18/2021	TURNER	TIGHTEN PACKING



Leak Detail Report

Indorama OO

From: 10/1/2021 To: 12/31/2021

Include Leaks found while on DOR and IRO Leaks

Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
Unit: OO-A3-W/W-SYS					Area: SUBPART-FF - A3 W/W SYS			
A3-3454-000	Comp Type: VALVE		Rules: HUNTSMAN, FF			0.2' N SIDE OF H-A3-1C (V-Uncategorized)		
	Leak Source: valve		Size: 0.75		Service Type: GAS / VAPOR			
	10/22/21 8:50 AM	NRetherford	3943	4033	500			
	10/25/21 8:19 AM	CMcGee	0096	24	500	10/25/2021	TURNER	TIGHTEN PACKING
A3-3458-000	Comp Type: VALVE		Rules: HUNTSMAN, FF			0.2' N SIDE OF H-A3-1C (V-Uncategorized)		
	Leak Source: valve		Size: 0.75		Service Type: GAS / VAPOR			
	10/22/21 9:48 AM	NRetherford	3943	896	500			
	10/25/21 8:20 AM	CMcGee	0096	16	500	10/25/2021	TURNER	TIGHTEN PACKING
A3-3678-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.2' N SIDE OF H-A3-1B (Union)		
	Leak Source: UNION		Size: 0.75		Service Type: GAS / VAPOR			
	10/22/21 10:04 AM	CCollins	3064	2999	500			
	10/25/21 8:22 AM	CMcGee	0096	73	500	10/25/2021	TURNER	TIGHTEN CONNECTOR
A3-3704-002	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.4' N SIDE OF H-A3-1B (Union)		
	Leak Source: UNION		Size: 0.75		Service Type: GAS / VAPOR			
	10/22/21 10:48 AM	CCollins	3064	1252	500			
	10/25/21 8:23 AM	CMcGee	0096	64	500	10/25/2021	TURNER	TIGHTEN CONNECTOR
A3-3830-000	Comp Type: VALVE		Rules: HUNTSMAN, FF			1.4 S SIDE OF H-A3-1B (V-Uncategorized)		
	Leak Source: valve		Size: 1		Service Type: GAS / VAPOR			
	10/22/21 8:07 AM	BMartindale	3931	1853	500			
	10/25/21 8:27 AM	CMcGee	0096	310	500	10/25/2021	TURNER	TIGHTEN PACKING
A3-3830-S1-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			1.4 S SIDE OF H-A3-1B (Plug)		
	Leak Source: plug		Size: 1		Service Type: GAS / VAPOR			
	10/22/21 8:07 AM	BMartindale	3931	1305	500			
	10/25/21 8:28 AM	CMcGee	0096	421	500	10/25/2021	TURNER	TIGHTEN CONNECTOR
A3-3954-S1-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.1 N SIDE OF H-A3-1A FCV-80A (Nipple)		
	Leak Source: fitting		Size: 0.75		Service Type: GAS / VAPOR			
	10/22/21 12:27 PM	BMartindale	3931	1159	500			
	10/25/21 8:25 AM	CMcGee	0096	19	500	10/25/2021	TURNER	TIGHTEN CONNECTOR
A3-4274-S1-000	Comp Type: CONNECTOR		Rules: HUNTSMAN, FF			0.8 S/G W SIDE OF F-A3-120B (POEL) (Plug)		
	Leak Source: SCREWED FITTING		Size: 0.5		Service Type: GAS / VAPOR			
	10/26/21 4:56 PM	NHardy	3071	7035	500			
	10/28/21 8:42 AM	CMcGee	0096	22	500	10/28/2021	TURNER	TIGHTEN CONNECTOR
A3-4381-000	Comp Type: VALVE		Rules: HUNTSMAN, FF			0.2 FILTERS W OF P-A3-237 A&B (V-Uncategorized)		
	Leak Source: VALVE PACKING		Size: 4		Service Type: LIGHT LIQUID			
	10/26/21 1:00 PM	NHardy	3071	1267	500			
	10/28/21 8:45 AM	CMcGee	0096	27	500	10/28/2021	TURNER	TIGHTEN PACKING



Leak Detail Report

Indorama OO

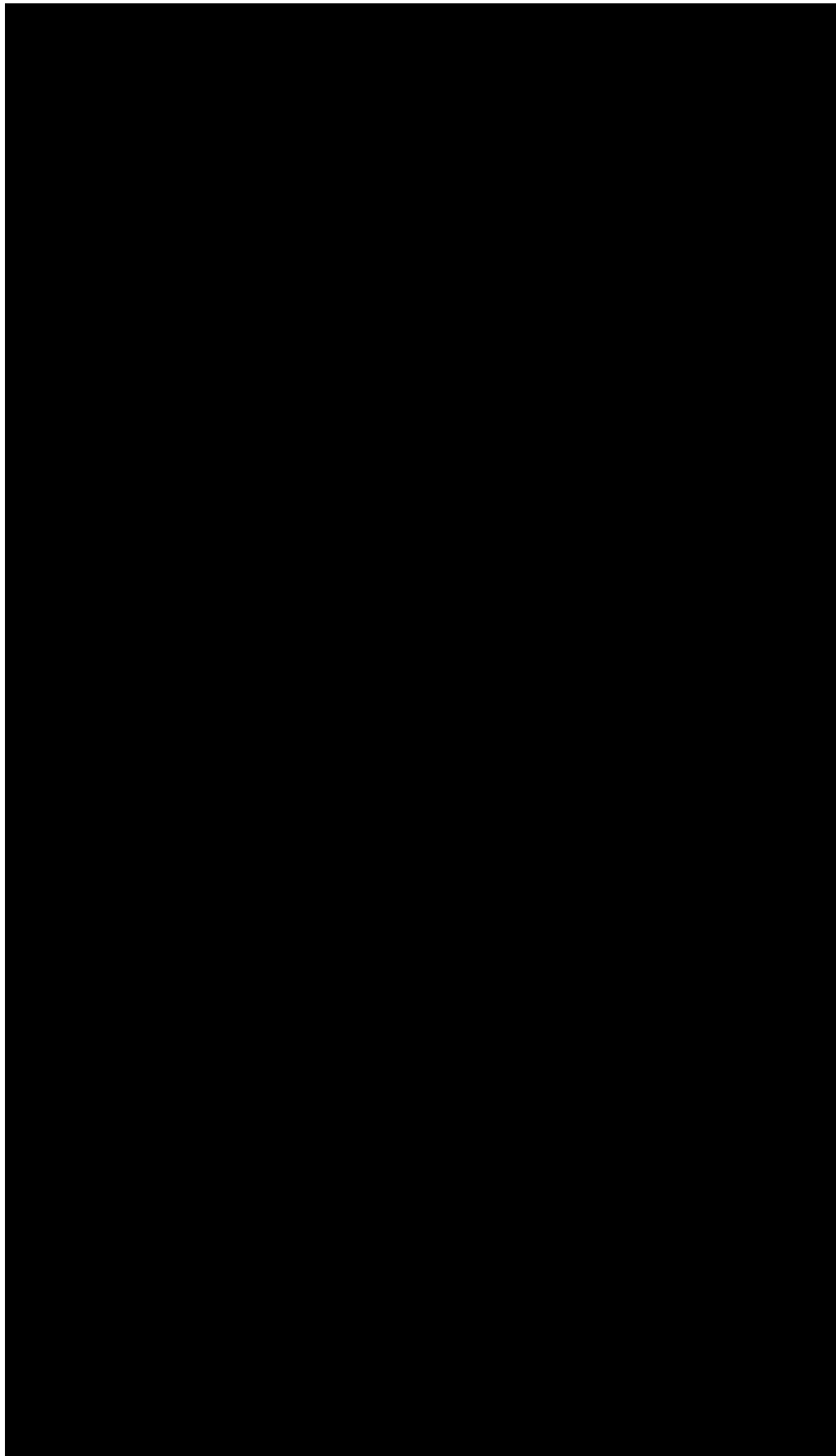
From: 10/1/2021 To: 12/31/2021

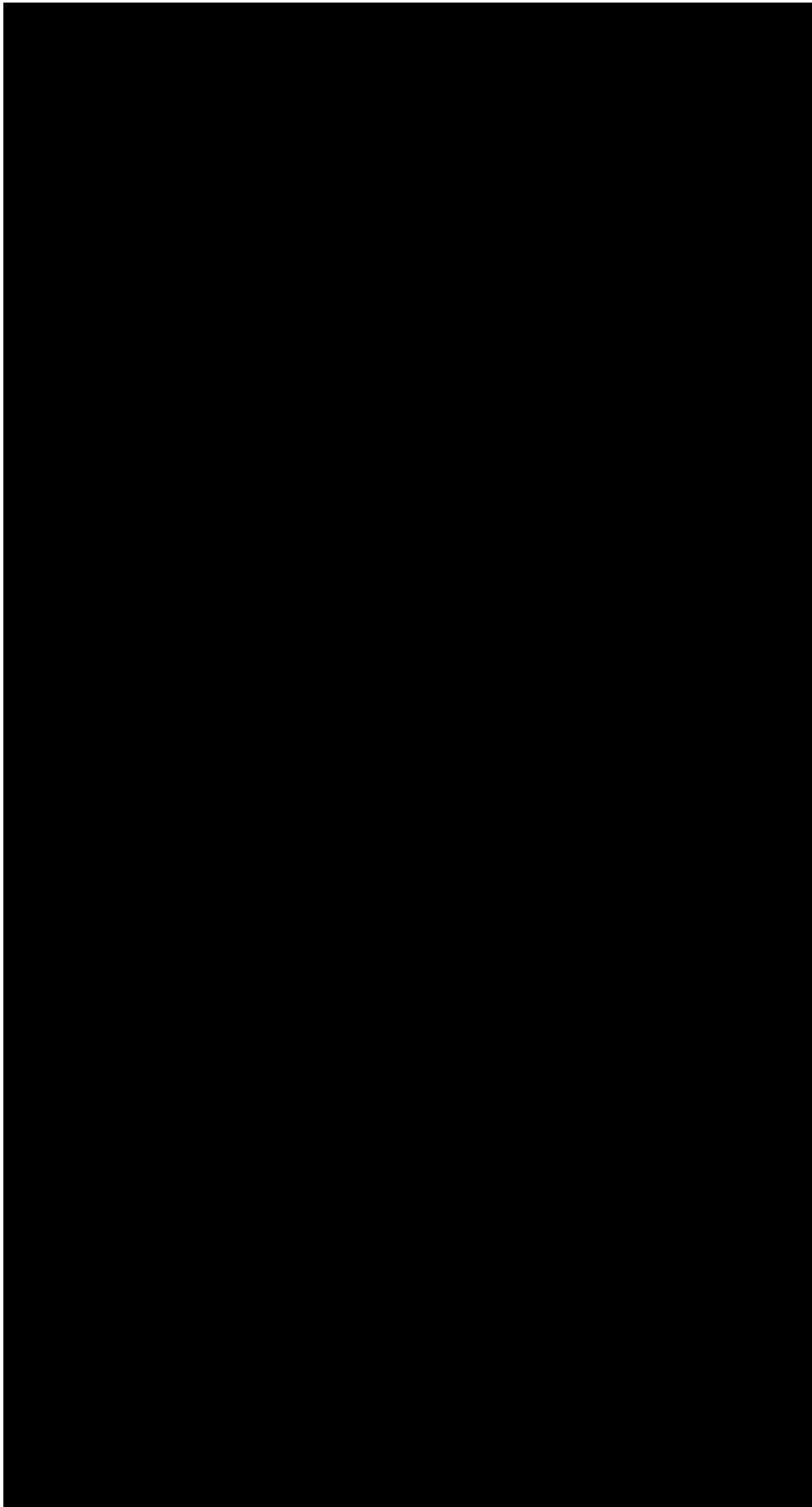
Include Leaks found while on DOR and IRO Leaks

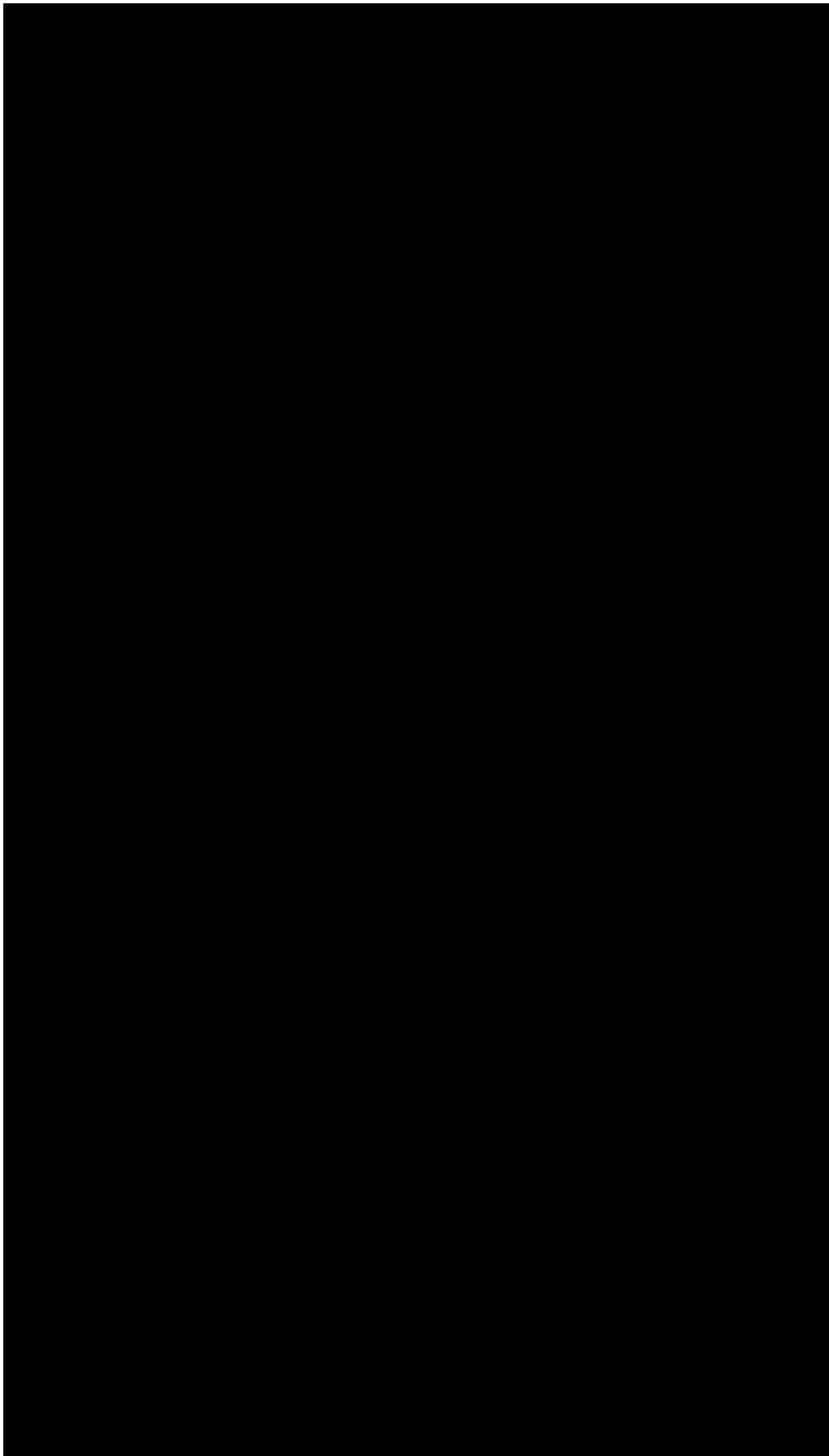
Tag	Monitor Date	Inspector	Instrument	PPM	Thresh.	Rep. Date	Repaired By:	Repair Type
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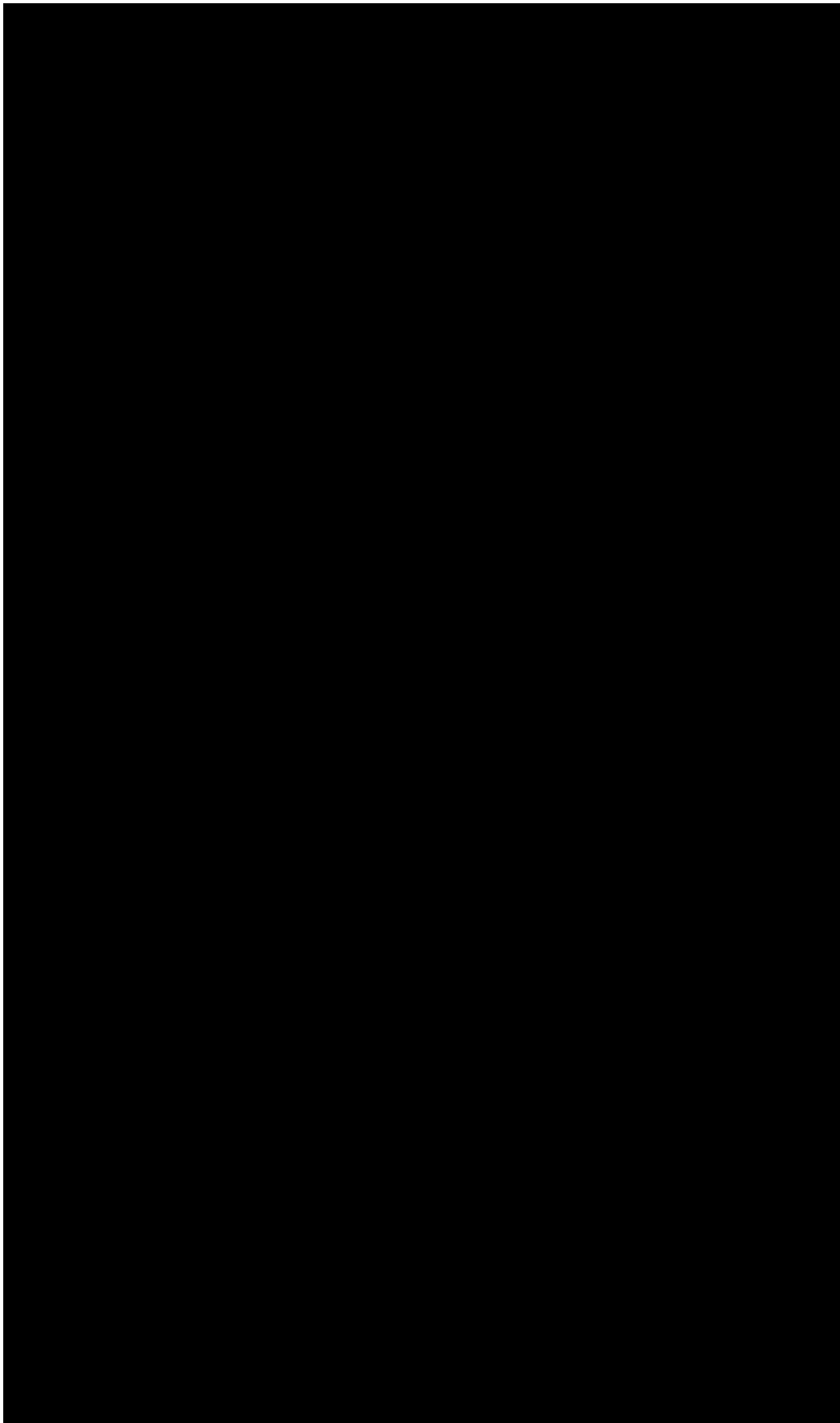
This report was generated using a filter:

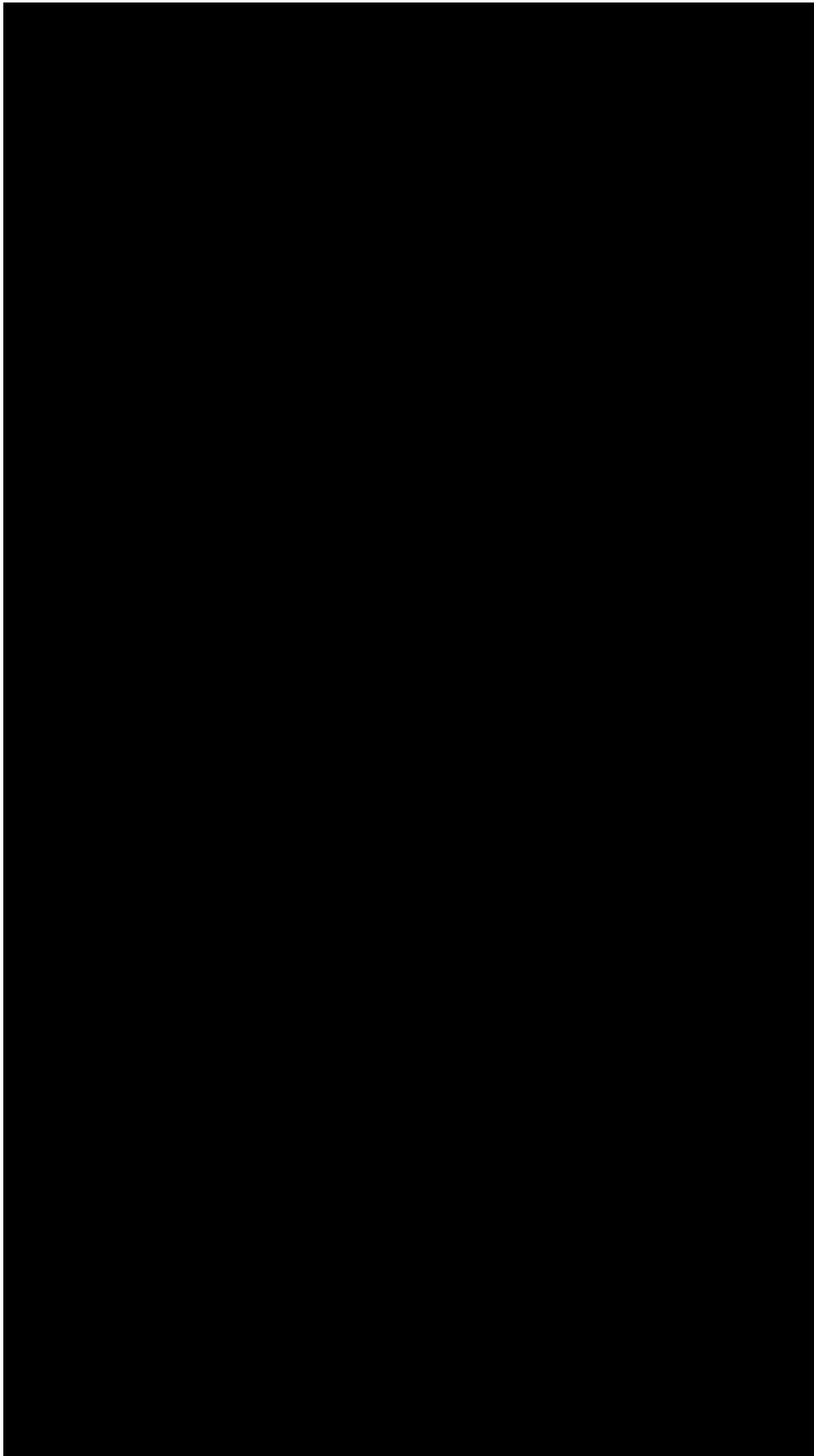
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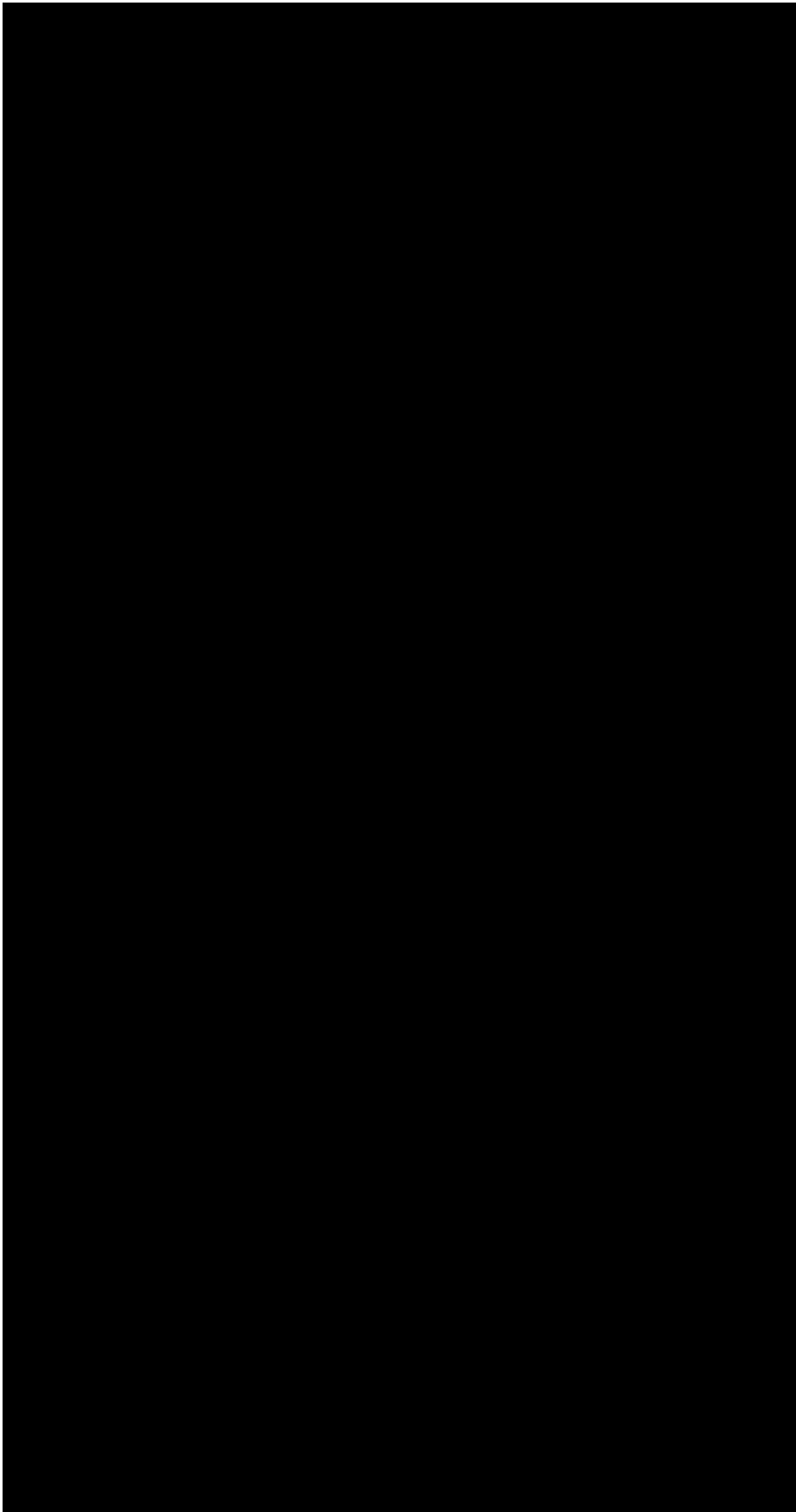


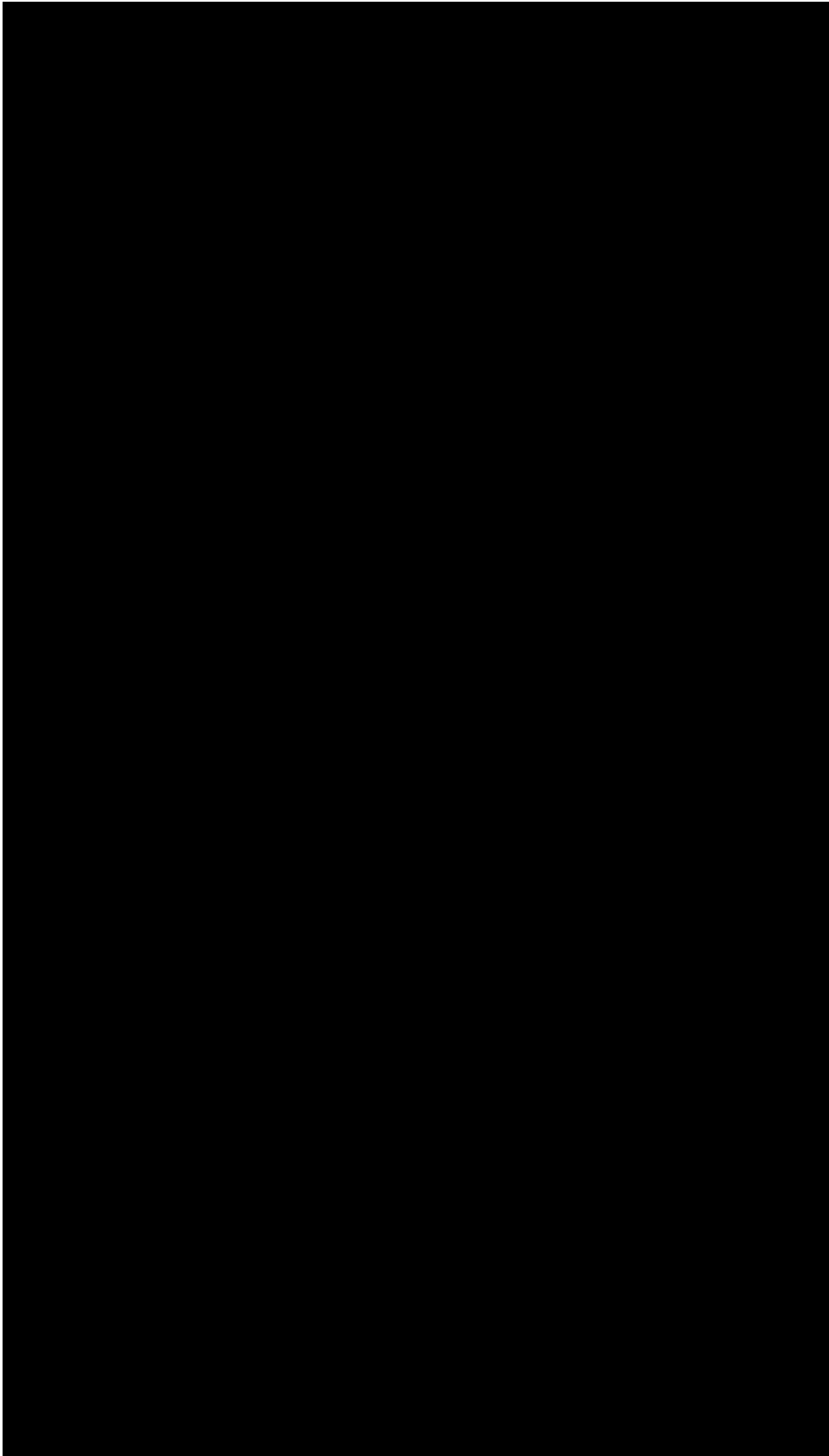


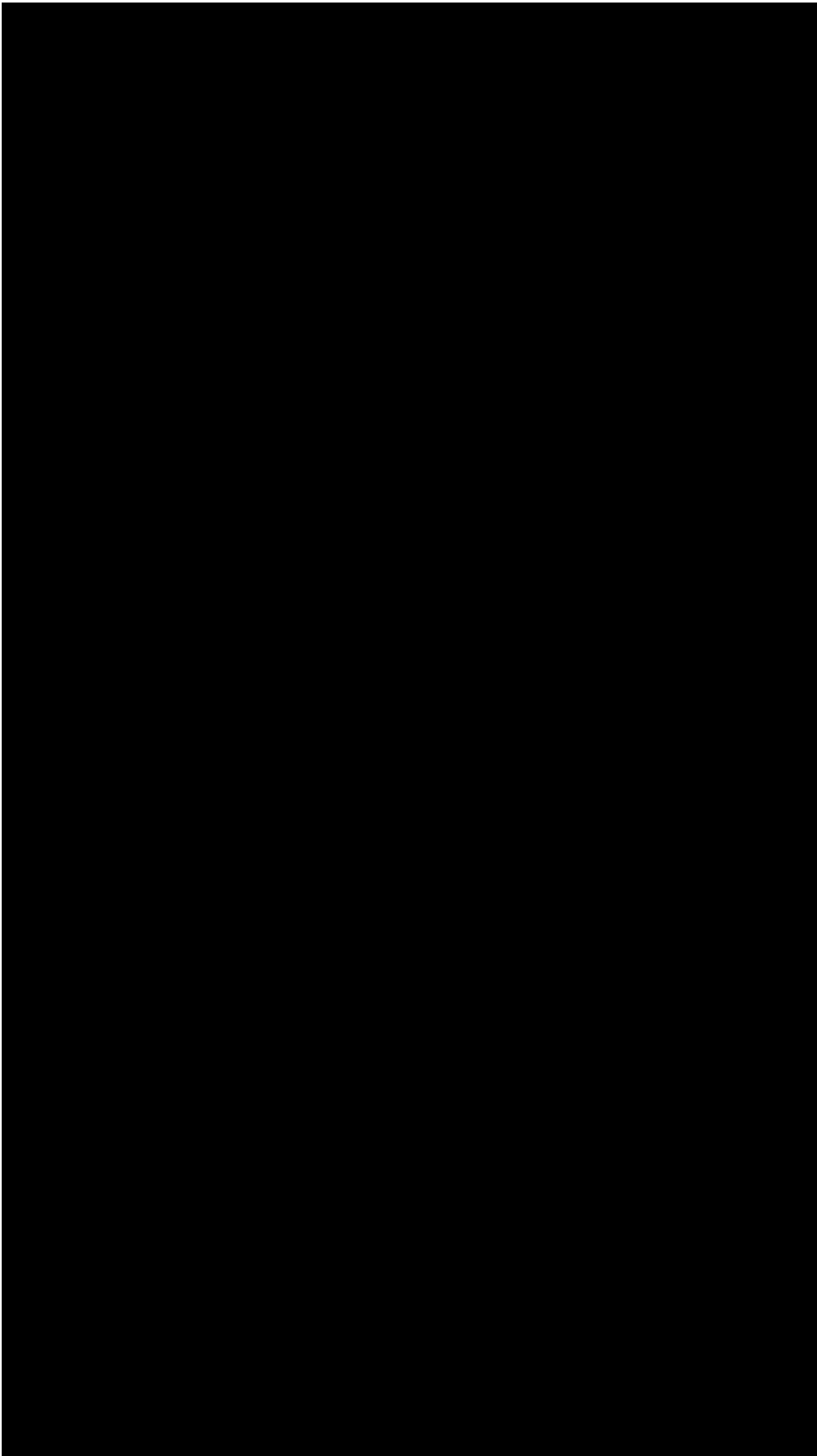


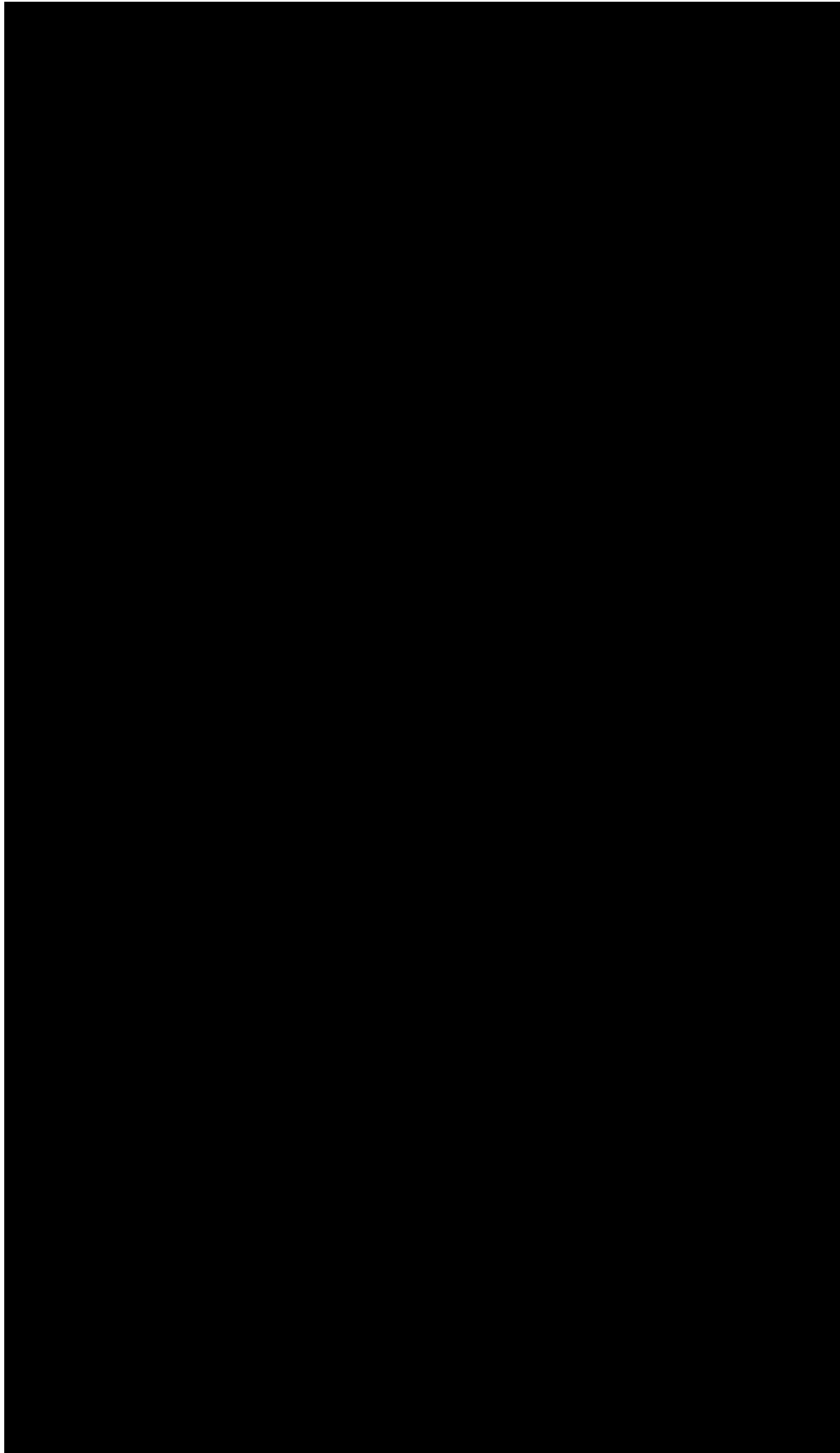


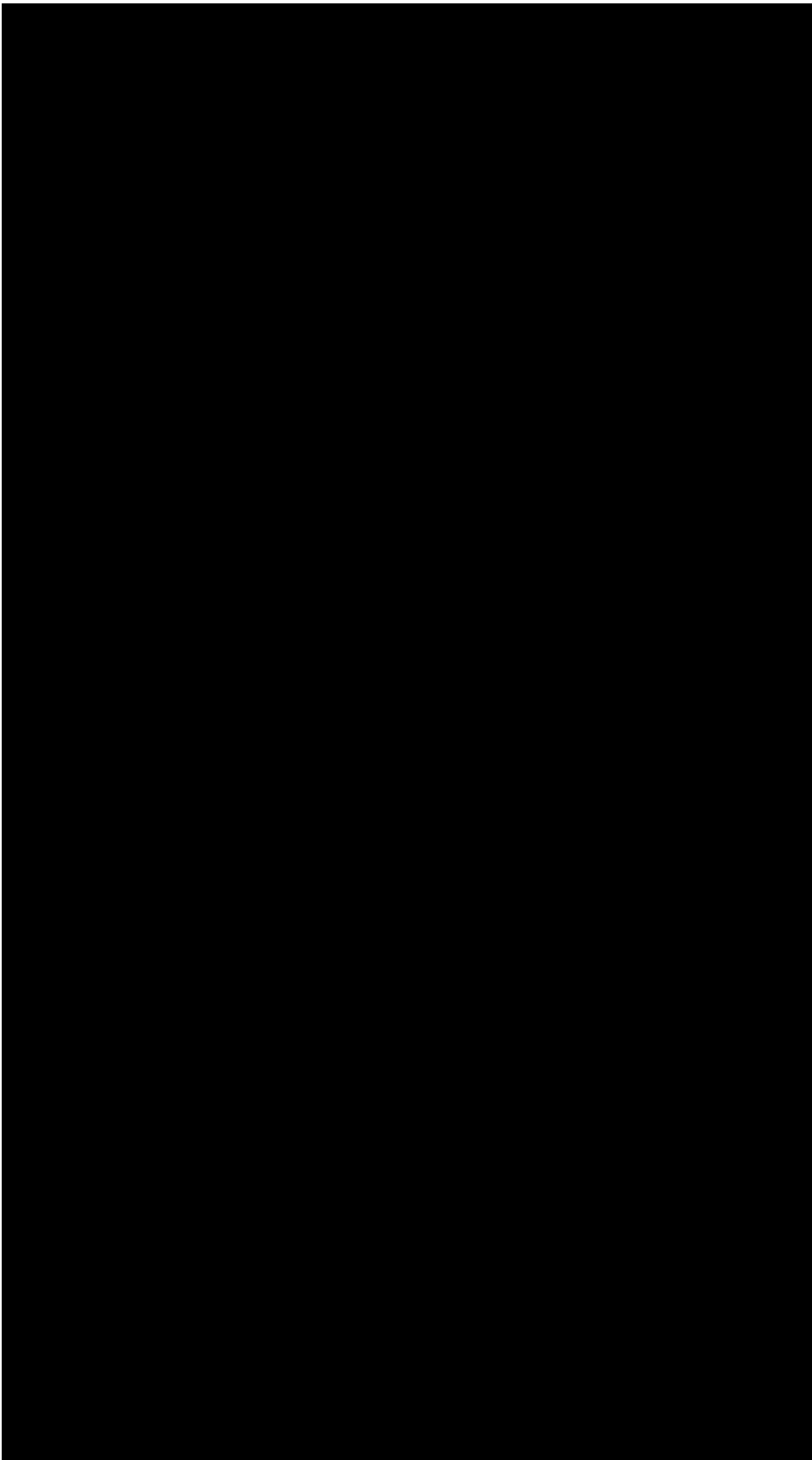


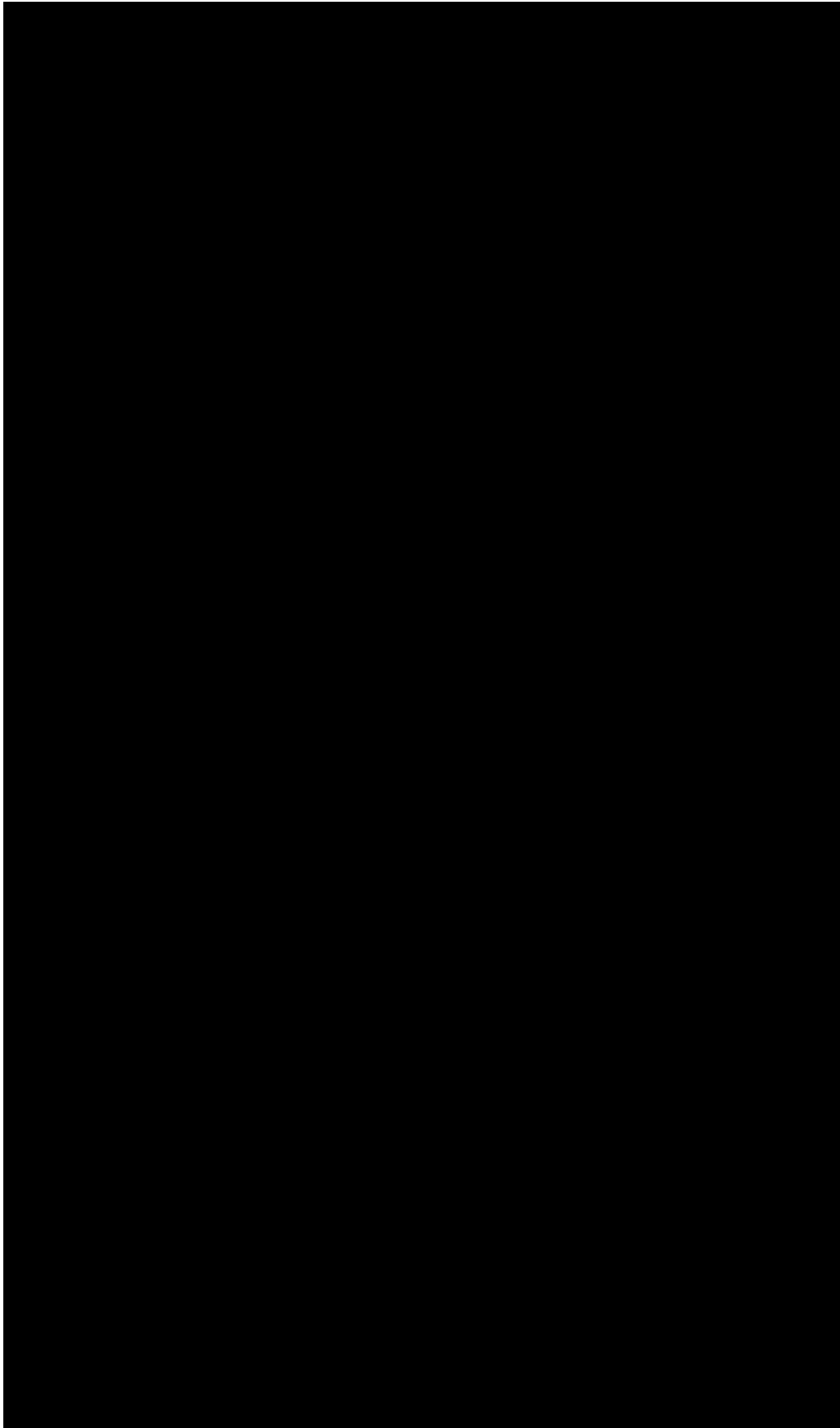


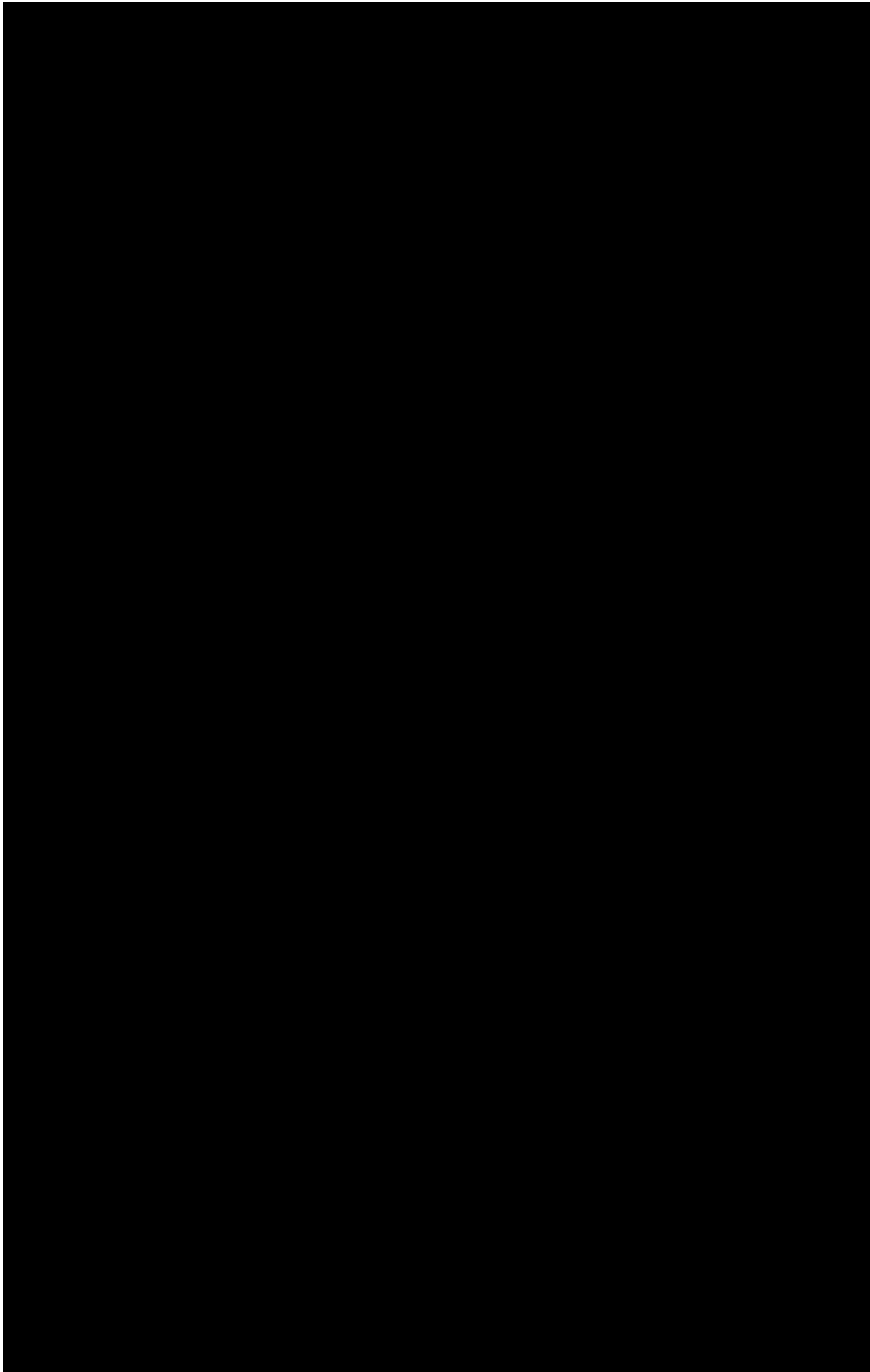


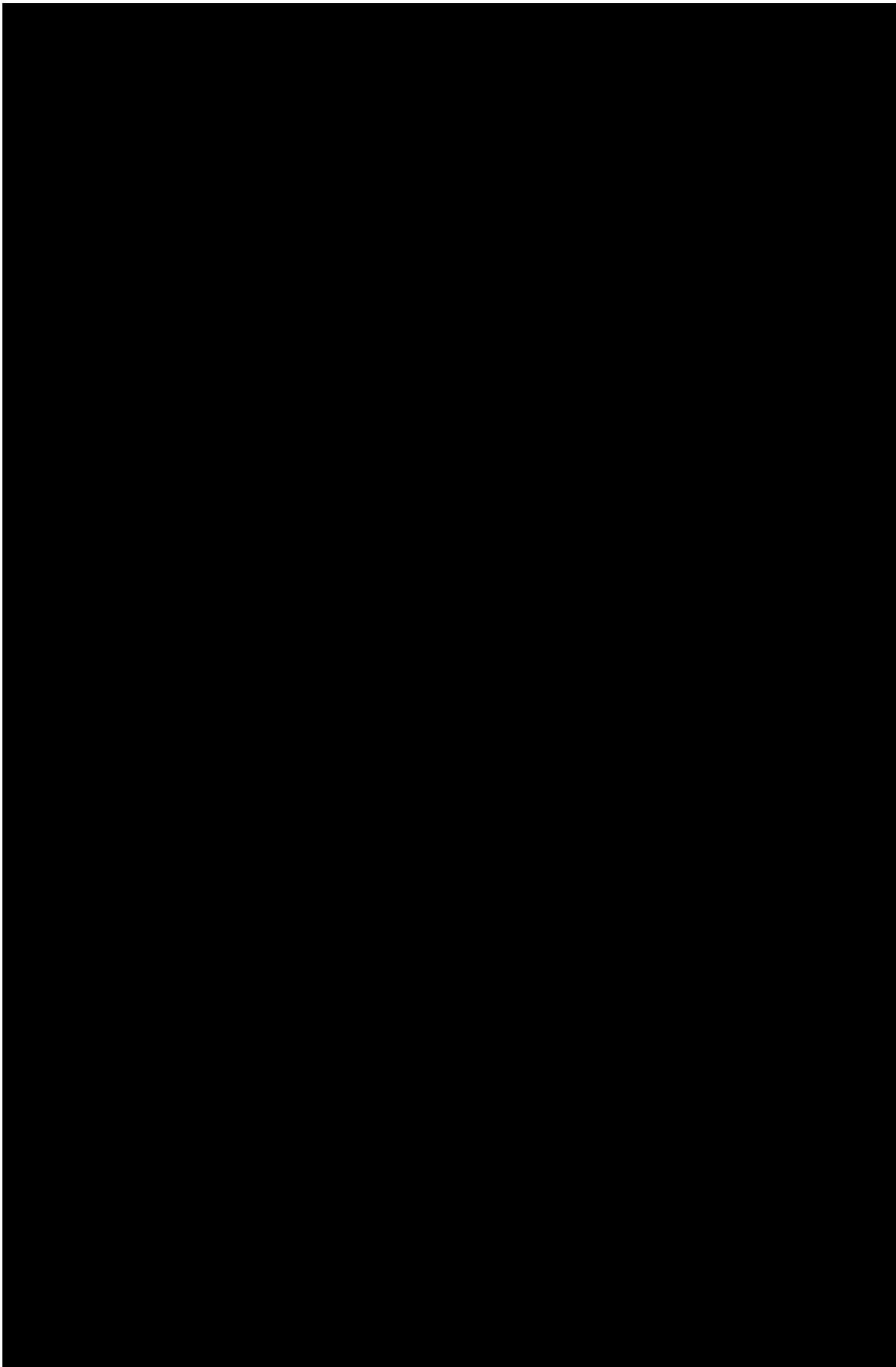














From: [Schafer, Cynthia](#)
To: [Bustamante, Armando](#); [Buening, Hans](#); [Nabiyar, Zel](#); [Leiker, Brianna](#); [Schneider, Matthew](#)
Subject: FW: Follow-up records request - NEIC CAA inspection
Date: Friday, November 4, 2022 8:02:17 AM
Attachments: [image001.png](#)
[image003.png](#)

Downloading the files now to a folder called "Received 11-4-22". See explanations below from Mike.

Thanks,
Cindy

Cindy Schafer, P.E.

Environmental Engineer
U.S. Environmental Protection Agency
National Enforcement Investigations Center
Denver Federal Center, Building 25 | Denver, CO 80225
303-462-9310

From: Michael Dubois <Michael.Dubois@us.indorama.net>
Sent: Thursday, November 3, 2022 4:54 PM
To: Schafer, Cynthia <Schafer.Cynthia@epa.gov>
Cc: Leslie Stuart <Leslie.Stuart@us.indorama.net>
Subject: RE: Follow-up records request - NEIC CAA inspection

Hi Cindy,

We have uploaded the documents requested. I've combined each of the recent requests into a list below with comments for clarification. Let me know if we missed something. Thanks.

- "The LDAR database we received seems to only have information for the F5 area. I was expecting to get LDAR data for the ethylene and ethylene oxide processes at a minimum (during the inspection I think someone stated that the LDAR database covered the entire facility). I'd like to get the LDAR database (.bak file) for the ethylene and ethylene oxide process units, including the associated tanks and loading racks."

Uploaded to [FTP 11/02/2022](#)

- Records showing how much AD was offloaded onto trucks/sold from January 2018 - October 2022

Uploaded to [FTP 11/03/2022](#)

- Analysis/test results of the AD showing the benzene content

Uploaded to [FTP 11/03/2022](#)

- The underlying analytical data that supports the TAB reports including information about exactly where samples were collected.
 - We have the reported benzene quantities and the flow rates; we are asking for the test

results and explanations of where the samples were taken

[This data appears to have been in use since 2004. We are unable to locate this information.](#)

- In the files titled “YEAR BWON LDAR” there are records of leaks found and repaired that were identified as subject to BWON LDAR requirements. We aren’t able to tell what pieces of equipment the leaks were found on. For each leak identified in the 2018-2021 BWON LDAR report, could you provide a narrative description of where each leak was found and what type of BWON waste management unit it is associated with? For example, the first leak in the 2020 BWON LDAR report is at unit OO-A3-W/W-SYS and at A3-2162-002 and is a connector. What type of unit is this? (e.g., vessel 2162 and it is a waste water separator).

[Uploaded to FTP 11/03/2022](#)

- 40 CFR Part 63, YY NOCS [ethylene MACT NOCS]

[Uploaded to FTP 11/03/2022](#)

- Follow-Up Questions: What material is in the AD loading sump that is associated with the AD loading rack/AD washoil sump? – the “AD Loading Sump” tab in the “2020 Calcs.xls” states that this waste stream is not straight aromatic distillate and that it is controlled (a vacuum truck is used to remove material on the filter). How much of the material in the AD loading sump is aromatic distillate and how much is something else? Does the non-aromatic distillate material contain no benzene? Is this waste stream the only waste steam that is generated from the filter?

[Uploaded to FTP 11/03/2022](#)

- 40 CFR Part 63, Subparts F and G NOCS that includes info for EtO tanks and loading racks

[The NOCs cannot be located. The R and S HON Study for storage vessels was previously provided. The R and S HON Study for loading racks was uploaded to FTP 11/03/2022.](#)

- Original HON audit report [the report provided was an update covering the status of corrective actions being taken as a result of the audit]

[Uploaded to FTP 11/03/2022](#)

- Title V reports where HON violations found in audit were disclosed and any other disclosures to EPA of HON violations

[Already provided for Indorama reports. We do not have a signed copy of the original Huntsman submission.](#)

- Flare date (excel format – same info/format as previously received) covering October 17-21, 2022

[Uploaded to FTP on 11/03/2022. This includes the additional data Zel requested.](#)

- BWON reports containing quarterly visual and annual Method 21 inspections for the waste management units

[Quarterly visuals included in previously provided weekly AVO inspections. Method 21 inspections uploaded to FTP site on 11/03/2022.](#)

Michael DuBois
Environmental Manager
Indorama Ventures-Port Neches Operations
O: 409-723-3670
C: 360-389-1516

From: Schafer, Cynthia <Schafer.Cynthia@epa.gov>
Sent: Tuesday, November 1, 2022 4:37 PM
To: Michael Dubois <Michael.Dubois@us.indorama.net>; Leslie Stuart <Leslie.Stuart@us.indorama.net>
Subject: RE: Follow-up records request - NEIC CAA inspection

[External Email]

Hi Mike and Leslie – I forgot, the LDAR database we received seems to only have information for the F5 area. I was expecting to get LDAR data for the ethylene and ethylene oxide processes at a minimum (during the inspection I think someone stated that the LDAR database covered the entire facility). I'd like to get the LDAR database (.bak file) for the ethylene and ethylene oxide process units, including the associated tanks and loading racks.

Thanks,
Cindy

Cindy Schafer, P.E.

Environmental Engineer
U.S. Environmental Protection Agency
National Enforcement Investigations Center
Denver Federal Center, Building 25 | Denver, CO 80225
303-462-9310

From: Schafer, Cynthia
Sent: Tuesday, November 1, 2022 3:14 PM
To: Michael Dubois <Michael.Dubois@us.indorama.net>; Leslie Stuart <Leslie.Stuart@us.indorama.net>
Subject: RE: Follow-up records request - NEIC CAA inspection

Hi Mike and Leslie,

I'm not sure if there was more to your recent message, but below is the message that I received (just says "Dor").

I believe Zel contacted you yesterday with additional flare related requests and questions. You can work with him to provide the requested info or use the GoAnywhere link I sent out during the inspection and I can get the info to him.

I have a few requests to add:

- Records showing how much AD was offloaded onto trucks/sold from January 2018 - October 2022

- Analysis/test results of the AD showing the benzene content
- The underlying analytical data that supports the TAB reports including information about exactly where samples were collected.
 - We have the reported benzene quantities and the flow rates; we are asking for the test results and explanations of where the samples were taken
- In the files titled "YEAR BWON LDAR" there are records of leaks found and repaired that were identified as subject to BWON LDAR requirements. We aren't able to tell what pieces of equipment the leaks were found on. For each leak identified in the 2018-2021 BWON LDAR report, could you provide a narrative description of where each leak was found and what type of BWON waste management unit it is associated with? For example, the first leak in the 2020 BWON LDAR report is at unit OO-A3-W/W-SYS and at A3-2162-002 and is a connector. What type of unit is this? (e.g., vessel 2162 and it is a waste water separator).

Let me know if you have any questions about what we are asking for or if you'd like to discuss any of the requests.

Thanks,
Cindy

Cindy Schafer, P.E.

Environmental Engineer
U.S. Environmental Protection Agency
National Enforcement Investigations Center
Denver Federal Center, Building 25 | Denver, CO 80225
303-462-9310

From: Michael Dubois <Michael.Dubois@us.indorama.net>
Sent: Tuesday, November 1, 2022 2:13 PM
To: Schafer, Cynthia <Schafer.Cynthia@epa.gov>; Leslie Stuart <Leslie.Stuart@us.indorama.net>
Subject: Re: Follow-up records request - NEIC CAA inspection

Dor

From: Schafer, Cynthia <Schafer.Cynthia@epa.gov>
Sent: Friday, October 28, 2022 2:36:46 PM
To: Leslie Stuart <Leslie.Stuart@us.indorama.net>; Michael Dubois <Michael.Dubois@us.indorama.net>
Subject: Follow-up records request - NEIC CAA inspection

[External Email]

Good afternoon Leslie and Mike

The NEIC inspection team has had a chance to start reviewing the records that were submitted by Indorama – Port Neches and would like to request the below records or answers to the below questions. We have requested some of these previously; if they aren't available please state that so we can note that the particular record isn't available and stop asking for it.

- 40 CFR Part 63, YY NOCS [ethylene MACT NOCS]
- Follow-Up Questions: What material is in the AD loading sump that is associated with the AD loading rack/AD washoil sump? – the “AD Loading Sump” tab in the “2020 Calcs.xls” states that this waste stream is not straight aromatic distillate and that it is controlled (a vacuum truck is used to remove material on the filter). How much of the material in the AD loading sump is aromatic distillate and how much is something else? Does the non-aromatic distillate material contain no benzene? Is this waste stream the only waste steam that is generated from the filter?
- 40 CFR Part 63, Subparts F and G NOCS that includes info for EtO tanks and loading racks
- Original HON audit report [the report provided was an update covering the status of corrective actions being taken as a result of the audit]
- Title V reports where HON violations found in audit were disclosed and any other disclosures to EPA of HON violations
- Flare date (excel format – same info/format as previously received) covering October 17-21, 2022
- BWON reports containing quarterly visual and annual Method 21 inspections for the waste management units

Also want to mention that there may be another request early next week for additional records regarding the flares. The team needs more time to go through what we've received before deciding if additional information is needed.

I think the GoAnywhere link should still work, but let me know if you'd like me to send out a new link for any reason.

Thanks,
Cindy

Cindy Schafer, P.E.

Environmental Engineer
U.S. Environmental Protection Agency
National Enforcement Investigations Center
Denver Federal Center, Building 25 | Denver, CO 80225
303-462-9310

From: Schafer, Cynthia

Sent: Wednesday, October 26, 2022 4:50 PM

To: Leslie Stuart <Leslie.Stuart@us.indorama.net>
Cc: Michael Dubois <Michael.Dubois@us.indorama.net>
Subject: RE: Files Uploaded

Hi Leslie – I received the 23 files listed below. I will work with the team to get back to you quickly on any additional records requests.

Thanks,
Cindy

Cindy Schafer, P.E.

Environmental Engineer
U.S. Environmental Protection Agency
National Enforcement Investigations Center
Denver Federal Center, Building 25 | Denver, CO 80225
303-462-9310

From: Leslie Stuart <Leslie.Stuart@us.indorama.net>
Sent: Wednesday, October 26, 2022 4:01 PM
To: Schafer, Cynthia <Schafer.Cynthia@epa.gov>
Cc: Michael Dubois <Michael.Dubois@us.indorama.net>
Subject: RE: Files Uploaded

Cindy,
I just uploaded 23 more files. 12 PDF files and 11 excel spreadsheets. Please let me know if you do not receive them. This should satisfy the records that have been requested. If you see a gap, please let us know. Thank you!

CBI Process Drain Drawings
Jan. 2020 HON
Tar Tank Drain Records
2018 BWON LDAR
2019 BWON LDAR
2020 BWON LDAR
2021 BWON LDAR
Carbon Bed Statement
TRI vs TAB BenzeneWaste Reporting
Continuous Bd Waste Stream Statement
Debutanizer Bottoms Pump Statement
Wastewater stripper compliance statement
BWON Excel Spreadsheets 2018-2021 (11 electronic files)

Leslie Stuart
Senior Environmental Manager
Indorama Ventures Oxides, LLC.
346-380-6544



From: Schafer, Cynthia <Schafer.Cynthia@epa.gov>
Sent: Wednesday, October 26, 2022 9:18 AM
To: Leslie Stuart <Leslie.Stuart@us.indorama.net>
Cc: Michael Dubois <Michael.Dubois@us.indorama.net>
Subject: RE: Files Uploaded

[External Email]

Thank you Leslie – I have received the 4 documents listed below as well as the flare data in Excel.

Thanks,
Cindy

Cindy Schafer, P.E.
Environmental Engineer
U.S. Environmental Protection Agency
National Enforcement Investigations Center
Denver Federal Center, Building 25 | Denver, CO 80225

303-462-9310

From: Leslie Stuart <Leslie.Stuart@us.indorama.net>
Sent: Tuesday, October 25, 2022 7:49 PM
To: Schafer, Cynthia <Schafer.Cynthia@epa.gov>
Cc: Michael Dubois <Michael.Dubois@us.indorama.net>
Subject: Files Uploaded

Cindy,

Earlier this afternoon I uploaded the flare excel file. Just now I uploaded four more files:

AD Tanks Data
October 2022 IFR Inspectons Tanks 87 and 88
Annual Tank Inspection Records
Benzene Waste NESHAP Notificaiton

Please let me know if you do not get these files.

Leslie Stuart
Senior Environmental Manager
Indorama Ventures Oxides, LLC.
346-380-6544



Important: This email and any files transmitted with it are confidential and may be privileged or otherwise protected from disclosure; they are intended solely for the use of the individual or entity to whom they are addressed. If you are not the intended recipient or have received this email or attachment in error, you must not read, copy, store, use, forward or disclose the email or attachment to any other person. Please return the message to the sender and delete it from your system immediately thereafter.



June 30, 2022

VIA Certified Mail

Mr. Craig Pritzlaff
Deputy Director, MC-172
Office of Compliance and Enforcement
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

**Re: Quarterly Update
Disclosure of Violations for Indorama Ventures Oxides LLC, Formerly Indorama Petrochemical LLC,
Indorama International Fuels, LLC, and Indorama Propylene Oxide, Ltd. ("Indorama"), Port Neches
Plant
TCEQ Air Account No. JE-0052-V; RN: 100219252**

Dear Mr. Pritzlaff,

As stated in our September 18, 2020 letter, Indorama Ventures LLC ("Indorama") conducted a compliance audit of its facility located at 2701 Spur 136, Port Neches, Jefferson County, Texas in accordance with the Texas Environmental, Health, and Safety Audit Privilege Act (the "Audit Act").

Advance notice of the audit was given to you by letter dated September 27, 2019. As mentioned in the notice of audit letter, the scope of the audit was to evaluate compliance with environmental regulatory and permit requirements including, 40 CFR 63 Hazardous Organic NESHAP, and Title V Federal Operating Permits O-02286, O-02287, O-01320, O-03056, O-02288. The audit commenced on October 29, 2019 and was completed by December 4, 2019.

This letter is to provide you with the ninth quarterly update of violations and actions completed during the audit to date. Accordingly, Indorama seeks to invoke immunity from civil and administrative penalties provided by Section 10 of the Audit Act.

The remaining open items for the audit were the installation of sample points in unit F6 in the 2nd quarter turnaround to enable POD group determination. After F6 resumed operation the samples were collected on June 30, 2022 with results forthcoming. This concludes the audit and this quarterly update will be the final submitted unless a Group 1 determination is made for these remaining PODs. Please contact me at 409-723-3760 if you have any questions or require further information regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael DuBois", written over a light blue circular background.

Michael DuBois
Environmental Manager
Port Neches Operations

Encl

cc: Texas Commission on Environmental Quality, Region 10 Office, 3870 Eastex Fwy, Beaumont, TX 77703

Indorama Ventures Oxides LLC
2701 Spur 136
PO Box 847
Port Neches, TX 77651 USA
Appendix L
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NEICVP1446E01

Indorama Ventures Oxides LLC
Port Neches, Texas

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COMPLIANCE AUDIT
PORT NECHES FINDINGS TABLE
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Finding Number	Regulation Reference	Finding or Observation	Date Discovered	Date/Length of Existence	Corrective Measures Taken	Status of Corrective Measures 03/30/2021	Work Remaining	Quarterly Update 03/31/2021 Requested Extension Date	Status of Corrective Measures 06/30/2021	Extension Requested 09/30/2021	Status of Corrective Measures 12/21/2021	Status of Corrective Measures 03/30/2022	Status of Corrective Measures 06/30/2022
1	40 CFR 63.10(b), 63.151(j)	Updated HON applicability documentation could not be located for F4, F6 or F5 operating units.	18-Nov-19	Unknown	Indorama will review and update 40 CFR 63, Subparts F and G applicability and/or non-applicability determinations for emissions sources within the F-4, F-6, and F-5 CMPUs to ensure accurate representation of current equipment and operations. Documentation will be developed and/or updated based on this review. The revised NOCS will be submitted as required (Finding 2).	All applicability determinations have been reviewed and updated for F4, F5, F6, with the exception of the following:	Application to update the Title V Permit to incorporate all newly identified and revised determinations for F4, F5, and F6 will be submitted by 4/30/2021	See Items 5, 7, 8.	Complete	NA	NA	NA	NA
					The Title V Operating Permit will be updated as required and as necessary, pending the outcome of this review.	Group Status Determinations for four (4) Wastewater Potential Points of Determination in F4 and F6 that could not be sampled due to safety concerns (See Item 7).	Update of HON determinations in the form of an updated NOCS to be attached to the next HON semiannual reports for the EO and PO/MTBE CMPUs, respectively for F4, F6 and F5 by 4/30/2021.	See Items 5, 7, 8.	Complete	NA	NA	NA	NA
							Update of HON semiannual report template for the EO and PO/MTBE	See Items 5, 7, 8.	Complete	NA	NA	NA	NA

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							CMPUs, respectively, for F4, F6 and F5 to incorporate reporting requirements associated with revised determinations by 4/30/2021.						
							Update of Title V Permit, as necessary pending the testing of the remaining wastewater potential points of determination. See Items 7, 8.	See Items 5, 7, 8.	Complete	NA	NA	NA	NA
							Update of Title V Permit, as necessary, pending the retest of the F4 CO2 Vent. See Item 5.	See Items 5, 7, 8.	Complete	NA	NA	NA	NA
2	40 CFR 63.100, 63.151(j)	Notifications of Compliance Status were not updated to reflect revised applicability for F4, F6, or F5 operating units	18-Nov-19	Unknown	NOCS will be updated, as necessary, based on other action items completed by Indorama. Revised NOCS will be submitted.	See Item 1, above.	See Item 1, above.	See Item 1, above.	Complete	NA	NA	NA	NA
3	40 CFR 63.10(b), 63.151(j)	Detailed applicability documentation could not be located for group status determinations of the F8 operating unit.	18-Nov-19	March 2016 - TBD	Indorama will perform and document detailed 40 CFR 63, Subparts F and G applicability and/or non-applicability determinations for the F8 HON CMPU.	All applicability determinations have been completed for F8, with the exception of the following:	Application to update the Title V Permit to incorporate all newly identified and revised determinations for F8 will be submitted by 4/30/2021.	See Items 5, 7, 8.	Complete	NA	NA	NA	NA

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					The NOCS will be submitted as required (Finding 4).								
					The Title V Operating Permit will be updated as required and as necessary, pending the outcome of this review.	Group Status Determination for one (1) Wastewater Potential Point of Determination in F8 that could not be sampled due to safety concerns (See Item 8)	Incorporation of F8 HON determinations in the form of an updated NOCS to be attached to the next HON semiannual reports for the EO CMPU by 4/30/2021.	See Items 5, 7, 8.	Complete	NA	NA	NA	NA
						Group Status Determination for one (1) Wastewater Potential Point of Determination that could not be sampled due to low water flow (See Item 8).			Complete	NA	NA	NA	NA
							Update of HON semiannual report template for the EO CMPU incorporate reporting requirements associated with F8 determinations. See Items 5, 7, 8.	See Items 5, 7, 8.	Complete	NA	NA	NA	NA
4	40 CFR 63.152(b)	NOCS documentation was not updated and submitted for the F8 operating unit.	18-Nov-19	March 2016 - TBD	The NOCS will be submitted as required.	See Item 2, above.	See Item 2, above.	See Item 2, above.	Complete	NA	NA	NA	NA

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5	40 CFR 63.115	Documentation for CO2 Vents associated with F4, F6, F8 operating units is inconsistent and does not adequately demonstrate Group 2 status as required.	18-Nov-19	Unknown	Indorama will perform new TRE determinations and establish operational limitations for the CO2 Recovery System to ensure compliance, in accordance with the methods and procedures outlined in 40 CFR 63.115 for the CO2 Vents in F4, F6 and F8. The NOCS will be updated/submitted as required (Finding 2, Finding 4).	Engineering assessments have been conducted for F4, F6 and F8, with successful demonstrations of Group 2 Status for F4 CO2 Vent (TRE between 1 and 4) and F6 and F8 CO2 Vents (TRE above 4).	An application will be submitted by 4/30/2021 to update the Title V Operating Permit to reflect the determination that all three (3) of these vents are Group 2 with a TRE > 4.0. In the event that the Method 18 retest shows other results, Indorama will update the Title V accordingly.	F4 CO2 Vent engineering retest report to properly document TRE > 4.0: 6/30/2021 to allow for return of test results.	Complete – no updates required.	NA	NA	NA	NA
					The Title V Operating Permit will also be updated as required and as necessary, pending the outcome of this review.	The engineering assessment of the F4 CO2 Vent is believed to be inappropriately biased high due to performance issues with the testing contractor and data collected. Method 18 results were sampled, but not received for F4, therefore the only data available from testing was FTIR based data. The FTIR data is biased high due to cross-interferences between stream constituents as demonstrated by Method 18 results on other trains. As	For F4, the Method 18 retest is scheduled to be completed in April 2021 to properly document the TRE as required by 40 CFR 63.115.	Title V Update (if necessary pending F4 Retest): 6/30/2021	Complete – no updates required.	NA	NA	NA	NA

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						such, Indorama is retesting the F4 CO2 Vent using Method 18 with a new testing contractor to properly document the TRE as above 4.							
							In the event that the retest does not show a TRE > 4.0, Indorama will update the Title V accordingly.	NOCS Update: (if necessary pending F4 Retest) 6/30/2021	Complete – no updates required.	NA	NA	NA	NA
6	40 CFR 71, NSR Permit 5972A, 5952A, 10169	Permitted maximum emissions rates for CO2 vents and wastewater fugitives are higher than actual emissions and do not align with existing HON applicability determination s.	18-Nov-19	Unknown	Pending the outcome of Finding 5, Indorama will review permitted emission rates and the NSR Permit for F-4, F-6 and F-8 to ensure maximum emission rates align with the proper Group Status for the CO2 Vents and wastewater fugitive emissions in each unit, as needed.	As discussed in Finding 5, above, performance test issues with the testing contractor and data collected have provided test results that are believed to be biased high. As such, retesting of all three (3) vents is scheduled in April 2021 utilizing 40 CFR 60, Appendix A - Method 25A. Port access to enable compliant Method 4 flows has been resolved. For wastewater fugitive emissions, no updates to the NSR are necessary at this time.	Pending the retest of the CO2 Vents utilizing Method 25A, the NSR permit will be updated, as necessary.	NSR Update, as necessary: 6/30/2021.	Complete - all units in compliance with NSR permit limits. F8 permit amendment application submitted to modify representation to more accurately reflect emissions characterization 6/30/2021.	NA	NA	NA	NA

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7	40 CFR 63.132(a)(1)/ (c), 63.144(b)/(c)	Detailed applicability documentation could not be located for several HON wastewater Points of Determination (PODs).	18-Nov-19	Unknown	Indorama will perform a review of F-4, F-6, F-8, and F-5 CMPUs to identify and properly document all applicability and non-applicability determinations to ensure all potential HON wastewater points of determination (PODs) are addressed. This effort will include the development and implementation of a HON Wastewater Sampling Plan to properly perform applicability and group status determinations for all wastewater potential PODs.	Wastewater Potential Points of Determination (PODs) have been reviewed and updated for F4, F5, F6 and F8.	A Title V application will be submitted by 4/30/2021 to update the Group Status Determinations for all completed determinations in F4, F5, F6 and F8.	Sampling of one (1) potential POD in F8 that could not be sampled due to lack of water and finalization of Group Status Determination: 6/30/2021.	Complete- Title V application submitted 04/30/21. Sufficient water for F8 potential POD was determined present on June 30, 2021 to safely sample and the sampling contractor has been scheduled.	12/31/21 for sampling, Group Status Determination, and Title V update if necessary. The low water F8 POD was inadvertently drained by Operations prior to sampling.	F4 and the low water F8 POD sampling are complete. Group 2 status was confirmed. F6 and remaining F8 PODs on track for Q1/Q2 2022 turnaround sample port installation, collection, analysis, and updates.	Operational conditions allowed for the early installation of the F8 and (two) F6 POD sample points. Sampling has been completed for these; however, sample results have not been received to make a Group determination yet. Remaining F6 PODs on track for Q2 2022 turnaround sample part installation and collection.	The F8 and two F6 PODs were designated as Group 2 based on the sample results. The remaining F6 sample points were installed during the 2 nd quarter turnaround. The POD determination samples were obtained on 6/30/2022. Results are forthcoming.
					The NOCS for the F-4, F-6 and F-5 HON CMPUs will be updated and resubmitted and the NOCS for the F-8 HON CMPU will be submitted (See Findings 2 and 4) as required and as necessary, pending the outcome of this review.	Wastewater PODs and Group Status Determinations have been reviewed and updated for F5, with all HAP containing PODs routed to the Wastewater Stripper System, the Process Liquid Fuels (PLF) system, and managed offsite as a RCRA Hazardous Waste being designated and managed as Group 1	NOCS update must be submitted (see Items 1, 3, above) by 4/30/2021.	Six (6) potential POD Sample Port Installations: Indorama will install sampling ports no later than the next multi-day outage, with sampling within one calendar quarter of returning equipment to service after the outage. Currently, the next scheduled outage is 4th quarter 2021 for F4 and 1 st /2 nd quarter 2022 for F6/F8. Note: Previous updates inadvertently stated the sample port installation	Complete- NOCS submitted 04/30/2021. Sample port installation per outage schedule. Note: The outage dates for F4 (1 st qtr 2022) and F8 (1 st /2 nd qtr 2023) were inadvertently switched in prior quarterly updates.	Process unit outage required: Revised schedule - 4 th qtr 2021 for F4 (unplanned) and 1 st /2 nd qtr 2022 for F6/F8 for sample port installation, collection, analysis, and updates. Update:	F4 and the low water F8 POD sampling are complete. Group 2 status was confirmed. F6 and remaining F8 PODs on track for Q1/Q2 2022 turnaround sample port installation, collection, analysis, and updates.	Operational conditions allowed for the early installation of the F8 and (two) F6 POD sample points. Sampling has been completed for these; however, sample results have not been received to make a Group determination yet.	The F8 and two F6 PODs were designated as Group 2 based on the sample results. The remaining F6 sample points were installed during the 2 nd quarter

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						Process Wastewaters.		count was five rather than six.		The low water F8 POD was inadvertently drained by Operations prior to sampling. Operational conditions allowed for the early installation of the F4 POD sample point. Sampling arrangements are being made and expected to be complete for both PODs by 12/31/21.		Remaining F6 PODs on track for Q2 2022 turnaround sample part installation and collection.	turnaround. The POD determination samples were obtained on 6/30/2022. Results are forthcoming.
					The Title V Operating Permit will be updated as required and as necessary, pending the outcome of this review.	The HON Wastewater Sampling Plan was implemented in October/November 2020 for all potential PODs in F4, F6 and F8, with the exception of five (5) potential PODs that could not be sampled due to safety concerns (pressure), and one (1) potential POD that could not be sampled in F8 due to a lack of liquids	Sampling of one (1) potential POD in F8 that could not be sampled due to a lack of liquids.	Group Status Determinations, and Title V Update for remaining potential PODs (as necessary pending determinations): One (1) calendar quarter after sample port installation. Note: Previous updates inadvertently stated the sample port installation count was five rather than six.	Sample port installation per outage schedule. Note: The outage dates for F4 (1 st qtr 2022) and F8 (1 st /2 nd qtr 2023) were inadvertently switched in prior quarterly updates. Sufficient water for F8 potential POD was determined present on June 30, 2021 to safely sample and the	Process unit outage required: Revised schedule - 4 th qtr 2021 for F4 (unplanned) and 1 st /2 nd qtr 2022 for F6/F8 for sample port installation, collection, analysis, and updates. Update: The low water F8 POD was inadvertently drained by Operations prior to sampling. Operational conditions allowed for the early installation of the F4 POD sample	F4 and the low water F8 POD sampling are complete. Group 2 status was confirmed. F6 and remaining F8 PODs on track for Q1/Q2 2022 turnaround sample port installation, collection, analysis, and updates.	Operational conditions allowed for the early installation of the F8 and (two) F6 POD sample points. Sampling has been completed for these; however, sample results have not been received to make a Group determination yet. Remaining F6 PODs on track for Q2 2022 turnaround sample part installation and collection.	The F8 and two F6 PODs were designated as Group 2 based on the sample results. The remaining F6 sample points were installed during the 2 nd quarter turnaround. The POD determination samples were obtained on 6/30/2022. Results are forthcoming.

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									sampling contractor has been scheduled.	point. Sampling arrangements are being made and expected to be complete for both PODs by 12/31/21.			
						For the potential PODs sampled in F4, F6 and F8 – wastewater analytical results indicate Group 2 Status at this time.	Six (6) potential PODs associated with F4, F6 and F8 were not able to be sampled to determine Group Status for Process Wastewaters due to safety concerns (pressure). To safely sample these points, the equipment must be taken out of service and depressurized to allow for sampling port installation during the next scheduled outage. These potential PODs will then be sampled, with group status determinations finalized.	NOCs and Title V Update for remaining potential PODs (as necessary pending determinations): To be submitted with the next HON Semiannual Compliance Report following finalization of Group Status Determinations.	Pending sample port installation. Note: Previous updates inadvertently stated the sample port installation count was five rather than six. Sufficient water for F8 potential POD was determined present on June 30, 2021 to safely sample and the sampling contractor has been scheduled.	Process unit outage required: Revised schedule - 4 th qtr 2021 for F4 (unplanned) and 1 st /2 nd qtr 2022 for F6/F8 for sample port installation, collection, analysis, and updates. Update: The low water F8 POD was inadvertently drained by Operations prior to sampling. Operational conditions allowed for the early installation of the F4 POD sample point. Sampling arrangements are being made and expected to be complete for both PODs by 12/31/21.	F4 and the low water F8 POD sampling are complete. Group 2 status was confirmed. F6 and remaining F8 PODs on track for Q1/Q2 2022 turnaround sample port installation, collection, analysis, and updates.	Operational conditions allowed for the early installation of the F8 and (two) F6 POD sample points. Sampling has been completed for these; however, sample results have not been received to make a Group determination yet. Remaining F6 PODs on track for Q2 2022 turnaround sample part installation and collection.	The F8 and two F6 PODs were designated as Group 2 based on the sample results. The remaining F6 sample points were installed during the 2 nd quarter turnaround. The POD determination samples were obtained on 6/30/2022. Results are forthcoming.
8	40 CFR 63.132(a)(2)(i)	Potential failure to identify all HON waste	18-Nov-19	Unknown	Indorama will conduct a review to ensure all waste management units	Waste Management Units (WMUs) have been updated for F4, F5, F6 and F8 for	An application will be submitted by 4/30/2021 to update the Title V	Identification of WMUs managing any Group 1 process wastewaters identified from the	Complete - Title V Updates for F4 and F6 submitted 04/30/21. Title V	Process unit outage required:	F4 and the low water F8 POD sampling are complete. Group	Operational conditions allowed for the early installation	The F8 and two F6 PODs were designated as Group 2 based on

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		management units managing HON Group 1 Wastewater Streams.			managing HON Group 1 Wastewater Streams are identified and operating in compliance with the applicable requirements of 40 CFR 63.133 – 63.137.	all completed determinations.	Permit for to reflect all revised and newly identified WMU determinations.	remaining potential PODs in Item 8, above and Title V Update (as necessary pending determinations): One (1) calendar quarter after sampling, see Item 8, above.	updates for F5 submitted 06/30/2021 Complete - NOCS for F4, F5, F6, F8 submitted 04/30/21. Sample port installation required for remaining PODs.	Revised schedule - 4 th qtr 2021 for F4 (unplanned) and 1 st /2 nd qtr 2022 for F6/F8 for sample port installation, collection, analysis, and updates. Update: The low water F8 POD was inadvertently drained by Operations prior to sampling. Operational conditions allowed for the early installation of the F4 POD sample point. Sampling arrangements are being made and expected to be complete for both PODs by 12/31/21.	2 status was confirmed. F6 and remaining F8 PODs on track for Q1/Q2 2022 turnaround sample port installation, collection, analysis, and updates.	of the F8 and (two) F6 POD sample points. Sampling has been completed for these; however, sample results have not been received to make a Group determination yet. Remaining F6 PODs on track for Q2 2022 turnaround sample part installation and collection.	the sample results. The remaining F6 sample points were installed during the 2 nd quarter turnaround. The POD determination samples were obtained on 6/30/2022. Results are forthcoming.
					The NOCS will be updated and resubmitted (See Finding 2) as required and as necessary, pending the outcome of this review.		For updated WMUs in F5 and F4, F6, F8 (as warranted pending receipt of wastewater sampling results) NOCS update will be submitted by 4/30/2021. (see Items 1, 3, above).	NOCS Update for remaining potential PODs (as necessary pending determinations): To be submitted with the next HON Semiannual Compliance Report following finalization of Group Status Determinations, See Item 7, above.	Note: Previous updates inadvertently stated the sample port installation count was five rather than six.				
					The Title V Operating Permit will also be updated as required and as necessary.		Upon completion of group status determinations for remaining potential PODs in Item 8, above, WMUs will be identified, as necessary, if any Group 1 Process Wastewaters are identified and an application will be submitted to update the Title V Permit.						
9	40 CFR 63.143(a)	Table 11 semiannual inspections for HON waste management units may require	18-Nov-19	Unknown	If deemed necessary, Indorama will modify its existing program of conducting and documenting inspections in accordance with the	Waste management unit (WMU) inspections were not occurring in F5. WMU inspection procedure has been developed and inspection template has been developed	Upon completion of group status determinations for remaining potential PODs in Item 8, above, WMUs will be identified, as necessary, if any Group 1 Process	Update of F4, F6, F8 WMU Inspection Template, NOCS and Title V Permit, as necessary pending determinations for remaining potential PODs in Item 8, above: One (1) calendar quarter after	Inspection template updates complete. Further Inspection Template, NOCS, and Title V Permit modification	Process unit outage required: Revised schedule - 4 th qtr 2021 for F4 (unplanned) and	F4 and the low water F8 POD sampling are complete. Group 2 status was confirmed. F6 and remaining F8 PODs on track	Operational conditions allowed for the early installation of the F8 and (two) F6 POD sample points. Sampling has been completed	The F8 and two F6 PODs were designated as Group 2 based on the sample results.

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		documentatio n updates.			requirements outlined in Table 11 of 40 CFR 63, Subpart G.	and finalized for F5, with first round of inspections utilizing new template completed in 4 th quarter 2020. As a part of the final project quality control review, modifications were made to the initial inspection template that added additional inspection points and these additional points were inspected in 1 st quarter 2021.	Wastewaters are identified.	sample port installation in Item 7, above.	pending remaining outage dependent POD determinations as needed. Sample port installation required for remaining PODs. Note: Previous updates inadvertently stated the sample port installation count was five rather than six.	1 st /2 nd qtr 2022 for F6/F8 for sample port installation, collection, analysis, and updates. Update: The low water F8 POD was inadvertently drained by Operations prior to sampling. Operational conditions allowed for the early installation of the F4 POD sample point. Sampling arrangements are being made and expected to be complete for both PODs by 12/31/21.	for Q1/Q2 2022 turnaround sample port installation, collection, analysis, and updates.	for these; however, sample results have not been received to make a Group determination yet. Remaining F6 PODs on track for Q2 2022 turnaround sample part installation and collection.	The remaining F6 sample points were installed during the 2 nd quarter turnaround. The POD determination samples were obtained on 6/30/2022. Results are forthcoming.
10	40 CFR 63.148(i)	Annual visual inspections for HON closed vent systems may require documentatio n updates.	18-Nov-19	Unknown	If deemed necessary, Indorama will modify its existing program of conducting and documenting inspections of HON CVS systems.	All HON CVS have been inspected, as required for F4, F5, F6 and F8. All HON Bypass Valves have been identified and secured with appropriate	None currently. If additional waste management units are identified in Item 9, above, for the remaining	Update of F4, F6, F8 CVS and Bypass Valve inspection and recordkeeping programs as necessary pending determinations for remaining potential PODs in Item 8, above: One (1) calendar quarter after	Complete with the exception of outage dependent sample port installation previously identified.	Process unit outage required: Revised schedule - 4 th qtr 2021 for F4 (unplanned) and	F4 and the low water F8 POD sampling are complete. Group 2 status was confirmed. F6 and remaining F8 PODs on track for Q1/Q2 2022	Operational conditions allowed for the early installation of the F8 and (two) F6 POD sample points. Sampling has been completed	The F8 and two F6 PODs were designated as Group 2 based on the sample results.

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						inspections and records being maintained to document and identify diversions, as required. Manual bypass valves have been secured in the field using either a lock-and-key or car-seal configuration with monthly inspections conducted. For valves with position available in the DCS, records of valve position are being maintained to identify diversions.	potential PODs to be sampled, the CVS and Bypass Valve inspection and recordkeeping programs will be reviewed and updated as necessary.	sample port installation in Item 7, above.	Sample port installation required for remaining PODs. Note: Previous updates inadvertently stated the sample port installation count was five rather than six.	1 st /2 nd qtr 2022 for F6/F8 for sample port installation, collection, analysis, and updates. Update: The low water F8 POD was inadvertently drained by Operations prior to sampling. Operational conditions allowed for the early installation of the F4 POD sample point. Sampling arrangements are being made and expected to be complete for both PODs by 12/31/21.	turnaround sample port installation, collection, analysis, and updates.	for these; however, sample results have not been received to make a Group determination yet. Remaining F6 PODs on track for Q2 2022 turnaround sample part installation and collection.	The remaining F6 sample points were installed during the 2 nd quarter turnaround. The POD determination samples were obtained on 6/30/2022. Results are forthcoming.
11	40 CFR 63.110(d)	An incorrect application of overlap for process vents may exist between 40 CFR 60, NSPS NNN/RRR and 40 CFR 63 Subparts F and G.	18-Nov-19	Unknown	Review NSPS NNN/RRR applicability determinations for F-4, F-5, F-6, and F-8	NSPS NNN/RRR applicability determinations completed.	Title V application will be submitted by 4/30/2021 to properly reflect revised determinations and to properly apply overlap provisions.	None.	Complete	NA	NA	NA	NA
					Implement NSPS requirements for any NSPS NNN/RRR vents requiring control and routed to fuel gas systems, if necessary.	NSPS requirements (CVS inspections and bypass valve monitoring) for fuel gas systems and process vents completed.							
					Amend Title V Operating Permit as necessary to incorporate NSPS NNN/RRR applicability and								

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					correctly apply NSPS/HON overlap for affected vents.								
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805 Las Cimas Pkwy
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Ethylene MACT Notification of Compliance Status Report

Huntsman Petrochemical Corporation

*A3 Olefins Unit
Port Neches, Texas*

March 2006

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Section 1

General Information

Huntsman Petrochemical Corporation (Huntsman) operates an ethylene manufacturing facility in Port Neches, Jefferson County, Texas. The facility is referred to as the A3 Olefins Unit and it is subject to requirements in the Ethylene MACT. The Ethylene MACT rule was promulgated as part of the Generic MACT (40 CFR 63, Subpart YY) and applies to chemical manufacturing process units in which ethylene and/or propylene are produced. A notification of compliance status report is required per §63.1110(d).

40 CFR 63.1110(d): Notification of Compliance Status

- (1) *Contents. The owner or operator shall submit a Notification of Compliance Status for each affected source subject to this subpart containing the information specified in paragraphs (d)(1)(i) and (d)(1)(ii) of this section.*

- (i) *The Notification of Compliance Status shall include the information specified in this subpart and the subparts referenced by this subpart. Alternatively, this information can be submitted as part of a title V permit application or amendment.*

All required information is included in this Notification of Compliance Status Report. Huntsman is not electing to submit this report as a part of the Title V permit application or amendment as an alternative to meet this requirement.

- (ii) *The Notification of Compliance Status shall include a statement from the owner or operator identifying which subpart he or she has elected to comply with, where given a choice, as provided for in §63.1100(g).*

Huntsman is in compliance with the requirements of 40 CFR 63 Subpart YY. All overlap in regulations applicable to Huntsman require compliance with 40 CFR 63 Subpart YY.

- (2) *Due date. The owner or operator shall submit the Notification of Compliance Status for each affected source 240 days after the compliance date specified for the affected source under this subpart, or 60 days after completion of the initial performance test or initial compliance assessment, whichever is earlier. Notification of Compliance Status reports may be combined for multiple affected sources as long as the due date requirements for all sources covered in the combined report are met.*

The compliance date specified in §63.1102 for ethylene production is July 12, 2005. Therefore; the Notification of Compliance Status Report is due 240 days after July 12, 2005 or March 9, 2006.

40 CFR 63.1110(f): General report content

All reports and notifications submitted pursuant to this subpart, including reports that combine information required under this subpart and a subpart referenced by this subpart, shall include the information specified in paragraphs (f)(1) through (4) of this section.

- (1) *The name, address and telephone number (fax number may also be provided) of the owner or operator.***

Owner/Operator: Huntsman Petrochemical Corporation
Physical Address: 6001 Highway 366, Port Neches, Texas 77651
Phone Number: 409-724-4460

- (2) *The name, address and telephone number of the person to whom inquiries should be addressed, if different than the owner or operator.***

David Gorsich, Environmental Unit Representative
Huntsman Petrochemical Corporation
P.O. Box 847
Port Neches, Texas 77651
409-724-4469

- (3) *The address (physical location) of the reporting facility.***

6001 Highway 366
Port Neches, Texas 77651

- (4) *Identification of each affected source covered in the submission and identification of the subparts (this subpart and the subparts referenced in this subpart) that are applicable to that affected source. Summaries and groupings of this information are permitted.***

Table 1
Summary of Affected Sources

Affected Source Group	Applicable Subparts
Storage Vessels	40 CFR 63 Subpart YY 40 CFR 63 Subpart WW 40 CFR 63 Subpart SS
Heat Exchange System	40 CFR 63 Subpart YY 40 CFR 63 Subpart XX
Equipment	40 CFR 63 Subpart YY 40 CFR 63 Subpart UU
Waste	40 CFR 63 Subpart YY 40 CFR 63 Subpart XX 40 CFR 61 Subpart FF

Section 2

Specific Information by Source Type

According to §63.1103(e)(1), the Ethylene MACT regulates hazardous air pollutant (HAP) emissions from:

- Storage vessels that store liquids containing organic HAPs,
- Ethylene process vents from continuous unit operations,
- Transfer racks that load HAP-containing material,
- Leaks from equipment (as defined under §63.1101) that contains organic HAPs,
- Waste streams associated with the ethylene production unit,
- Heat exchange systems associated with an ethylene production unit, and
- Ethylene cracking furnaces and associated decoking operations

Heat exchange system and waste requirements for ethylene production sources are found in 40 CFR 63, Subpart XX. Definitions found in §63.1101 of Subpart YY do not apply to ethylene process unit waste. Control requirements for affected sources are found in Table 7 of §63.1103(e), and a detailed compliance status for each affected source is provided below.

2.1 Storage Vessels

Table 2 identifies storage vessels subject to Subpart YY along with the specified control requirement.

Table 2
Storage Vessels

Tank ID	Material Stored	§63.1103(e) Table 7 Control Requirement
T-A3-29	Wash Oil	N/A – Organic HAP true vapor pressure < 3.4 kPa (0.5 psia)
T-A3-46	Tar	N/A – Organic HAP true vapor pressure < 3.4 kPa (0.5 psia)
T-O-43	Wash Oil	N/A – Organic HAP true vapor pressure < 3.4 kPa (0.5 psia)
T-A3-39	Methanol	Submerged Fill Pipe
T-O-126	Aromatic Distillate	Carbon Adsorber complying with 40 CFR 63 Subpart SS.
T-O-127	Aromatic Distillate	Flare complying with 40 CFR 63 Subpart SS.
T-O-87	Aromatic Distillate	Internal floating roof complying with 40 CFR 63 Subpart WW.
T-O-88	Aromatic Distillate	Internal floating roof complying with 40 CFR 63 Subpart WW.

Tanks T-O-126, 127, 87 and 88 can also store wastewater. Requirements associated with these waste streams are identified in Section 2.5 (waste streams). Tanks with submerged fill pipes, internal floating roofs, or without control requirements are not required to submit a notification of compliance status. A notification of compliance status is only required for tanks subject to Subpart SS which only affects Tanks T-O-126 and T-O-127.

Tank T-O-126 Subpart SS NCS requirements

§63.999(b)(2) - Routing storage vessel or low throughput transfer rack emissions to a nonflare control device. An owner or operator who elects to comply with §63.982 by routing emissions from a storage vessel or low throughput transfer rack to a nonflare control device, as specified in §63.985, shall submit, with the Notification of Compliance Status required by a referencing subpart, the applicable information specified in paragraphs (b)(2)(i) through (vi) of this section. Owners and operators who elect to comply with §63.985(b)(1)(i) by submitting a design evaluation shall submit the information specified in paragraphs (b)(2)(i) through (iv) of this section. Owners and operators who elect to comply with §63.985(b)(1)(ii) by submitting performance test results from a control device for a storage vessel or low throughput transfer rack shall submit the information specified in paragraphs (b)(2)(i), (ii), (iv), and (v) of this section. Owners and operators who elect to comply with §63.985(b)(1)(ii) by submitting performance test results from a shared control device shall submit the information specified in paragraph (b)(2)(vi) of this section.

Huntsman elects to comply with §63.985(b)(1)(i) by submitting a design evaluation. The design evaluation for the carbon adsorption system associated with tank T-O-126 is included in appendix A of this report.

§63.999(b)(2)(i) -A description of the parameter or parameters to be monitored to ensure that the control device is being properly operated and maintained, an explanation of the criteria used for selection of that parameter (or parameters), and the frequency with which monitoring will be performed (e.g., when the liquid level in the storage vessel is being raised). If continuous records are specified, indicate whether the provisions of §63.999(c)(6) apply.

As required by the A3 Olefins Unit Federal Operating Permit Number O2288, the control device exhaust stream will be monitored daily to determine VOC breakthrough. Breakthrough occurs when the VOC concentration in the exhaust stream measures 100 ppmv or more. Provisions of §63.999(c)(6) are not applicable to storage vessels and continuous records are not specified. Monitoring records are maintained at the plant site.

§63.999(b)(2)(ii) -The operating range for each monitoring parameter identified in the monitoring plan required by §63.985(c)(1). The specified operating range shall represent the conditions for which the control device is being properly operated and maintained.

The operating range for the carbon adsorption system shall be during exhaust stream VOC concentrations of less than 100 ppmv.

§63.999(b)(2)(iii) -The documentation specified in §63.985(b)(1)(i), if the owner or operator elects to prepare a design evaluation.

The design evaluation for this carbon adsorption system is included as Appendix A of this report.

§63.999(b)(2)(iv) -The provisions of paragraph (c)(6) of this section do not apply to any low throughput transfer rack for which the owner or operator has elected to comply with §63.985 or to any storage vessel for which the owner or operator is not required, by the applicable monitoring plan established under §63.985(c)(1), to keep continuous records. If continuous records are required, the owner or operator shall specify in the monitoring plan whether the provisions of paragraph (c)(6) of this section apply.

Continuous records are not required and §63.999(c)(6) is not applicable to storage vessels. The Federal Operating Permit Number O2288 Periodic Monitoring Summary for the carbon adsorber associated with Tank T-O-126 is included in Appendix B and will suffice as the monitoring plan required by §63.985(c)(1).

Tank T-O-127 Subpart SS NCS requirements

Tank T-O-127 will not be operational until later this year. Once this tank is operational, a flare compliance assessment will be performed and the report will be submitted within 60 days of completing the assessment as required by §63.999(a)(1)(ii).

2.2 Process Vents

The A3 Olefins Unit does not contain any continuously discharged process vents.

2.3 Transfer Racks

There are no transfer racks associated with the A3 Olefins Unit. All products are piped to other production units or to off-site facilities.

2.4 Equipment

As required by Table 7 of §63.1103(e), equipment must comply with requirements in 40 CFR 63 Subpart UU. Subpart UU only requires an initial notification of compliance status which was submitted on July 9, 2003.

2.5 Waste Streams

Waste streams must comply with requirements in 40 CFR 63 Subpart XX as identified in Table 7 of §63.1103(e). Table 2 of Subpart XX requires that information in 40 CFR 61.357(d)(1) and (2) be submitted as part of the notification of compliance status required by §63.1110(d).

§61.357(d)(As revised by 40 CFR 63 Subpart XX) - If the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr), then the owner or operator shall submit to the Administrator the following reports: Submit the information in 40 CFR 61.357(d)(1) & (d)(2) as part of the Notification of Compliance Status required in 40 CFR 63.1110(d):

§61.357(d)(1)(As revised by 40 CFR 63 Subpart XX): Submit as part of the Notification of Compliance Status required in 40 CFR 63.1110(d), or by the date of initial startup for a new source with an initial startup after the effective date, a certification that the equipment necessary to comply with these standards has been installed and that the required initial inspections or tests have been carried out in accordance with this subpart.

A compliance certification is provided in Appendix C.

§61.357(d)(2) - Beginning on the date that the equipment necessary to comply with these standards has been certified in accordance with paragraph (d)(1) of this section, the owner or operator shall submit annually to the Administrator a report that updates the information listed in paragraphs (a)(1) through (a)(3) of this section. If the information in the annual report required by paragraphs (a)(1) through (a)(3) of this section is not changed in the following year, the owner or operator may submit a statement to that effect.

The annual TAB report required by §61.357(d)(2) that was submitted to the Texas Commission on Environmental Quality (TCEQ) on April 7, 2005, is also provided in Appendix C.

2.6 Heat Exchange Systems

A notification of compliance status is not required for heat exchange systems. Two heat exchange systems are operated at the A3 Olefins Unit. One system only includes exchanger E-A3-205 from the A3 Olefins Unit and routes water to cooling tower CT-1. A delta pressure indicator monitors to ensure the pressure differential is greater than 5 psig. Heat Exchanger E-A3-205 and CT-1 are exempt per §63.1084(a).

All other exchangers at the A3 Olefins Unit send water to cooling tower CT-4. Samples are taken at two inlets and the exit of the cooling tower (East, West, and Supply). The concentration of the monitored cooling substance in the heat exchange system is required to be monitored by any method listed in 40 CFR Part 136. However, Part 136 does not have a monitoring method for all chemicals sampled. Alternative monitoring is allowed if approved by the administrator per §63.1086(a)(3). Huntsman submitted a request for alternative monitoring on August 12, 2005 and a copy of the request is included in Appendix D.

Furthermore, Texas NSR Permit Number 19823 as referenced by Federal Operating Permit Number O2288 requires that the cooling tower return line be monitored using a leak detection limit of 0.05 ppmw VOC which corresponds to an emission rate of 0.43 kg/hr based on the maximum cooling tower recirculation rate. This leak definition satisfies the requirement and is much more conservative than the 3.06 kg/hr limit specified by §63.1086(a)(1).

2.7 Ethylene Cracking Furnaces / Associated Decoking Operations

There are no control requirements or notification of compliance status requirements identified for ethylene cracking furnaces and associated decoking operations.

Appendix A

T-O-126 Carbon Adsorber

Design Evaluation

HUNTSMAN PETROCHEMICAL CORPORATION
PORT NECHES, TX
T-O-126 CAS
40 CFR 63 Subpart SS Design Evaluation

I. Gas Stream Description

Displaced vapor as a result of loading aromatic distillate (AD) into Tank T-O-126 is routed to a carbon adsorption system (CAS) before venting to the atmosphere. The CAS consists of two carbon beds in series and the first bed is monitored for breakthrough. Breakthrough occurs when a VOC concentration of 100 ppmv is measured. Once the breakthrough concentration is measured, the carbon bed is replaced within 4 hours of detection.

Number of Carbon Beds: 2
Amount of Carbon per Bed: 2,000 lb
Breakthrough Concentration : 100 ppmv
Vessel Fill Rate: 24,000 gph = 3,209 scf/hr
Vent stream Temp = 120 °F

II. Vapor Pollutant Concentrations

Pollutant	mw	wt%
1,3-Butadiene	54	1.38%
1-Butene	56	0.59%
1-Pentene	70	1.58%
2-Butanone	72	0.08%
2-Methylbutene-1	70	1.58%
2-Methylbutene-2	70	1.58%
2-Methylnaphthalene	142	2.37%
3-Methylbutene-1	70	7.90%
Acenaphthene	154	0.08%
Acenaphthylene	152	0.08%
Acetylene	26	0.00%
Anthracene	178	0.08%
Benzene	78	47.42%
Cis-1,3-Pentadiene	68	0.79%
Cis-2-Butene	56	0.59%
Cis-2-Pentene	70	1.58%
Ethane	30	0.00%
Ethylbenzene	106	3.95%
Ethylene	28	0.00%
Fluoranthene	202	0.08%
Fluorene	166	0.08%
IC4	58	0.08%
Isobutylene	56	0.24%
Isopentane	72	1.19%
Isoprene	68	3.95%
Methylene Chloride	85	0.08%
Naphthalene	128	1.58%
NC4	58	0.59%
N-Pentane	72	1.19%
N-Propylbenzene	120	0.08%
Phenanthrene	178	0.08%
Phenol	94	0.08%
Propane	44	0.08%
Propylene	42	0.08%
Pyrene	202	0.08%
Styrene	104	3.95%
Sulfur Compounds	34	0.04%
Toluene	92	7.90%
Trans-1,3-Pentadiene	68	0.79%
Trans-2-Butene	56	0.59%
Trans-Pentene-2	70	1.58%
Vinylacetylene	52	0.01%
Xylenes	106	3.95%
Total Vent Stream	79.3	100.0%

II. Emissions at CAS Breakthrough

Maximum emissions from the CAS are based on the maximum tank fill rate and breakthrough concentration.

3,209	cf	100	lbmol VOC	79.3	lb VOC	1	lb-mole	=	0.060	lb/hr
	hr	#####	lbmol gas		lb-mole	423	cf			

III. Emissions entering CAS from Tank

Maximum hourly tank emissions result from working losses. The working loss equation for tanks can be found AP-42 Section 7.1.

$$Lw = 0.001MvPvaQ$$

Lw = Working loss, lb/hr

Mv = vapor molecular weight = 79.3

Pva = Vapor pressure, psia = 10

Q = hourly pump rate, bbl/hr = 571

Kn and Kp are assumed to equal 1.

Lw = 453.21 lb/hr

IV. CAS Control Efficiency

$$\% \text{ control} = (453.21 - 0.06) \text{ lb/hr} / (453.21) \text{ lb/hr} \times 100\% = 99.99\%$$

Appendix B

T-O-126 Carbon Adsorber Monitoring Plan

Periodic Monitoring Summary

UNIT/GROUP/PROCESS INFORMATION	
ID No.: RSET0126	Applicable Form: OP-UA03
APPLICABLE REGULATORY REQUIREMENT	
Name: 30 TAC Chapter 115, Storage of VOCs	SOP Index No.: R5112-055
Pollutant: VOC	Main Standard: § 115.112(a)(1)
MONITORING INFORMATION	
Indicator: VOC concentration	
Minimum Frequency: Daily or 20% of design carbon replacement interval	
Averaging Period: N/A	
Deviation Limit: Canister not replaced within 4 hours of breakthrough	
Periodic Monitoring Text: The carbon adsorption system (CAS) shall be sampled and recorded either daily or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is the greater interval, to determine breakthrough of VOC. Measure and record the VOC concentration using a photo-ionization detector (PID) or TCEQ-approved equivalent to monitor VOC concentration at the outlet of the initial canister but before the inlet to the final canister of the CAS. On each day that sampling is required, the PID shall be calibrated prior to sampling with a certified gas mixture at 0 parts per million by volume (ppmv) + 10 percent and at 500 ppmv + 10 percent. Records of the CAS monitoring maintained at the plant site shall include, but will not be limited to, sample time and date, monitoring results (ppmv), and corrective action taken including the time and date of that action. Breakthrough shall be defined as a measured VOC concentration of 100 ppmv. When the condition of the breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister or a standby series of canisters immediately. Within four hours of detection of breakthrough, a fresh canister shall be placed as the new final polishing canister. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frames. If the canister is not replaced within 4 hours and the event not recorded, it shall be considered and reported as a deviation.	

Appendix C

Waste Stream Documentation

Waste Stream Compliance Certification

Based on information and belief formed after a reasonable inquiry, I, as a responsible official of Huntsman Petrochemical Corporation, certify the information identified below is accurate and true to the best of my knowledge.

The A3 Olefins Unit has:

1. 1. Installed the equipment for waste streams necessary to comply with 40 CFR 63 Subpart YY and the Subparts referenced by YY.
2. 2. Conducted the required initial inspections or tests for the wastes streams and associated required equipment in accordance with 40 CFR 63 Subpart XX and YY.

Name and Title of the Owner/Operator: _____

Signature of Owner/Operator: _____ Date: _____

BENZENE WASTE STREAM REVIEW

This review meets the reporting requirements of the Environmental Protection Agency's Chapter 40 Code of Federal Regulations (CFR) Part 61, Subpart FF, §61.357 and summarizes the status of each waste stream in benzene operation. The Huntsman Petrochemical Corporation (Huntsman) C-4 and Oxides and Olefins (O&O) Plants are located at the Jefferson County Operations complex in Port Neches, Texas. During previous years, the C-4 and O&O Plants have generated more than 10 Megagrams per year of total annual benzene waste. This quantity has decreased due to process changes at the C-4 Plant during 2001 and the continued shutdown of the O&O Plant's A-3 Unit until the unit was restarted on September 11, 2004. *Table 1: 2004 Benzene Quantities for C-4 and O&O Plants* addresses each benzene waste stream for compliance with either the individual stream exemption or the control standards requirement as described in 40 CFR 61.342, Subpart FF.

For 2004, Huntsman C-4 and O&O Plants' total annual benzene reporting consists of facility waste that is sent off-site for treatment and disposal, as well as, facility wastes that are managed on-site. For the O&O Plant, the A-3 Unit has historically contained the majority of Huntsman's benzene waste streams, however, discontinued operation of the A-3 Unit occurred on May 31, 2001. The A-3 Unit was restarted on September 11, 2004.

A benzene waste stream with a flow-weighted annual average benzene concentration of less than 10 ppmw as determined by the procedures specified in §61.355(c)(2) or §61.355(c)(3) may be exempted from the control requirements of §61.342(c)(1). Benzene waste streams identified as meeting the exemption requirements of 40 CFR 61.342(c)(2) during 2004 include the following:

- A3 Exchanger Cleaning Solids
- C4 Sponge Oil Exchanger Residue
- O&O Soap Solution
- C4 Process Filters
- C-4 Hydroblast Pit Residue
- O&O Oily Trash Naphtha Soaked
- C-4 Solvent Tower and Stripper Residue
- C-4 Popcorn Polymer Wastewater System
- Tank Bottoms
- C-4 Vent Compressor Residue
- O&O/C-4 Contaminated Soil
- O&O/C-4 Contaminated Soil

A benzene waste stream may be exempted from the control requirements of §61.342(c)(1) provided that the owner meets all of the conditions of §61.342(c)(3)(ii). The condition of §61.342(c)(3)(ii)(A) states that the owner or operator chooses not to exempt process wastewater under the conditions specified in 40 CFR 61.342(c)(3)(i). §61.342(c)(3)(ii)(B) states that the total annual benzene quantity in all benzene waste

streams chosen for exemption must not exceed 2.0 Mg/yr. §61.342(c)(3)(ii)(C) declares that the total annual benzene quantity in all benzene waste streams chosen for exemption, including process unit turnaround waste, is determined for the year in which the waste is generated. 2004 benzene waste streams identified as meeting the exemption requirements of 40 CFR 61.342(c)(ii) include the following:

- A-3 Quench Water System Sludge
- O&O A-3 Gas Header O/W Residue
- A-3 Pall Filters
- C-4 Sponge Oil Exchanger Residue
- O&O Soap Solution
- A3 Hazardous Wastewater
- C4 Process Filters
- O&O Naphtha Pads and PPE
- O&O Naphtha Contaminated Soil
- C-4 Popcorn Polymer Wastewater System
- C-4 Popcorn Polymer
- C-4 Polyblend (Off-Site Disposal)
- C4 Polyblend Residue

Benzene waste streams identified as not meeting the requirements for exemption are subject to the requirements of 40 CFR 61 Subpart FF §61.342(c)(1) for control of benzene emissions to the ambient air from waste operations. The C-4 Polyblend (Bz combusted in BIF), the O&O A-3 Quench Tower Tar and the O&O A-3 Quench Drum Tar have been identified having an average annual water content less than 10%, therefore it meets the requirements of §61.342 (a)(1) and are not included in the 2004 TAB.

Table 2: Excluded Waste Streams identifies all year 2001/2002/2003 benzene waste streams that were not in benzene operation at any time during 2004. These former benzene waste streams are not included in the 2004 TAB Report determination. The following waste streams are not applicable to 40 CFR 61.342, Subpart FF since each was not in benzene operation during 2003:

- O&O A-3 Sump to TO-88
- O&O R&S TO-43
- O&O Quench Area Sump to TO-88
- O&O Wash Oil Sump to TO-88
- C-4 Polyblend Residue
- A-3 Molecular Sieve
- A-3 Pyronaphtha Tank Bottoms Sludge
- A-3 Coke Fines From Furnace
- C-4 Raschig Rings
- C-4 Process Filters
- O&O Wastewater
- C-4 Crude Butadiene Tank Bottoms

- C-4 Spent Catalyst
- C-4 Oil Soaked Absorbent
- C-4 MTBE Catalyst Residue
- C-4 Boiler Rust and Scale
- C-4 Sump Cleanings

For reporting year 2004, C-4 and O&O Plants' TAB waste summation of applicable benzene waste streams was 32.769 Mg/yr. Benzene waste streams excluded from the TAB calculations according to §61.342(a)(1) equalled 41.2924 Mg/yr.

TABLE 1:
2004 BENZENE QUANTITIES
FOR C-4 AND O&O PLANTS

TABLE 1
2004 BENZENE QUANTITIES FOR C-4 AND O&O PLANTS

Stream Description	Subpart FF Controls	(Ref. 4) Stream Type	Waste Quantity		Range of Conc.	Flow-Weighted Benzene Conc.	Benzene Quantity	
			(lbs/yr)	(Mg/yr)	(ppm)	(ppm)	(Mg/yr)	
61.357(a)(2)	61.357(a)(2)	Ref #	61.357(a)(3)(i-v)					
A-3 Quench Water System Sludge	exempt	2, 3	-	5,180.00	2.352	36.1	36.10	8.490E-05
O&O A-3 Gas Header O/W Residue	exempt	2, 3	-	150	0.068	10	10.00	6.810E-07
A-3 Exchanger Cleaning Solids	exempt	1, 3	-	1,100.00	0.499	0.2	0.20	9.988E-08
A-3 Pall Filters	exempt	2, 3	-	16,940.00	7.691	469	469.00	3.607E-03
C-4 Sponge Oil Exchanger Residue	exempt	2,3	-	4,650.00	2.111	5.4 - 28.7	6.61	1.395E-05
O&O Soap Solution	exempt	1, 5	-	399,880.00	181.546	0.0 - 0.14	0.06	1.089E-05
A3 Hazardous Wastewater	yes	-	-	770,420.00	349.771	21.0 - 4788	5046.00	1.765E+00
C4 Process Filters	exempt	2,3	-	6,424.00	2.916	0.0 - 5.8	0.25	7.291E-07
C-4 Hydroblast Pit Residue	exempt	1,3	-	22,640.00	10.279	0.2 - 2.3	2.10	2.158E-05
O&O Naphtha Pads and PPE	exempt	2, 3	-	3,500.00	1.589	10	10.00	1.589E-05
O&O Oily Trash Naphtha Soaked	exempt	1, 3	-	121,140.00	54.998	0.0 - 5.	0.05	2.750E-06
O&O Naphtha Contaminated Soil	exempt	2,3	-	2,400.00	1.090	10.0 - 10.0	10.00	1.090E-05
C-4/O&O Lab Pack	exempt	1,3	-	147.00	0.067	0 - 10	10.00	6.674E-07
C-4 Solvent Tower and Stripper Residue	exempt	1,3,5	-	12,248.00	5.561	0 - 1.08	0.04	2.108E-07
C-4 Popcorn Polymer Wastewater System	exempt	2, 3	-	8,332.00	3.783	0 - 0.24	0.08	3.026E-07
C-4 Popcorn Polymer	exempt	2,3,5	-	4,600.00	2.088	10.0 - 10.0	10.00	2.088E-05
Tank Bottoms	exempt	1, 3	-	2,940.00	1.335	0.9	0.09	1.201E-07
C-4 Vent Compressor Residue	exempt	1,5	-	3,440.00	1.562	0.7 - 0.7	0.00	0.000E+00
O&O/C-4 Contaminated Soil	exempt	1,5	-	195,150.00	88.598	0	0.00	0.000E+00
O&O/C-4 Contaminated Soil	exempt	1,5	-	2,599,500.00	1,180.173	0 - 1.53	0.07	8.261E-05
C-4 Polyblend (Off-Site Disposal)	exempt	2,3	-	211,950.00	96.225	2750 - 5380	3048.00	2.933E-01
C4 Polyblend Residue	exempt	2, 3	-	200.00	0.091	457	457.00	4.150E-05
O&O R&S TO-87	yes	-	PTD	6,921,822.00	3,142.507	6500	6500.00	2.043E+01
O&O A-3 Sump / Wash Oil / Quench to T-O-88	exempt	2	PWW	14,839,337.00	6,737.059	1.0 - 24.0	19.67	1.325E-01
O&O A-3 Sump / Wash Oil / Quench to T-O-126	exempt	2, 5	PWW	4,990,861.00	2,265.851	1.0 - 24.0	19.67	4.457E-02
O&O Quench Drum to WW Stripper	yes	-	PWW	106,535,636.00	48,367.179	42 - 91	84.00	4.063E+00
O&O Spent Caustic to WW Stripper	yes	-	PWW	57,837,787.00	26,258.355	31 - 370	230.00	6.039E+00
O&O Gasoline with Water	exempt	2, 3	-	259,073.00	117.619	10	10.00	1.176E-03
							TAB	32.7690

Streams Excluded from TAB Calculation ($H_2O < 10\%$) (61.342(a)(1))

Polyblend (bz combusted in BIF)	Yes	-	-	14,730,000.00	6,687.420	2,884-14,252	6174.51	4.129E+01
O&O A-3 Quench Tower Tar	exempt	2	-	1,666.00	0.756	589	589.00	4.455E-04
O&O A-3 Quench Drum Tar	exempt	2	-	1,666.00	0.756	589	589.00	4.455E-04
REFERENCES:						Excluded from TAB		41.2924

REFERENCES:

1. Exempt from control requirements (<10 ppm benzene) (61.342(c)(2))
2. Exempt from control requirements (benzene quantity sum <2 Mg/yr) (61.342(c)(3)(ii)) ==>
3. Waste taken offsite for treatment
4. Process Wastewater (PWW); Product Tank Draw-down (PTD); Landfill Leachate (LL)
5. Newly exempted stream for the year 2003
6. Waste stream not generated/disposed during 2003

0.4753 Mg

Excluded from TAB

41.2924

TABLE 2: EXCLUDED WASTE STREAMS

TABLE 2
EXCLUDED WASTE STREAMS

STREAM DESCRIPTION	SUBPART FF CONTROLS		STREAM TYPE	WASTE QUANTITY		RANGE OF CONC.	FLOW-WEIGHTED BENZENE CONC.	BENZENE QUANTITY
				(lbs/yr)	(Mg/yr)	(ppm)	(ppm)	(Mg/yr)
61.357(a)(2)	61.357(a)(2)	Ref #	61.357(a)(3)(i-v)					
O&O A-3 Sump to TO-88	exempt	1	PWW	0.00	0.000	14.3-29.4	20.50	0.000E+00
O&O R&S TO-43	Yes	1	PTD	0.00	0.000	62-830	490.5	0.000E+00
O&O Quench Area Sump to TO-88	exempt	1	PWW	0.00	0.000	7.93-33.80	17.98	0.000E+00
O&O Wash Oil Sump to TO-88	exempt	1	PWW	0.00	0.000	1.7-120	42.925	0.000E+00
C-4 Polyblend Residue	exempt	1	-	0.00	0.000	1000	1000	0.000E+00
A-3 Molecular Sieve	exempt	1	-	0.00	0.000	0.6 - 4.09	10	0.000E+00
A-3 Pyronaphtha Tank Bottoms Sludge	exempt	1	-	0.00	0.000	500 - 1039	949	0.000E+00
A-3 Coke Fines From Furnace	exempt	1	-	0.00	0.000	1.2 - 1.2	1.2	0.000E+00
C-4 Raschig Rings	exempt	1	-	0.00	0.000	0 - 0.4	0.2	0.000E+00
C-4 Process Filters	exempt	1	-	0.00	0.000	0 - 0.6	0.2	0.000E+00
O&O Wastewater	exempt	1	-	0.00	0.000	0 - 0.5	0.1	0.000E+00
C-4 Crude Butadiene Tank Bottoms	exempt	1	-	0.00	0.000	1.5 - 4.3	0.00	0.000E+00
C-4 Spent Catalyst	exempt	2,5	-	0.00	0.000	0 - 11.1	0.00	0.000E+00
C-4 Oil Soaked Absorbent	exempt	1,5	-	0.00	0.000	0.8 - 0.8	0.04	
C-4 MTBE Catalyst Residue	exempt	1,5	-	0.00	0.000	0 - 3.47	0.00	
C-4 Boiler Rust and Scale	exempt	1,5	-	0.00	0.000	1.2 - 1.2	0.00	0.000E+00
C-4 Sump Cleanings	exempt	1,5	-	0.00	0.000	0 - 1.5	0.10	0.000E+00
							TAB	0.000
Streams Excluded from TAB Calculation (H₂O <10%) (61.342(a)(1))								
C-4 Waste Oil	exempt	1	-	0.00	0.000	1,700	1,700	0.000E+00
C-4 Hydrocarbon Slop Tank Residue	exempt	1	-	0.00	0.000	124 -124	124	0.000E+00
REFERENCE:							Excluded from TAB	0.00

1. These waste streams were included in the 2001, 2002, and/or 2003 TAB Reports, but were not in benzene operation during 2004. Due to process changes or a lack of facility generation, these waste streams are not included in the 2004 TAB Report for the C-4, O&O, and PO/MTBE facilities.

TABLE 3:
C-4 AND O&O PLANTS TOTAL
BENZENE QUANTITY DATA

TABLE 3
C-4 AND O&O TOTAL BENZENE QUANTITY DATA

Waste	Description	Pounds (lbs)	Date	Conc. (ppmw)	Basis	Total Weight (lbs)	Total Benzene (lbs)	Minimum (ppm)	Maximum (ppm)	Average (ppm)	% Water	Benzene Mg
11033191	A-3 Molecular Sieve	None Generated in CY 2004										
1104519H	A-3 Quench Water System Sludge	5,180						36.10	36.10	36.10	>10	8.49E-05
			9/23/2004	36.10	Measured	5,180	1.87E-01					
1126219H	O&O A-3 Gas Header O/W Residue	150						10.00	10.00	10.00	>10	6.81E-07
			8/27/2004	10.00	Estimate	150	1.50E-03					
11303192	A-3 Exchanger Cleaning Solids	1,100				1,100	0.00E+00	0.24	0.24	0.24	>10	1.20E-07
			9/23/2004	0.24	Measured							
1114695H	A-3 Pyronaphtha Tank Bottoms Sludge	None Generated in CY 2004										
11244041	A-3 Coke Fines From Furnaces	None Generated in CY 2004										
1134310H	A-3 Pall Filters	16,940						469.00	469.00	469.00	>10	3.61E-03
			10/15/2004	469.00	Estimated	4,640	2.18E+00					
			12/1/2004	469.00	Estimated	8,400	3.94E+00					
			12/1/2004	469.00	Estimated	3,900	1.83E+00					
				469.00		16,940	7.94E+00					
1135119H	A3 Hazardous Wastewater	770,420						21.90	47,880.00	5,046.00	>10	1.76E+00
			8/27/2004	251.00	Measured	43,780	1.10E+01					
			8/31/2004	251.00	Measured	42,280	1.06E+01					
			9/1/2004	251.00	Measured	35,120	8.82E+00					
			9/1/2004	21.90	Measured	39,440	8.64E-01					
			9/2/2004	21.90	Measured	42,640	9.34E-01					
			9/7/2004	666.00	Measured	22,760	1.52E+01					
			9/7/2004	21.90	Measured	31,580	6.92E-01					
			9/2/2004	21.90	Measured	40,380	8.84E-01					
			9/2/2004	666.00	Measured	43,980	2.93E+01					
			9/3/2004	666.00	Measured	41,800	2.78E+01					
			9/3/2004	666.00	Measured	25,380	1.69E+01					
			9/8/2004	251.00	Measured	42,500	1.07E+01					
			9/8/2004	36.10	Measured	40,960	1.48E+00					
			9/9/2004	243.80	Measured	41,580	1.01E+01					
			9/9/2004	36.10	Measured	37,520	1.35E+00					
			1/4/2005	47,880.00	Measured	37,940	1.82E+03					
			1/5/2005	29,160.00	Measured	41,740	1.22E+03					
			1/4/2005	7,650.00	Measured	42,820	3.28E+02					

TABLE 3
C-4 AND O&O TOTAL BENZENE QUANTITY DATA

Waste	Description	Pounds (lbs)	Date	Conc. (ppmw)	Basis	Total Weight (lbs)	Total Benzene (lbs)	Minimum (ppm)	Maximum (ppm)	Average (ppm)	% Water	Benzene Mg
			1/5/2005	7,650.00	Measured	43,800	3.35E+02					
			1/6/2005	1,378.00	Measured	32,420	4.47E+01					
				5,046.13		770,420	3.89E+03					
3100606H	C-4 Sponge Oil Exchanger Residue	4,650						5.35	28.70	6.61	>10	1.39E-05
			7/7/2004	28.70	Measured	250	7.18E-03					
			5/10/2004	5.35	Measured	4,400	2.35E-02					
				6.61		4,650	3.07E-02					
31031191	Soap Solution	399,880						0.10	0.14	0.06	>10	1.09E-05
			4/30/2004	0.01	Measured	37,040	3.70E-04					
			4/30/2004	0.10	Measured	28,120	2.87E-03					
			4/30/2004	0.01	Measured	22,420	2.24E-04					
			5/4/2004	0.02	Measured	14,200	2.70E-04					
			5/4/2004	0.02	Measured	41,920	7.96E-04					
			11/4/2004	0.02	Measured	32,300	4.85E-04					
			11/4/2004	0.05	Measured	46,160	2.26E-03					
			11/4/2004	0.01	Measured	42,860	5.14E-04					
			10/29/2004	0.10	Measured	25,900	2.59E-03					
			11/1/2004	0.10	Measured	37,100	3.71E-03					
			10/29/2004	0.10	Measured	30,380	3.04E-03					
			11/23/2004	0.14	Measured	41,480	5.77E-03					
				0.06		399,880	2.29E-02					
34043192	C-4 Raschig Rings	None Generated in CY 2004										
36023101	C-4 Process Filters	6,424						0.00	5.80	0.25	>10	7.33E-07
			1/1/2004	0.00		5,000	0.00E+00					
			1/1/2004	1.50		300	4.50E-04					
			1/1/2004	5.82		200	1.16E-03					
			9/23/2004	0.00		924	0.00E+00					
				0.25		6,424	1.61E-03					
41433891	C-4 Hydroblast Pit Residue	22,640						0.20	5.70	2.10	>10	2.16E-05
			3/24/2004	0.24	Measured (TCLP)	1,290	3.10E-04					
			3/24/2004	0.42	Measured (TCLP)	860	3.61E-04					
			7/22/2004	0.42	Measured (TCLP)	1,892	7.95E-04					
			7/22/2004	0.44	Measured	946	4.16E-04					

TABLE 3
C-4 AND O&O TOTAL BENZENE QUANTITY DATA

Waste	Description	Pounds (lbs)	Date	Conc. (ppmw)	Basis	Total Weight (lbs)	Total Benzene (lbs)	Minimum (ppm)	Maximum (ppm)	Average (ppm)	% Water	Benzene Mg
			7/22/2004	5.68	Measured (TCLP)	6,622	3.76E-02					
			9/23/2004	0.46	Measured (TCLP)	462	2.13E-04					
			12/29/2004	0.66	Measured (TCLP)	3,872	2.56E-03					
			12/31/2004	0.48	Measured (TCLP)	3,000	1.44E-03					
			9/24/2004	1.04	Measured (TCLP)	3,696	3.84E-03					
				2.10		22,640	4.75E-02					
41544891	Oily Trash Naphtha Soaked	121,140						0.00	5.70	0.05	>10	2.59E-06
			2/19/2004			8,380	0.00E+00					
			6/4/2004			11,120	0.00E+00					
			8/27/2004			4,420	0.00E+00					
			6/10/2004			5,440	0.00E+00					
			11/10/2004			22,100	0.00E+00					
				10.70		100	1.07E-03					
						500	0.00E+00					
			10/28/2004	0.20		100	2.00E-05					
						5,700	0.00E+00					
				1.52		3,040	4.62E-03					
			4/28/2004			11,220	0.00E+00					
			2/23/2004			2,440	0.00E+00					
						46,580	0.00E+00					
				0.05		121,140	5.71E-03					
4309319H	O&O Naphtha Pads and PPE	3,500	10/21/2004	10.00	estimated	3,500	3.50E-02	10.00	10.00	10.00	>10	1.59E-05
4310301H	O&O Naphtha Contaminated Soil	2,400	11/1/2004	10.00	Estimate	2,400	2.40E-02	10.00	10.00	10.00	>10	1.09E-05
4317119H	O&O Wastewater	None Generated in CY 2004										
4406609H	C-4 Hydrocarbon Slop Tank Residue	None Generated in CY 2004										
44093191	C-4 Crude Butadiene Tank Bottoms	None Generated in CY 2004										
4703009H	C-4/O&O Lab Pack	174						10.00	10.00	10.00	>10	7.90E-07

TABLE 3
C-4 AND O&O TOTAL BENZENE QUANTITY DATA

Waste	Description	Pounds (lbs)	Date	Conc. (ppmw)	Basis	Total Weight (lbs)	Total Benzene (lbs)	Minimum (ppm)	Maximum (ppm)	Average (ppm)	% Water	Benzene Mg
				10.00	Estimate	174	1.74E-03					
51084031	C-4 Solvent Tower and Stripper Residue	12,248						0.00	1.08	0.04	>10	2.11E-07
			3/24/2004	1.08	Measured (TCLP)	430	4.64E-04					
			12/13/2004	0.00	ND	2,060						
			12/29/2004	0.00	ND	9,758	0.00E+00					
				0.04		12,248	4.64E-04					
51104031	C4 Popcorn Polymer Wastewater System	8,332						0.00	0.24	0.08	>10	3.02E-07
			3/24/2004	0.00	ND	5,160	0.00E+00					
			9/23/2004	0.24	Measured (TCLP)	2,772	6.65E-04					
			12/29/2004	0.00	ND	400	0.00E+00					
				0.08		8,332	6.65E-04					
5106403H	C-4 Popcorn Polymer	4,600						10.00	10.00	10.00	>10	2.09E-05
			2/26/2004	10.00	Estimate	1,200	1.20E-02					
			5/10/2004	10.00	Estimate	1,600	1.60E-02					
			7/6/2004	10.00	Estimate	800	8.00E-03					
			6/9/2004	10.00	Estimate	600	6.00E-03					
			8/27/2004	10.00	Estimate	400	4.00E-03					
				10.00		4,600	4.60E-02					
5119119H	Soap Solution Wastewater	305,000						0.05	488.00	112.43	>10	1.56E-02
			11/13/2004	5.52	Measured	30,220	1.67E-01					
			11/13/2004	5.99	Measured	37,500	2.25E-01					
			11/14/2004	14.40	Measured	34,940	5.03E-01					
			11/14/2004	0.94	Measured	42,160	3.98E-02					
			11/17/2004	2.05	Measured	35,500	7.28E-02					
			11/17/2004	4.91	Measured	29,560	1.45E-01					
			11/18/2004	0.48	Measured	25,880	1.24E-02					
			11/17/2004	468.00	Measured	33,120	1.55E+01					
			11/18/2004	488.00	Measured	36,120	1.76E+01					
				112.43		305,000	3.43E+01					
51203191	Tank Bottoms	2,940		0.90	Measured (TCLP)	2,940	2.65E-03	0.09	0.09	0.09	>10	1.20E-07
34016091	C-4 Vent Compressor Residue	3,440	9/23/2004	ND	Measured (TCLP)	3,440		ND	ND	0.00	>10	0.00E+00

TABLE 3
C-4 AND O&O TOTAL BENZENE QUANTITY DATA

Waste	Description	Pounds (lbs)	Date	Conc. (ppmw)	Basis	Total Weight (lbs)	Total Benzene (lbs)	Minimum (ppm)	Maximum (ppm)	Average (ppm)	% Water	Benzene Mg
34033931	C-4 Spent Catalyst	None Generated in CY 2004										
41083011	O&O/C-4 Contaminated Soil	195,150						0.00	0.00	0.00	>10	0.00E+00
			5/15/2004	0.00	ND	24,000	0.00E+00					
			5/21/2004	0.00	ND	26,980	0.00E+00					
			9/20/2004	0.00	ND	28,280	0.00E+00					
			9/21/2004	0.00	ND	21,140	0.00E+00					
			10/15/2004	0.00	ND	13,579	0.00E+00					
			10/15/2004	0.00	ND	37,880	0.00E+00					
			9/23/2004	0.00	ND	27,380	0.00E+00					
			9/15/2004	0.00	ND	924	0.00E+00					
			9/10/2004	0.00	ND	8,360	0.00E+00					
				0.00	ND	6,627	0.00E+00					
				0.00		195,150	0.00E+00					
41263012	O&O/C-4 Contaminated Soil	2,599,500						0.00	1.53	0.07	>10	8.32E-05
			4/8/2004	0.54	Measured	1,500	8.10E-04					
			7/6/2004	1.53	Measured	78,000	1.19E-01					
			5/5/2004			60,000	0.00E+00					
			5/5/2004			210,000	0.00E+00					
			5/5/2004			120,000	0.00E+00					
			5/18/2004			90,000	0.00E+00					
			5/24/2004	0.35	Measured	180,000	6.30E-02					
			9/3/2004			210,000	0.00E+00					
			9/20/2004			30,000	0.00E+00					
			9/16/2004			30,000	0.00E+00					
			9/15/2004	0.00	ND	1,140,000	0.00E+00					
			11/24/2004	0.00	ND	300,000	0.00E+00					
			5/24/2004	0.00	ND	90,000	0.00E+00					
			3/31/2004			60,000	0.00E+00					
				0.07		2,599,500	1.83E-01					
41364091	C-4 Oil Soaked Absorbent	None Generated in CY 2004										
44183191	C-4 MTBE Catalyst Residue	None Generated in CY 2004										

TABLE 3
C-4 AND O&O TOTAL BENZENE QUANTITY DATA

Waste	Description	Pounds (lbs)	Date	Conc. (ppmw)	Basis	Total Weight (lbs)	Total Benzene (lbs)	Minimum (ppm)	Maximum (ppm)	Average (ppm)	% Water	Benzene Mg
46003012	C-4 Boiler Rust and Scale	None Generated in CY 2004										
51133191	C-4 Sump Cleanings	None Generated in CY 2004										
4400219	C-4 Polyblend (Off-Site Disposal)	211,950										
			8/10/2004	3,048.00	Measured	168,300	5.13E+02					
			9/22/2003	3,048.00	Measured	43,650	1.33E+02					
				3,048.00		211,950	6.46E+02					
4401403H	C4 Polyblend Residue	200	2/26/2004	457.00	Measured	200	9.14E-02	4,578.00	457.00	457.00	>10	4.15E-05
	C-4 Polyblend (bz combusted in BIF)	17,479,001						743.42	304.80	496.88	>10	3.94E+00
			1/1/2004	743.42	Measured	1,472,124.90	1.09E+03					
			2/1/2004	743.42	Measured	1,001,208.10	7.44E+02					
			3/1/2004	743.42	Measured	1,781,817.60	1.32E+03					
			4/1/2004	743.42	Measured	1,773,155.90	1.32E+03					
			5/1/2004	743.42	Measured	1,583,730.70	1.18E+03					
			6/1/2004	309.53	Measured	2,222,231.20	6.88E+02					
			7/1/2004	309.53	Measured	1,686,790.40	5.22E+02					
			8/1/2004	304.80	Measured	2,301,770.10	7.02E+02					
			9/1/2004	304.80	Measured	214,634.30	6.54E+01					
			10/1/2004	304.80	Measured	1,220,743.60	3.72E+02					
			11/1/2004	304.80	Measured	1,415,624.00	4.31E+02					
			12/1/2004	304.80	Measured	805,170.30	2.45E+02					
				496.88		17,479,001	8.68E+03					
	O&O A-3 Sump/Wash Oil/Quench to T-O-88	14,839,337			Estimated	14,839,337	0.00E+00	1.00	24.00	19.67	>10	1.33E-01
	O&O A-3 Sump/Wash Oil/Quench to T-O-126	4,990,861			Estimated	4,990,861	0.00E+00	1.00	24.00	19.67	>10	4.46E-02

TABLE 4:
C-4 AND O&O PLANTS
OFF-SITE WASTE

TABLE 4
C-4 AND O&O PLANTS OFF-SITE WASTE

Waste	Description	Pounds (lbs)	Minimum (ppm)	Maximum (ppm)	Average (ppm)	% Water	Benzene Mg
11033191	A-3 Molecular Sieve	None Generated in CY 2004				>10	
1126219H	O&O A-3 Gas Header O/W Residue	150	10	10	10	>10	6.81E-07
11303192	A-3 Exchanger Cleaning Solids	1,100	0.2	0.2	0.2	>10	9.99E-08
1104519H	A-3 Quench Water System Sludge	5,180	36.10	36.10	36.10	>10	8.49E-05
1114695H	A-3 Pyronaphtha Tank Bottoms Sludge	None Generated in CY 2004				>10	
11244041	A-3 Coke Fines From Furnaces	None Generated in CY 2004				>10	
1134310H	A-3 Pall Filters	16,940	469.00	469.00	469.00	>10	3.61E-03
1135119H	a-3 Hazardous Wastewater	770,420	21.90	47,880.00	5,046.00	>10	1.76E+00
3100606H	C-4 Sponge Oil Exchanger Residue	4,650	5.40	28.70	6.60	>10	1.39E-05
31031191	Soap Solution	399,880	0.00	0.14	0.03	>10	5.45E-06
34043192	C-4 Raschig Rings	None Generated in CY 2004				>10	
36023101	C-4 Process Filters	6,424	0.00	5.80	0.30	>10	8.75E-07
41433891	C-4 Hydroblast Pit Residue	22,640	0.20	5.70	2.10	>10	2.16E-05
41544891	Oily Trash Naphtha Soaked	11,810	0.00	10.70	0.00	>10	0.00E+00
4309319H	O&O Naphtha Pads and PPE	3,500	10.00	10.00	10.00	>10	1.59E-05
4310301H	O&O Naphtha Contaminated Soil	2,400	10.00	10.00	10.00	>10	1.09E-05
4317119H	O&O Wastewater	None Generated in CY 2004				>10	
4406609H	C-4 Hydrocarbon Slop Tank Residue	None Generated in CY 2004				<10	
44093191	C-4 Crude Butadiene Tank Bottoms	16,372	1.50	4.30	0.00	>10	0.00E+00
4703009H	C-4/O&O Lab Pack	2,747	0.00	10.00	10.00	>10	1.25E-05
51084031	C-4 Solvent Tower and Stripper Residue	23,468	0.00	0.70	0.04	>10	4.04E-07
5106403H	C-4 Popcorn Polymer	11,150	10.00	10.00	10.00	>10	5.06E-05
34016091	C-4 Vent Compressor Residue	946	0.70	0.70	0.00	>10	0.00E+00
34033931	C-4 Spent Catalyst	5,880	0.00	11.10	0.00	>10	0.00E+00
41083011	Contaminated Soil	450,880	0.00	3.47	0.00	>10	0.00E+00
41263012	Contaminated Soil	2,599,500	0.00	1.80	0.10	>10	1.18E-04
41364091	Oil Soaked Absorbent	1,419	0.80	0.80	0.00	>10	0.00E+00
44183191	MTBE Catalyst Residue	80,110	0.00	3.47	0.00	>10	0.00E+00
46003012	Boiler Rust and Scale	946	1.20	1.20	0.00	>10	0.00E+00
51133191	C-4 Sump Cleanings	25,680	0.00	1.50	0.00	>10	0.00E+00
4400219	C-4 Polyblend (Off-Site Disposal)	211,950	2,750.00	5,380.00	4,017.81	>10	3.87E-01

Appendix D

Heat Exchange System Alternative Monitoring Request

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HUNTSMAN

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No. 8473 0075 7040 (1082)

Certified Mail – Return Receipt Requested

August 12, 2005

Regional Administrator,
c/o Compliance Assurance and Enforcement Division
U.S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

00.10.050. MACT.
A3: Ethylene
MACT alt.
Mon Reg [initials]

Re: Ethylene MACT Alternate Monitoring Request
Huntsman Petrochemical Corporation, Jefferson County Operations
Oxides and Olefins (O&O) Plant
TCEQ Account No.: JE-0052-V, Regulated Entity Number: 100219252

Dear Sir/Madam:

The Huntsman Petrochemical Corporation, (Huntsman) operates its A3 Ethylene Unit in Port Neches, Jefferson County, Texas. The heat exchange systems in the A3 Ethylene unit are subject to the monitoring requirements under 40 CFR 63.1086. 40 CFR 63.1086 specifies that the cooling water may be monitored using any method listed in 40 CFR Part 136. Alternate methods may be used upon approval by the administrator. Alternate monitoring is hereby requested as specified and justified below.

Based on a review of the Hazardous Air Pollutants (HAP's) possibly present in the cooling water, the flow rates, and detection limits, Huntsman proposes the use of EPA Methods 8260/8270 to detect the compounds listed below. Table 1 of 40 CFR 63 subpart XX lists eleven compounds that Huntsman is required to monitor, of which four have approved methods listed in 40CFR 136. The table below delineates the compounds for which monitoring is required, the Part 136 approved methods, and the proposed test methods.

Compound	136 Method	Proposed method
Benzene	624	8260
1,3-Butadiene	none listed	8260
Cumene	none listed	8260
Ethyl benzene	624	8260
Hexane	none listed	8260
Naphthalene	625	8270
Styrene	none listed	8260
Toluene	624	8260
o-Xylene	none listed	8260
m-Xylene	none listed	8260
p-xylene	none listed	8260

Ethylene MACT Alternate Monitoring Request

Page 2

As listed above, seven of the compounds do not have methods approved in Part 136. Huntsman hereby requests that Methods 8260 and 8270 be approved for 40 CFR 63.1086 testing for all of the compounds.

Additionally, Huntsman hereby requests that another method be concurrently considered as an alternate to the above. The heat exchange systems in the A3 unit are subject to the monitoring requirements of TCEQ Permit Number 198233. The permit requires weekly testing of the cooling tower return by TCEQ's Appendix P method. Huntsman has shown that the current sampling methodology can detect leaks in the heat exchanger system. The primary benefit of the use of this methodology would be timely detection of leaks, typically within 48 hours. Corrective actions could be initiated before the 40 CFR 63.1086 sample results would be delivered from the laboratory. A copy of the Cooling Tower Source Sampling Procedures Manual Appendix P is included in Attachment A for your reference.

If you have any questions regarding this request, or should you need additional information, please contact Mr. Jerry Cook, Environmental Team Leader, at (409) 723-3427.

Sincerely,



Edward L. Gunderson
Environmental Manager

cc: Mr. Vincent Meiller, TCEQ - Austin
: Mr. Stuart A. Mueller, Air Program Manager, TCEQ Region 10 - Beaumont

Attachment A

TCEQ

Cooling Tower

Source Sampling Procedures Manual Appendix P

APPENDIX P

COOLING TOWER MONITORING

General

Cooling tower monitoring describes the characterization of volatile organic air pollutants that are capable of being air-stripped from a water matrix. While generic or indicator monitoring may be required to identify the existence of volatile organic compound (VOC) emissions, speciated compound characterizations may also be required in some instances to characterize the specific compounds present.

Historically, a method for cooling tower water characterization was developed for use by El Paso Products Company in the early 70's. This method utilized a dynamic or flow-through system for air stripping a sample of the water and analyzing the resultant off-gases for VOCs using a common flame ionization detector (FID) analyzer, and has been the popular choice in Texas for many years. The El Paso Products method, however, has been overshadowed nationally by the use of purge and trap analysis of water samples utilizing gas chromatography and/or mass spectrometry techniques. While direct water analysis has been shown to be effective for cooling tower measurements of heavier molecular weight organic compounds with relatively high boiling points, Texas Commission on Environmental Quality (TCEQ) has determined that this approach may be ineffective for capture and measurement of volatile organic compounds with lower boiling points, such as ethylene, propylene, 1,3-butadiene, and butenes. VOCs with a low molecular weight and boiling point are generally lost in the sample collection step of purge/trap type analyses. Consequently, TCEQ requires that the air stripping method presented in this manual be used for cooling tower and other applicable water matrix emission measurements of VOCs with boiling points below 140 °F. Specific procedures for cooling tower sampling and analysis for VOCs with boiling points of 140 °F and greater must be submitted to TCEQ for approval on a case-by-case basis.

Air Stripping Method (Modified El Paso Method) for Determination of Volatile Organic Compound Emissions from Water Sources

1.0 Principle and Applicability

1.1 Principle. A continuous stream of cooling water, process water, or wastewater is supplied via a hard pipe or direct interface to an air stripping column apparatus for analysis. Air flowing countercurrent to the water strips volatile organic compounds from the water for analysis. Some gases may flash from the water immediately upon entering the apparatus and these gases are trapped and mixed with the air stripped compounds. The concentration of the air stripped compounds combined with the flashed gases is determined at the apparatus air outlet by a suitable detector and/or by sampling. Concentrations of air stripped compounds in the air exhaust, along with the air and water flow rates, are used to determine concentrations of strippable volatile compounds in the water. A FID analyzer is used to determine a value of "combined" or "total" strippable volatile organic compounds. Samples may also be collected in sample canisters for shipment to analytical laboratories for speciation of air contaminants. A gas chromatograph (GC) with an appropriate detector may be used to determine specific stripped species.

1.2 Applicability. This method is applicable to cooling tower water systems and may be applicable to qualitative and/or quantitative measurements on other sources such as API separators and wastewater systems.

2.0 Sensitivity

2.1 The sensitivity of this method for the onsite analysis by FID analyzer is typically 0.1 to 0.5 part-per-million, by volume (ppmv) methane in the stripped air, depending on the specific analyzer. The sensitivity of the GC speciation analysis will vary depending on the detector used. Detection limits as low as 2 - 50 part-per-billion, by volume (ppbv) in the stripped air may be possible with the use of a gas chromatograph equipped with a mass spectrometer (GC/MS).

2.2 FID Response. Response factors are not used to correct the total VOC measurement by FID analyzer. Speciation analysis of the VOCs present in the stripped gas would be required to correctly apply any proportioned response factor to the total VOC measurement, in which case, the results should be calculated from the speciated analysis rather than the total VOC results. Some chemicals, such as formaldehyde, will not respond well on a FID, having

particularly high response factors and, therefore, high detection limits. The total VOC procedure by FID should not be used on sources for which any potential targeted VOC has a response factor multiplier greater than 2 relative to methane. Such sources must either be sampled following the speciation procedure in Section 6.2, or an alternative detector, approved by the TCEQ, must be used in the total VOC procedure in Section 6.1. Alternative sampling and analysis procedures such as sorbent tube sample collection and analysis by high performance liquid chromatography (HPLC) are subject to TCEQ approval.

3.0 Equipment and Materials

3.1 Air stripping apparatus. An air stripping apparatus as presented in Figure 1 and meeting the following requirements:

3.1.1 The stripping chamber shall be a cylinder 36 inches in length with an internal diameter of 3 inches, and constructed of clear, heavy-walled glass.

3.1.2 The stripping chamber packing material shall be beryl saddles between 6 to 8 millimeter size. The depth of the packing material will be 26 inches.

3.1.3 The end caps of the stripping chamber must meet the dimensions specified in Figure 2. Neoprene stoppers are recommended; however, securing clamps will be required to prevent leakage. Black rubber stoppers are not allowed due to the potential absorption and release of organic compounds. Alternative designs for the end caps, such as customized threaded plastic caps with Neoprene gaskets, are acceptable provided the materials used are non-reactive with the sample matrix or target compounds, and the end caps meet the specifications in Figure 2. The tip of the water sample inlet line is intentionally left 5 to 6 inches above the water level in the stripping chamber to help accelerate the response of the system as some VOCs will be released immediately as the water falls into the chamber.

3.1.4 Tubing used in the air stripping apparatus for transporting gas and water shall be 1/4 inch stainless steel or Teflon material. Stainless steel or Teflon 1/4 inch tubing of minimal length shall be used to route water sample from the sample tap to the air stripping apparatus. The water sample tubing from the sample tap shall not be more than 50 feet in length.

3.1.5 Drying agents, such as Drierite™, for removing moisture from the stripped air stream before analysis by FID or collection in sample canisters are strictly prohibited to prevent loss of VOCs to the drying agents. An empty, clear-glass flask is used as a knock-out to remove some of the moisture in the stripped air stream, but gas exiting the stripping chamber will essentially be at saturated moisture for the ambient conditions. Different styles of knockout flasks are acceptable; however, the flask must be clear-glass and 500 ml or less in size. Some FID analyzers may not be able to monitor for prolonged periods under such conditions and intermittent monitoring may be required.

3.1.6 A T-union with one leg leading to a bubbler must be included as shown in Figure 1. Excess air not drawn into the analyzer probe or sample canister is vented through the bubbler and serves to indicate that sufficient flow has been established. This is to assure that the sample is only from the stripped air and is not drawing in any external air. With the bubbler in place, care must be taken not to pull water into the FID analyzer or sample canister.

3.1.7 Gas bubble formation in the water rotameter can sometimes result from the pressure drop across the water rotameter control valve. Significant gas bubbles can interfere with accurate measurement of the sample water flow to the stripping chamber. A suggested possible solution to this problem is to place a control valve downstream of the water rotameter. By opening the rotameter to the fully open position or using a non-metering rotameter, and controlling the flow with the valve after the rotameter, the pressure drop occurs after the rotameter and bubble formation may be minimized. This approach may require a fine-adjusting control valve to achieve the flow rate control desired, and the tester must be certain that the water rotameter can withstand the pressure in the water source being sampled.

Note: The TCEQ air stripping apparatus design is based on the apparatus designed by El Paso Products Company of Odessa, Texas (see Reference 9.1)

3.2 Flame Ionization Detector (FID) Analyzer. Analyzers with analog type readouts and those normally used for leak detection are generally not appropriate for this method because such instruments are designed for much higher concentration measurement than would be expected in the air stripping apparatus effluent. FID analyzers used in conjunction with the method must:

- 3.2.1 be a digital readout type, readable to 0.1 ppmv.
- 3.2.2 be able to meet the calibration requirements specified in Section 4.1.
- 3.2.3 have a sampling rate less than 2000 ml/min since the stripping air flow rate is 2500 ml/min and an excess air flow is required.

3.3 Gases for Air Stripping Apparatus Operation and FID Analyzer Calibration.

3.3.1 Zero Calibration Gas and Stripping Air. Air, certified to contain less than or equal to 0.1 ppmv of total hydrocarbon (THC).

3.3.2 High-Level Calibration Gas. Cylinder gas standard of methane in air, certified by the manufacturer to be within $\pm 2\%$ of the specified concentration. If the sample concentration of VOCs in the stripped gas is less than 10 ppmv as methane, the span gas calibration standard shall be 10 ppmv methane. Higher concentration span calibration standards may be necessary for some sources. If a higher calibration standard is required, select a high-level concentration such that the measured sample concentrations are between 10% and 100% of the high-level calibration gas concentration.

3.3.3 Mid-Level Calibration Gas. Cylinder gas standard of methane in air, certified by the manufacturer to be within $\pm 2\%$ of the specified concentration. The mid-level calibration gas concentration shall be between 20% and 50% of the high-level calibration gas concentration. (See note under 4.1.2.4.)

3.3.4 Certified gases must be used within the manufacturer's specified shelf life, or recertified upon expiration.

3.3.5 Subject to TCEQ approval, calibration gas standards other than methane may be used for sources that have only one or a predominate potential VOC present in the water matrix.

3.4 A gas chromatograph equipped with appropriate detector(s) for laboratory or field speciation of the specific organic components.

3.5 Sample canisters. Internally passivated stainless steel canisters for collection of air stripped samples for speciation analysis by GC. Sample canisters shall meet all requirements of Compendium Method IO-14A (US EPA Compendium for Determination of Toxic Organic Compounds in Ambient Air, EPA Document Number 625/R96/010B). Each sample canister shall be equipped with a) a vacuum gauge and b) either a needle valve for manually regulating flow rate or an automated flow regulator (i.e., a critical orifice or mass flow controller).

3.5.1 Tedlar™ bags may be used in place of stainless steel sample canisters, if the following provisions are met:

3.5.1.1 Bag samples must be analyzed according to Title 40 Code of Federal Regulations, Part 60, Appendix A, Method 18.

3.5.1.2 The recovery study for bag sampling in Section 8.4.2 of Method 18 must be performed for all the target compounds. The recovery study is performed by metering a known volume of zero air through a water blank stripping apparatus into the Tedlar™ bag and then spiking the bag with the target compounds. This step checks not only the potential loss of compounds due to the permeability of the Tedlar™, but also loss due to condensed moisture in the bag. Percent recovery for each target compound must be between 70 - 130%, or Tedlar™ bags are not acceptable for sample collection. When Tedlar™ bags are acceptable, as specified in Method 18, analysis results for target compounds must be corrected for the percent recoveries.

3.5.1.3 Tedlar™ bags must be new and unused.

3.5.1.4 Tedlar™ bags shall be checked for leaks and contamination as described in Method 18, Section 16.1.3.2.

3.5.1.5 Samples in Tedlar™ bags must be analyzed within 72 hours of collection. Recovery study bags must be stored for the same period of time as the sample bags.

4.0 Calibration

4.1 FID Analyzer Calibration

4.1.1 Initial/Periodic Instrument Performance Evaluation. Perform the calibration precision and response time tests as described in Sections 8.1.2 and 8.1.3 of Method 21 in 40 CFR 60, Appendix A.

4.1.2 Calibration Procedure

4.1.2.1 Warmup period. Follow manufacturer's recommendations.

4.1.2.2 Zero calibration. Introduce the zero gas (or stripping air) to the FID analyzer. Calibrate the analyzer to read 0.0 ± 0.2 ppmv.

4.1.2.3 High-level calibration. Introduce the high-level calibration gas (10 ppmv methane) to the FID analyzer. Calibrate the analyzer to read within $\pm 5.0\%$ of the calibration gas certified value.

4.1.2.4 Mid-level calibration check. Introduce the mid-level calibration to the FID analyzer. The FID analyzer response on the mid-level calibration gas must agree within $\pm 5.0\%$ of the calibration gas certified value. Note: The mid-level calibration step is optional if the VOC emissions determination is based solely on the results of the GC speciation analysis of the sample canister or Tedlar™ bag samples.

4.2 GC Calibration

4.2.1 GC analysis by Method 18

4.2.1.1 Follow the calibrations procedures described in Sections 8.2.1.5.2.1 and 10.0 in Method 18.

4.2.1.2 Alternative procedure. If a facility or laboratory is performing the same analysis on samples collected by this method on a daily basis, then the calibration and standardization procedures in Section 10.0 of 40 CFR 60, Appendix B, Performance Specification (PS) 9, may be used. The initial and periodic calibrations must satisfy all the requirements of Method 18 Sections 8.2.1.5.2.1 and 10.0, as well as those in Section 10.0 of PS9.

4.2.2 GC analysis by Compendium Method TO-14A (US EPA Compendium for Determination of Toxic Organic Compounds in Ambient Air, EPA Document Number 625/R96/010B)

4.2.2.1 Follow the appropriate calibration procedures described in Section 10 of TO-14A for the selected detector(s) in the GC system.

4.3 Air rotameter calibration

4.3.1 Calibrate the air supply rotameter system with a dry gas meter, soap film flowmeter, or similar direct volume measuring device with an accuracy of ± 2 percent.

4.3.2 Operate the rotameter at 2500 cc/min for at least three calibration runs for 10 minutes each. When three consecutive calibration flow rates agree within ± 5 percent, average the three flow rates.

4.3.3 If the average measured calibration flow rate agrees within $\pm 5\%$ of the rotameter reading, the rotameter is acceptable. If the difference between the rotameter reading and the measured calibration flow rate exceeds $\pm 5\%$, then remark the rotameter to the calibrated flow rate.

4.3.4 Perform the rotameter calibration before the first field test and semiannually, thereafter.

4.4 Water rotameter calibration.

4.4.1 Calibrate the water rotameter with a Class A volumetric flask, graduated cylinder, or similar container with a volume known to $\pm 2\%$ accuracy and capable of holding a volume at least 4 times the calibration flow rate (i.e., a 500 ml volumetric flask to calibrate the rotameter at 125 ml/min.)

4.4.2 Operate the water rotameter at 125 ml/min while filling the container. Record the time required to fill the container and calculate the actual flow rate based on the container volume and time required to fill the container. Repeat until three consecutive flow rates agree within $\pm 5\%$ of the mean.

4.4.3 If the average measured calibration flow rate agrees within $\pm 5\%$ of the rotameter reading, the rotameter is acceptable. If the difference between the rotameter reading and the calibration flow rate exceeds $\pm 5\%$, then remark the rotameter to the calibrated flow rate.

4.4.4 Perform the rotameter calibration before the first field test and semiannually, thereafter.

4.4.5 Alternatively, a Class A volumetric flask or graduated cylinder may be used in the field test to collect water at the stripping chamber water exit and recording the time required to fill the container. If this approach is used, the water rotameter need not be calibrated.

4.5 Temperature probe calibration.

4.5.1 Calibrate the stripping chamber temperature probe against an ASTM mercury thermometer or equivalent. The calibration shall be performed at or near 0°C , 20°C , and 40°C .

4.5.2 If the absolute temperature (in degrees Kelvin) measured by the temperature probe agree within $\pm 1.5\%$ at each reference point, the temperature probe is acceptable.

4.5.3 Perform the temperature probe calibration before the first field test and semiannually, thereafter.

5.0 Pretest Preparations

5.1 Selection of the sampling site.

5.1.1 Sample sites for cooling towers must meet the following criteria:

5.1.1.1 The sample port in the cooling tower return line header must be in a location where the feed rates to the cooling tower water are still under pressure and prior to the release of the pressure to atmospheric or any vents in the return line header. For example, if the cooling tower has an open trough along the top of the tower which distributes water to each of the cells, the water supply for the test should be taken prior to the cooling water entering the distributing trough.

5.1.1.2 The sample port/probe should not extend beyond the plane of the pipe wall into water matrix.

5.1.1.3 Samples should be drawn from either the vertical section near the base of the riser pipe (from the inside of the elbow to the riser) or the top of a horizontal section prior to the riser pipe at a location where the pipe will be completely full.

5.1.1.4 For cooling towers with multiple risers, samples must be drawn from a location prior to the risers unless sample ports are installed on each riser and the distribution of water flow to each riser can be determined.

5.1.2 Sample sites for sources other than cooling towers were not considered during the development of this method and selection criteria for such sources may be subject to TCEQ approval.

5.2 Sample canister preparation. These procedures are typically performed by the laboratory conducting the speciation analysis.

5.2.1 Before each use, sample canisters shall be cleaned, certified, and prepared according the procedures described in Section 11.1 of IO-14A.

5.2.2 Evacuate canisters to less than 0.05 mm Hg pressure at least 24 hours prior to sample collection. Record the canister ID, vacuum, date, and time on a label attached to the sample canister.

5.3 Setup of Apparatus.

5.3.1 Assure the unit is vertically level using a bubble indicator or some other level indicator. If the stripping chamber is not level, channeling of the water or air flow may occur in the chamber and result in inefficient stripping.

5.3.2 Connect the zero air supply to the air inlet of the air stripping apparatus.

5.4 Perform the calibration procedures for the FID analyzer as described in Section 4.1.

5.4.1 If VOC emissions are to be determined only by sampling with sample canisters and GC speciation, the mid-level calibration is optional since the FID analyzer is only

used for monitoring for system stabilization.

5.4.2 Record calibration results on a data sheet similar to that in Figure 3.

5.4.3 Some analyzers draw fuel air for the FID separately from the sample stream. If the fuel air is drawn from ambient air without purification, variations in the ambient level of THC may cause the instrument to drift. This can be especially problematic if the analyzer is calibrated indoors and then taken out to process areas for the test. Dramatic changes in ambient temperature may also cause instrument drift. Every effort should be made to calibrate the instrument under the same conditions it is to be used. When moving from source to source, a calibration check shall be performed on the analyzer to determine if changes in the ambient conditions (i.e., temperature or ambient THC) have caused instrument drift. Calibration drift checks shall be documented on the field data sheets. If the analyzer is not within the calibration specifications given in 4.1.2, the FID analyzer must be recalibrated.

5.5 Blank/Background Determination: The blank checks are especially important for stripping systems that are used on multiple sources and the possibility of cross contamination exists.

5.5.1 Zero Air Check

5.5.1.1 A zero air check is mandatory before each test, regardless if the system was previously used on a different source or not.

5.5.1.2 Open the zero air supply to the apparatus and adjust rotameter to read 2500 ml/min.

5.5.1.3 Monitor the air effluent from the apparatus with the FID analyzer to determine the baseline reading of the empty stripping chamber and apparatus. Record the analyzer reading on the data sheet.

5.5.1.4 If the zero air check indicates a background ≥ 1.0 ppmv as methane in the stripped gas, then the apparatus should be purged thoroughly to remove the contamination until an acceptable background is measured (< 1.0 ppmv as methane).

5.5.2 Water Blank Check.

5.5.2.1 Water blank checks shall be performed by the following schedule:

5.5.2.1.1 A water blank check shall be performed on all stripping apparatus systems, mobile and dedicated systems, before initial use in the field and at least once per month thereafter.

5.5.2.1.2 For mobile systems used on multiple sources, a water blank check between sources is optional (except as noted in 5.5.2.1.3), but is strongly recommended.

5.5.2.1.3 A water blank check is mandatory before beginning a test if the previous test or source for which the stripping apparatus was used indicated a total VOC reading (ppmv as methane in the stripped air) 10 times greater than the applicable allowable emission rate or action

level on the current source. See Equation 7-3 in Section 7.4.

5.5.2.2 In order to ensure the entire sampling system is free of contamination, the water blank check is performed through the sampling line and water rotameter. Using either a pump or gravity, fill the stripping chamber with clean distilled water through the sample line and water rotameter until the packing is just submerged. Adjust the water flow rate to 125 ml/min.

5.5.2.3 Restart the air supply and adjust to 2500 ml/min. Monitor the air effluent from the apparatus with the FID analyzer to determine the baseline reading of the apparatus while the system is flowing with clean water. Record the analyzer reading on the data sheet.

5.5.2.4 If the water blank check indicates a background ≥ 1.0 ppmv as methane in the stripped gas, then the apparatus should be cleaned and purged thoroughly to remove the contamination until an acceptable background is measured (< 1.0 ppmv as methane).

5.5.2.5 Drain the blank water from the stripping chamber before sampling.

5.5.3 Recommended cleaning procedure. If air and water blanks are not sufficient to remove contamination from the system, the system should be disassembled and the components cleaned thoroughly.

5.5.3.1 The stripping chamber should be cleaned with hot soapy water, followed by 5 rinses of tap water and 5 rinses of distilled water. The chamber may be baked off at 150 °C for at least 1 hour, if an oven is available large enough to hold the chamber. Otherwise, the chamber will have to be air dried.

5.5.3.2 The beryl saddles, moisture knock-out flask, and Neoprene stoppers should be cleaned with hot soapy water, followed by 5 rinses of tap water, 5 rinses of distilled water, then baked off in an oven at 150 °C for at least 1 hour.

5.5.3.3 TeflonTM and stainless steel tubing, unions, and valves that contact water or stripped air sample should be cleaned with hot soapy water, rinsed by flushing with 5 volumes of tap water and 5 volumes of distilled water, then purged with zero air or nitrogen while baked at 150 °C in an oven for at least 1 hour. Stainless tubing too long to fit inside an available oven without bending should just be purged with zero air or nitrogen after cleaning.

5.5.3.4 The water rotameter should be cleaned according to the manufacturer's recommendations, followed by flushing with distilled water and purging with zero air or nitrogen.

5.5.3.5 Some components, such as plastic caps for the knock-out flasks and some valves, may be heat sensitive and may be damaged if baked at 150°C. Such components should be baked at a lower temperature for longer periods, purged with zero air or nitrogen without heating, or simply air dried, as appropriate.

6.0 Sampling. This method presents two sampling approaches; an on-site determination of total VOC using a FID analyzer, and an off-site determination of speciated VOCs by sample collection in sample canisters followed by laboratory gas chromatography. Permit or applicable rule requirements may prohibit using the on-site FID analyzer approach without prior approval by the TCEQ. If the tester wishes to use both the on-site total VOC results and the laboratory speciated results for mass emission determinations, then all requirements of both approaches must be followed, including the mid-level calibration for the FID analyzer.

6.1 On-site determination of VOC emissions by FID analyzer.

6.1.1 Connect the water sample supply line to the sample port on the source (i.e., cooling tower return line header). Before connecting the water sample line to the air stripping apparatus water inlet, allow the sample water to flush through the sample line for at least 5 sample line volumes.

6.1.2 With the stripping air flowing at 2500 ml/min to the column, connect the sample line to the water inlet of the air stripping apparatus and start the sample water flow into the chamber. Sample water flow rates higher than 125 ml/min during the filling stages are permissible; however, reduce the flow to 125 ml/min once the beryl saddles are submerged. Adjust the water overflow as necessary to maintain the water level just above the beryl saddle packing. The column drain valve should not be used to control the water level, particularly if the overflow is used to obtain the sample water flow rate as described in Section 4.4.5. Periodically check the water rotameter during sampling for gas bubble formation and the bubbler to assure that sufficient air flow is maintained. Record a notation in the data sheet comments section if any gas bubbles are observed in the water rotameter.

6.1.3 After the water level in the stripping chamber has reached the appropriate level and the air and sample water flow rates are set to 2500 ml/min and 125 ml/min, respectively, allow the stripping apparatus system to stabilize for a minimum of 10 minutes before making sample measurements. Longer stabilization time may be required depending on the organic compounds present and the particular water matrix. Before starting the test run record the time required for stabilization, barometric pressure, ambient temperature, and the process water flow rate (i.e., cooling tower water flow rate in gallons per minute).

6.1.4 At two minute intervals, record the FID analyzer measurement, water rotameter flow rate, air rotameter flow rate, and stripping chamber temperature. Adjust the air and water rotameter flows as necessary to maintain the target flows of 2500 ml/min and 125 ml/min, respectively; however, actual measured flows must be recorded. Monitor and record the data for a minimum of ten minutes.

6.1.5 Average the data from Section 6.1.4 and follow the calculations described in Section 7.0 to determine the air strippable concentration and, if applicable, the mass emission rate of VOCs from the water matrix.

6.2 Off-site determination of VOC by GC analysis. Samples of the stripped compound(s) may be taken from the exhaust of the air stripping apparatus and analyzed off-site by gas chromatography for speciated VOC results. It is strongly recommended that multiple samples be collected since a sample container may leak or be lost during shipment to the laboratory.

6.2.1 Connect the water sample supply line to the sample port on the source (i.e., cooling tower return line header). Before connecting the water sample line to the air stripping apparatus water inlet, allow the sample water to flush through the sample line for at least 5 sample line volumes.

6.2.2 With the stripping air flowing at 2500 ml/min to the column, connect the sample port of the water to be analyzed to the water inlet of the air stripping apparatus and start the sample water flow into the chamber. Sample water flow rates higher than 125 ml/min during the filling stages are permissible; however, reduce the flow to 125 ml/min once the beryl saddles are submerged. Adjust the water overflow as necessary to maintain the water level just above the beryl saddle packing. The column drain valve should not be used to control the water level, particularly if the overflow is used to obtain the sample water flow rate as described in Section 4.4.5. Periodically check the water rotameter during sampling for gas bubble formation and the bubbler to assure that sufficient air flow is maintained. Record a notation in the data sheet comments section if any gas bubbles are observed in the water rotameter.

6.2.3 After the water level in the stripping chamber has reached the appropriate level and the air and sample water flow rates are set to 2500 ml/min and 125 ml/min, respectively, allow the stripping apparatus system to stabilize for a minimum of 10 minutes before making sample measurements. Longer stabilization time may be required depending on the organic compounds present and the particular water matrix. Record the time required for stabilization, barometric pressure, ambient temperature, process water flow rate (i.e., cooling tower water flow rate in gallons per minute), and the total VOC concentration measured by the FID analyzer.

6.2.4 Before collection of a canister sample, check and record the initial canister vacuum. If the canister vacuum has changed by more than 50 mm Hg (2 in Hg) from the initial evacuation, then the canister shall be considered as leaking and cannot be used.

6.2.5 Connect the sample canister to the air outlet of the air stripping apparatus with the stripping air flowing and the sample canister valve shut. Excess air flow will be vented through the bubbler.

6.2.6 Open the sample canister valve to begin sampling. During collection, monitor and record the water rotameter flow rate, air rotameter flow rate, and stripping chamber temperature at 2 minute intervals. Adjust the air and water rotameter flows as necessary to maintain the target flows of 2500 ml/min and 125 ml/min, respectively; however, actual measured flows must be recorded. When using an

automated flow controller to regulate the flow rate into the sample canister, such as a critical orifice or mass flow controller, select a flow rate equivalent to 1/10th the canister volume per minute or less. If the canister flow rate is controlled manually (i.e., without a critical orifice or other flow controller), great care must be taken to not sample at a rate over the stripping air flow rate. For manually controlled sampling, adjust the needle valve such that the change in canister vacuum is between 75 to 125 mm Hg (3 to 5 in Hg) per minute. The canister must be only partially filled to help prevent condensation in the canister. Fill the sample canister until the vacuum gauge reads between 125 and 250 mm Hg subambient pressure (-5 and -10 in Hg).

6.2.7 Once sample collection is complete, record the final sample canister vacuum, sample collection time, and sample ID on the data sheet. Connect the FID analyzer to the stripping chamber air exhaust and record the final total VOC concentration.

6.2.8 Where the possibility of condensibles exists in a sample, the sample container may be heated above the stripping chamber temperature to help assure a representative sample analysis. Copies of field data sheets should be included with the samples so the laboratory is aware of the conditions at which the samples were collected.

6.2.9 Upon receipt of the sample(s) and prior to analysis, the laboratory must check and record the vacuum of the canister(s) to determine if any leakage has occurred. Dilution air (meeting the specifications of Section 3.1.1) should only be added to the canister at the laboratory performing the analysis and after the canister vacuum has been recorded.

6.2.10 If Tedlar™ bags are acceptable (see Section 3.5.1) for the target compounds then follow the procedures in Steps 6.2.1 through 6.2.9 with the following exceptions:

6.2.10.1 References to canister vacuum/pressure are not applicable to Tedlar™ bags.

6.2.10.2 Flow rate into the sample bag may be controlled by placing a rotameter downstream of the bubbler and controlling the flow rate of the bypass. Maintain a bypass flow of approximately 1.5 to 2.0 liter/min to fill the bag at approximately 0.5 to 1.0 liter/min.

6.2.10.3 Tedlar™ bags must be at least 10 liter size.

6.2.10.4 Tedlar™ bags shall be filled to approximately 80% capacity during sampling.

6.2.10.5 If sample dilution is required, dilution gas should not be added to the bag. Instead, a known volume of gas may be extracted from the bag and diluted with a known volume of zero air.

6.2.11 The sample(s) obtained for speciation analysis shall be analyzed according to the procedures in either EPA Method 18 (Title 40 Code of Federal Regulations Part 60 Appendix A) or Compendium Method IO-14A (US EPA Compendium of

Methods for Determination of Toxic Organic Compounds in Ambient Air, EPA Document Number 625/R96/010B).

6.2.11.1 The target list of compounds for the analyses shall be determined by permit or regulatory requirements. In the absence of such requirements, a target list shall be generated based on a presurvey sample and analysis by GC/MS. Subject to TCEQ approval, process knowledge may also be used to generate a target list for the analysis.

6.2.11.2 All unidentified compounds detected beyond the target compounds shall be quantified based on an appropriate surrogate, such as propane.

6.2.11.3 Calibration of the GC system for speciation analyses shall be performed according to Section 4.2.

6.2.12 Appropriate chain of custody documents should be completed and accompany all canister and Tedlar™ bag samples, even in cases where a single company performs sampling and analysis.

6.2.13 Average the stripping chamber air and water flow rates and the stripping chamber temperature. Follow the calculations described in Section 7.0 to determine the air strippable concentration and, if applicable, the mass emission rate for each compound in the water matrix.

7.0 Calculations.

7.1 Calculation of the concentration of air strippable compound(s) in the water matrix is by the following equation:

Equation 7-1

$$C = \frac{M \times (P \times 0.03342 \frac{\text{atm}}{\text{inHg}}) \times b \times c}{R \times (T + 273) \times a}$$

Where:

- a = Sample water flow rate, ml/min.
- b = Stripping air flow rate, ml/min.
- c = Concentration of compound in the stripped air, ppmv, from the FID analyzer or GC results. The total VOC result from the FID analyzer may be corrected based on the background check from either the zero air or water blank check, but only from the pretest background check. Post-test background checks may include residual contamination from the current test run. In no case shall the total VOC concentration by the FID analyzer be corrected by more than 1.0 ppmv as methane.
- C = Concentration of air strippable compound in the water matrix, part-per-million by weight (ppmw).

- M = Molecular weight of the compound, g/mol.
 P = Pressure in the stripping chamber, in Hg (typically assumed to be same as atmospheric pressure).
 R = 82.054 ml-atm/mol-K.
 I = Stripping chamber temperature, °C.

The equation is a material balance and the value "C" represents the concentration in ppmw of the compound in the water matrix that was stripped and does not represent the total concentration of the compound in the water matrix prior to air stripping. The concentration of stripped VOC in the air is on a volume basis, but the concentration of strippable VOC in the water is on a weight basis in a liquid phase; so the concentration value will appear much higher for the air phase.

7.2 Molecular weight. For total VOC based on the portable FID analyzer procedure in Section 6.1, calculate total VOC concentration in the water and emission rate based on the molecular weight of methane, unless an alternative reference calibration standard is approved by the TCEQ. For speciated VOC results based on procedures in Section 6.2, calculate individual compound concentrations and emission rates based on the respective compound molecular weights.

7.3 Calculation of VOC mass emission rate(s) from the concentration of strippable VOCs in the water and the water circulation rate:

Equation 7-2

$$E = C \times F \times \frac{60 \text{ min}}{\text{hr}} \times \frac{8.337 \text{ lb}}{\text{gallon}} \times \frac{1}{1,000,000 \text{ ppm}}$$

Where:

- C = Concentration of air strippable compound in the water matrix, part-per-million by weight (ppmw).
 E = Mass emission rate of VOCs, lb/hr.
 F = Water circulation rate of source, gallons/min.

7.4 Calculation of methane concentration in stripped air equivalent to a mass emission rate or action level (see Section 5.5.2.1.3). Equations 7-1 and 7-2 above are combined as follows:

Equation 7-3

$$c' = \frac{R \times (T + 273) \times a}{16.04 \frac{\text{lb}}{\text{mol}} \times (P \times 0.03342 \frac{\text{atm}}{\text{inHg}}) \times b} \times \frac{E' \times 1,000,000 \text{ ppm}}{F \times 8.337 \frac{\text{lb}}{\text{gallon}} \times 60 \frac{\text{min}}{\text{hr}}}$$

Where:

- E' = Allowable mass emission rate of VOCs or action level, lb/hr.
- c' = Methane concentration in the stripped air equivalent to emission limit or action level, ppmv.
- 16.04 = Molecular weight of methane, lb/mol. If a different calibration gas is used for the portable FID analyzer, such as ethylene, use the appropriate molecular weight.

8.0 Use of Portable GC for Field Speciation Analysis. A portable GC, calibrated for a specific suite of compounds, may be used in place of a FID analyzer, in which case the calculations remain the same and the final result is the concentrations of speciated air strippable compounds in the water matrix.

8.1 Setup. Same as Section 5.1, except calibration procedures for field GC analysis will follow Section 4.2.

8.2 Blank/Background Check. Same as Section 5.5.

8.2.1 Note: In some situations where very low detection for specific compounds is required, it may be preferable to check for background using the field GC.

8.3 Sample Measurement. Same as Section 6.1 with the following exceptions:

8.3.1 The FID analyzer can be used during the stabilization period to monitor the air stripping apparatus effluent. Alternatively, the GC can be used to monitor during the stabilization period; however, such an approach may drastically increase the time needed.

8.3.2 A test shall consist of three separate injection/analyses of the stripped gases.

9.0 References

9.1 Vernon, W. D. et. al., "A Device for Measuring Volatile Organic Carbon Emissions from Cooling Towers Water," Journal of Air Pollution Control Association, December, 1981, pages 1280-1282.

9.2 United States Environmental Protection Agency Method 18 "Measurement of Gaseous Organic Compound Emissions by Gas Chromatography," Code of Federal Regulations, Title 40, Part 60, Appendix A, as amended through October 17, 2000 (65 FR 61744).

9.3 United States Environmental Protection Agency Method 21 "Determination of Volatile Organic Compound Leaks," Code of Federal Regulations, Title 40, Part 60, Appendix A, as amended through October 17, 2000 (65 FR 61744).

9.4 United States Environmental Protection Agency Compendium Method TO-14A "Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Specially Prepared Canisters with Subsequent Analysis by Gas Chromatography," Compendium of Methods for Determination of Toxic Organic Compounds in Ambient Air, EPA Document Number 625/R96/010B, January 1999.

Figure 1

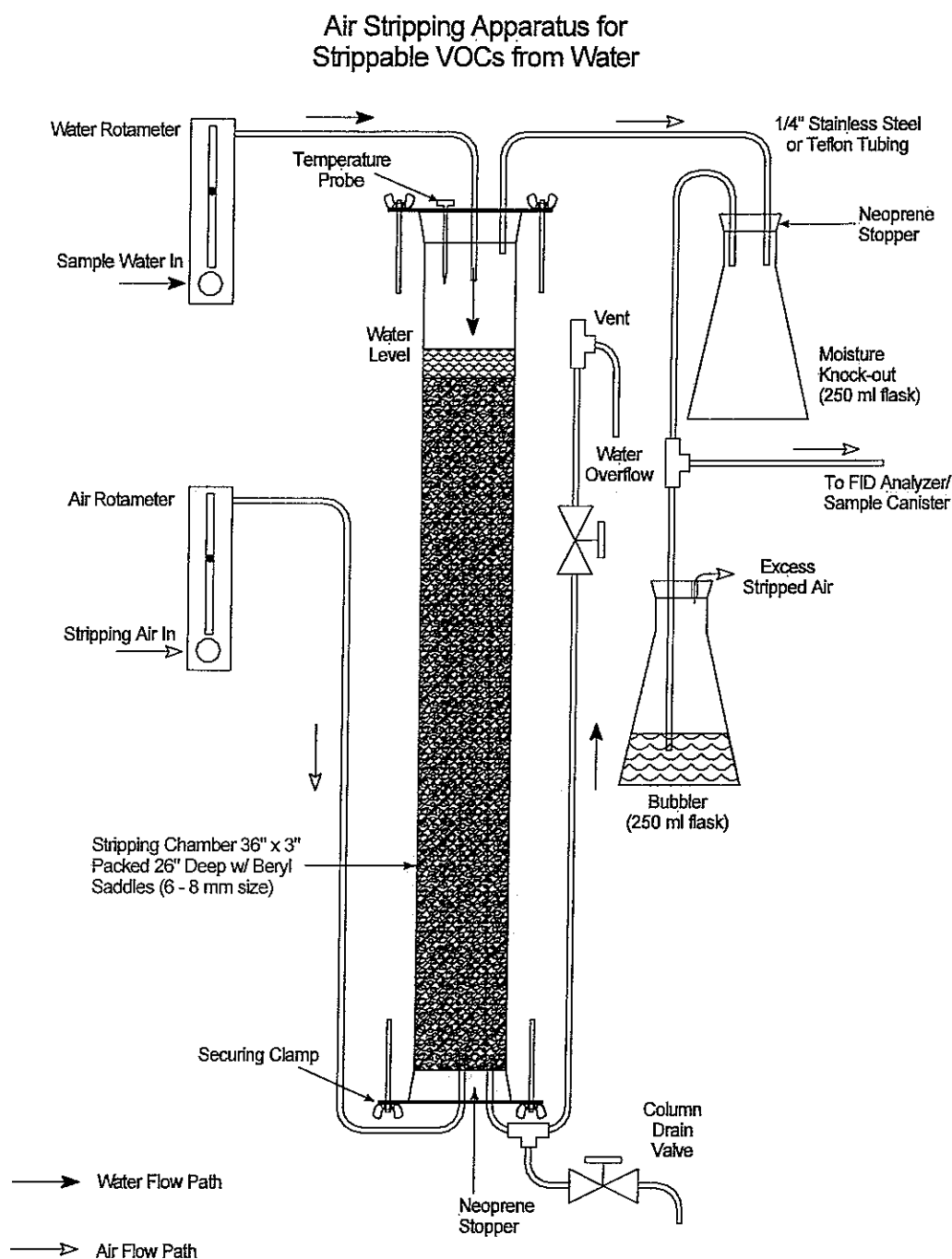
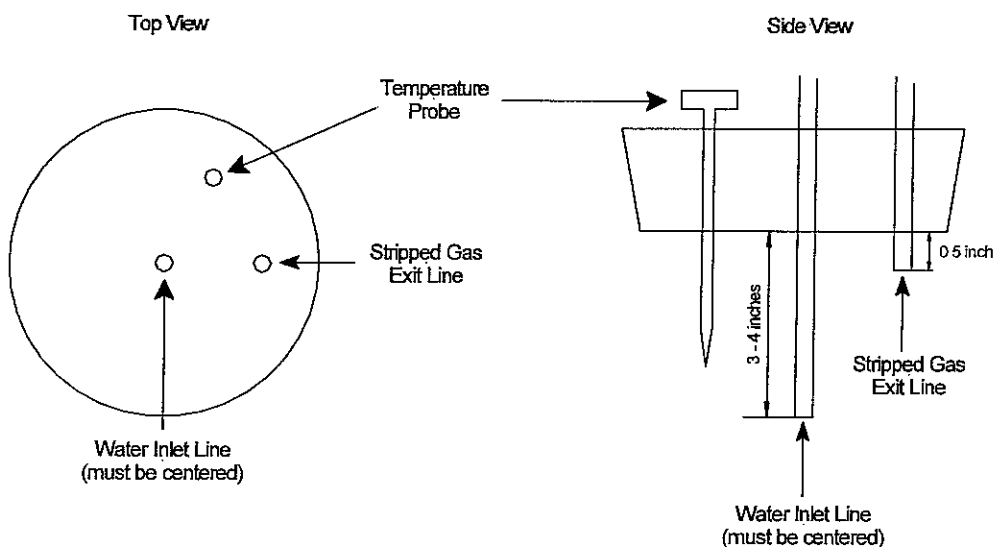


Figure 2
Air Stripping Apparatus
Stripping Chamber End Cap Design

Stripping Chamber Top



Stripping Chamber Bottom

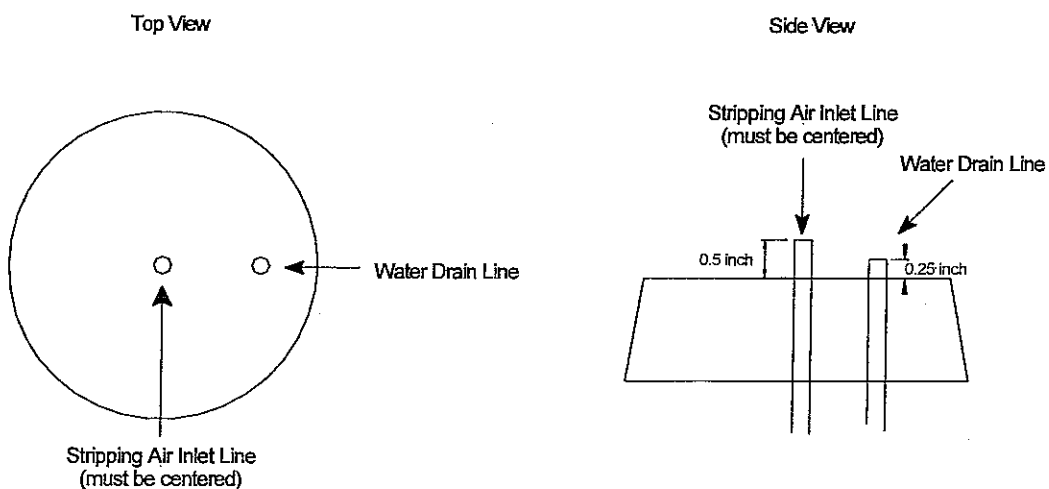


Figure 3
Air Strippable VOCs in Water
FID Analyzer Measurement Data Sheet

Regulated Entity: _____	Regulated Entity No: _____
Air Account No: _____	Instrument Model: _____
Unit Name: _____	Instrument Serial No: _____
EPN/FIN ID No: _____	Operator(s): _____
Process Description: _____	Certified Gas Value: Zero: _____
Date/Time: _____	Mid-level: _____
Barometric Pressure: _____	High-level: _____
Process Water Flow: _____	FID Response Zero: _____
Zero Air Background VOC: _____	Mid-level: _____
Zero Water Background VOC: _____	High-level: _____
Stabilization Time: _____	Expected VOC(s): _____

Time*	Air Stripping Apparatus Data			FID Reading (ppmv, wet)	Comments
	Water Flow (ml/min)	Air Flow (ml/min)	Temp (°C)		
Average					

* Data recording time (after stabilization period), recorded as actual time of day.

bcc: J. W. Cook (JWC2005063)
D. Gorsich
M. C Miller

Mr. Kenneth Cockrill – EFSI

Environmental Files

Environmental Sign-off Sheet(Version 1/05)

To be used for ALL regulatory submittals and retained in the files. Minimum requirement is that the Submitter, Env Representative, and one Team Leader sign-off on the document.

Circulation and
Routing

Enter Routing
Order:

Name of Report: Ethylene MACT Alternate Monitoring Request

Plant/Unit: O&O

Due Date: _____

To be Signed by: Edward L. Gunderson

Submittal Prepared by : EFSI / ETL

This document was prepared by me or under my direction and is true and correct to the best of my knowledge.

Signature: _____ Date: _____

Did the document have legal review and approval: YES NO

Attorney: _____ Date: _____

Firm: _____

The following individuals certify that they have reviewed this document and it is true and correct to the best of their knowledge

<u>Air Lead</u>	<u>Environmental Team Leader</u>
Name: _____	Name: <u>M. C. Miller</u>
Signature: _____	Signature: <u>Michael C. Miller</u>
Date: _____	Date: <u>8/12/05</u>
<u>Team Leader- Environmental Services</u>	<u>Environmental Representative</u>
Name: <u>Jerry W. Cook</u>	Name: _____
Signature: <u>Jerry W. Cook</u>	Signature: _____
Date: <u>8/11/05</u>	Date: _____
<u>Manager, Environmental</u>	<u>Plant Manager</u>
Name: <u>Edward L. Gunderson</u>	Name: _____
Signature: <u>Edward L. Gunderson</u>	Signature: _____
Date: <u>8/12/05</u>	Date: _____
Name: _____	Name: _____
Signature: _____	Signature: _____
Date: _____	Date: _____

LAST
Route to signer of
Document

FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO
Indorama Ventures Oxides LLC

AUTHORIZING THE OPERATION OF
Port Neches Operations
A3 Unit / R&S Area / Utilities Area
Petrochemical Manufacturing

LOCATED AT
Jefferson County, Texas
Latitude 29° 58' 15" Longitude 93° 56' 26"
Regulated Entity Number: RN100219252

This permit is issued in accordance with and subject to the Texas Clean Air Act (TCAA), Chapter 382 of the Texas Health and Safety Code and Title 30 Texas Administrative Code Chapter 122 (30 TAC Chapter 122), Federal Operating Permits. Under 30 TAC Chapter 122, this permit constitutes the permit holder's authority to operate the site and emission units listed in this permit. Operations of the site and emission units listed in this permit are subject to all additional rules or amended rules and orders of the Commission pursuant to the TCAA.

This permit does not relieve the permit holder from the responsibility of obtaining New Source Review authorization for new, modified, or existing facilities in accordance with 30 TAC Chapter 116, Control of Air Pollution by Permits for New Construction or Modification.

The site and emission units authorized by this permit shall be operated in accordance with 30 TAC Chapter 122, the general terms and conditions, special terms and conditions, and attachments contained herein.

This permit shall expire five years from the date of issuance. The renewal requirements specified in 30 TAC § 122.241 must be satisfied in order to renew the authorization to operate the site and emission units.

Permit No: 02288 Issuance Date: June 10, 2021



For the Commission

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General Terms and Conditions

The permit holder shall comply with all terms and conditions contained in 30 TAC § 122.143 (General Terms and Conditions), 30 TAC § 122.144 (Recordkeeping Terms and Conditions), 30 TAC § 122.145 (Reporting Terms and Conditions), and 30 TAC § 122.146 (Compliance Certification Terms and Conditions).

In accordance with 30 TAC § 122.144(1), records of required monitoring data and support information required by this permit, or any applicable requirement codified in this permit, are required to be maintained for a period of five years from the date of the monitoring report, sample, or application unless a longer data retention period is specified in an applicable requirement. The five year record retention period supersedes any less stringent retention requirement that may be specified in a condition of a permit identified in the New Source Review Authorization attachment.

If the permit holder chooses to demonstrate that this permit is no longer required, a written request to void this permit shall be submitted to the Texas Commission on Environmental Quality (TCEQ) by the Responsible Official in accordance with 30 TAC § 122.161(e). The permit holder shall comply with the permit's requirements, including compliance certification and deviation reporting, until notified by the TCEQ that this permit is voided.

The permit holder shall comply with 30 TAC Chapter 116 by obtaining a New Source Review authorization prior to new construction or modification of emission units located in the area covered by this permit.

All reports required by this permit must include in the submittal a cover letter which identifies the following information: company name, TCEQ regulated entity number, air account number (if assigned), site name, area name (if applicable), and Air Permits Division permit number(s).

Special Terms and Conditions:

Emission Limitations and Standards, Monitoring and Testing, and Recordkeeping and Reporting

1. Permit holder shall comply with the following requirements:
 - A. Emission units (including groups and processes) in the Applicable Requirements Summary attachment shall meet the limitations, standards, equipment specifications, monitoring, recordkeeping, reporting, testing, and other requirements listed in the Applicable Requirements Summary attachment to assure compliance with the permit.
 - B. The textual description in the column titled "Textual Description" in the Applicable Requirements Summary attachment is not enforceable and is not deemed as a substitute for the actual regulatory language. The Textual Description is provided for information purposes only.
 - C. A citation listed on the Applicable Requirements Summary attachment, which has a notation [G] listed before it, shall include the referenced section and subsection for all commission rules, or paragraphs for all federal and state regulations and all subordinate paragraphs, subparagraphs and clauses, subclauses, and items contained within the referenced citation as applicable requirements.
 - D. When a grouped citation, notated with a [G] in the Applicable Requirements Summary, contains multiple compliance options, the permit holder must keep records of when each compliance option was used.
 - E. Emission units subject to 40 CFR Part 63, Subpart F, G, H, YY, DDDDD and ZZZZ as identified in the attached Applicable Requirements Summary table are subject to

30 TAC Chapter 113, Subchapter C, §113.110, §113.120, §113.130, §113.560, §113.1130 and §113.1090 respectively, which incorporates the 40 CFR Part 63 Subpart by reference.

2. The permit holder shall comply with the following sections of 30 TAC Chapter 101 (General Air Quality Rules):
 - A. Title 30 TAC § 101.1 (relating to Definitions), insofar as the terms defined in this section are used to define the terms used in other applicable requirements
 - B. Title 30 TAC § 101.3 (relating to Circumvention)
 - C. Title 30 TAC § 101.8 (relating to Sampling), if such action has been requested by the TCEQ
 - D. Title 30 TAC § 101.9 (relating to Sampling Ports), if such action has been requested by the TCEQ
 - E. Title 30 TAC § 101.10 (relating to Emissions Inventory Requirements)
 - F. Title 30 TAC § 101.201 (relating to Emission Event Reporting and Recordkeeping Requirements)
 - G. Title 30 TAC § 101.211 (relating to Scheduled Maintenance, Start-up, and Shutdown Reporting and Recordkeeping Requirements)
 - H. Title 30 TAC § 101.221 (relating to Operational Requirements)
 - I. Title 30 TAC § 101.222 (relating to Demonstrations)
 - J. Title 30 TAC § 101.223 (relating to Actions to Reduce Excessive Emissions)
3. Permit holder shall comply with the following requirements of 30 TAC Chapter 111:
 - A. Visible emissions from stationary vents with a flow rate of less than 100,000 actual cubic feet per minute that are not listed in the Applicable Requirements Summary attachment for 30 TAC Chapter 111, Subchapter A, Division 1, shall not exceed 20% opacity averaged over a six minute period. The permit holder shall comply with the following requirements for stationary vents at the site subject to this standard:
 - (i) Title 30 TAC § 111.111(a)(1)(B) (relating to Requirements for Specified Sources)
 - (ii) Title 30 TAC § 111.111(a)(1)(E)
 - (iii) Title 30 TAC § 111.111(a)(1)(F)(i), (ii), (iii), or (iv)
 - (iv) For emission units with vent emissions subject to 30 TAC § 111.111(a)(1)(B), complying with 30 TAC § 111.111(a)(1)(F)(ii), (iii), or (iv), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146. These periodic monitoring requirements do not apply to vents that are not capable of producing visible emissions such as vents that emit only colorless VOCs; vents from non-fuming liquids; vents that provide passive ventilation, such as plumbing vents; or vent emissions from any other source that

does not obstruct the transmission of light. Vents, as specified in the “Applicable Requirements Summary” attachment, that are subject to the emission limitation of 30 TAC § 111.111(a)(1)(B) are not subject to the following periodic monitoring requirements:

- (1) An observation of stationary vents from emission units in operation shall be conducted at least once during each calendar quarter unless the emission unit is not operating for the entire quarter.
- (2) For stationary vents from a combustion source, if an alternative to the normally fired fuel is fired for a period greater than or equal to 24 consecutive hours, the permit holder shall conduct an observation of the stationary vent for each such period to determine if visible emissions are present. If such period is greater than 3 months, observations shall be conducted once during each quarter. Supplementing the normally fired fuel with natural gas or fuel gas to increase the net heating value to the minimum required value does not constitute creation of an alternative fuel.
- (3) Records of all observations shall be maintained.
- (4) Visible emissions observations of emission units operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of emission units operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions observations shall be made during times when the activities described in 30 TAC § 111.111(a)(1)(E) are not taking place. Visible emissions shall be determined with each stationary vent in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each stationary vent during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.
- (5) Compliance Certification:
 - (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(1) and (a)(1)(B).
 - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(1)(F) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is

determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader.

- (c) Some vents may be subject to multiple visible emission or monitoring requirements. All credible data must be considered when certifying compliance with this requirement even if the observation or monitoring was performed to demonstrate compliance with a different requirement.

B. For visible emissions from a building, enclosed facility, or other structure; the permit holder shall comply with the following requirements:

- (i) Title 30 TAC § 111.111(a)(7)(A) (relating to Requirements for Specified Sources)
- (ii) Title 30 TAC § 111.111(a)(7)(B)(i) or (ii)
- (iii) For a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source subject to 30 TAC § 111.111(a)(7)(A), complying with 30 TAC § 111.111(a)(7)(B)(i) or (ii), and capable of producing visible emissions from, but not limited to, particulate matter, acid gases and NO_x, the permit holder shall also comply with the following periodic monitoring requirements for the purpose of annual compliance certification under 30 TAC § 122.146:
 - (1) An observation of visible emissions from a building containing an air emission source, enclosed facility, or other structure containing or associated with an air emission source which is required to comply with 30 TAC § 111.111(a)(7)(A) shall be conducted at least once during each calendar quarter unless the air emission source or enclosed facility is not operating for the entire quarter.
 - (2) Records of all observations shall be maintained.
 - (3) Visible emissions observations of air emission sources or enclosed facilities operated during daylight hours shall be conducted no earlier than one hour after sunrise and no later than one hour before sunset. Visible emissions observations of air emission sources or enclosed facilities operated only at night must be made with additional lighting and the temporary installation of contrasting backgrounds. Visible emissions shall be determined with each emissions outlet in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 mile, away from each emissions outlet during the observation. For outdoor locations, the observer shall select a position where the sun is not directly in the observer's eyes. When condensed water vapor is present within the plume, as it emerges from the emissions outlet, observations must be made beyond the point in the plume at which condensed water vapor is no longer visible. When water vapor within the plume condenses and becomes visible at a distance from the emissions outlet, the observation shall be evaluated at the outlet prior to condensation of water vapor. A certified opacity reader is not required for visible emissions observations.

- (4) Compliance Certification:
- (a) If visible emissions are not present during the observation, the RO may certify that the source is in compliance with the applicable opacity requirement in 30 TAC § 111.111(a)(7) and (a)(7)(A)
 - (b) However, if visible emissions are present during the observation, the permit holder shall either list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2) or conduct the appropriate opacity test specified in 30 TAC § 111.111(a)(7)(B) as soon as practicable, but no later than 24 hours after observing visible emissions to determine if the source is in compliance with the opacity requirements. If an opacity test is performed and the source is determined to be in compliance, the RO may certify that the source is in compliance with the applicable opacity requirement. However, if an opacity test is performed and the source is determined to be out of compliance, the permit holder shall list this occurrence as a deviation on the next deviation report as required under 30 TAC § 122.145(2). The opacity test must be performed by a certified opacity reader
- C. Certification of opacity readers determining opacities under Method 9 (as outlined in 40 CFR Part 60, Appendix A) to comply with opacity monitoring requirements shall be accomplished by completing the Visible Emissions Evaluators Course, or approved agency equivalent, no more than 180 days before the opacity reading.
- D. Emission limits on nonagricultural processes, except for the steam generators specified in 30 TAC § 111.153, shall comply with the following requirements:
- (i) Emissions of PM from any source may not exceed the allowable rates as required in 30 TAC § 111.151(a) (relating to Allowable Emissions Limits)
 - (ii) Sources with an effective stack height (h_e) less than the standard effective stack height (H_e), must reduce the allowable emission level by multiplying it by $[h_e/H_e]^2$ as required in 30 TAC § 111.151(b)
 - (iii) Effective stack height shall be calculated by the equation specified in 30 TAC § 111.151(c)
- E. Outdoor burning, as stated in 30 TAC § 111.201, shall not be authorized unless the following requirements are satisfied:
- (i) Title 30 TAC § 111.205 (relating to Exception for Fire Training)
 - (ii) Title 30 TAC § 111.207 (relating to Exception for Recreation, Ceremony, Cooking, and Warmth)
 - (iii) Title 30 TAC § 111.219 (relating to General Requirements for Allowable Outdoor Burning)
 - (iv) Title 30 TAC § 111.221 (relating to Responsibility for Consequences of Outdoor Burning)

4. For storage vessels maintaining working pressure as specified in 30 TAC Chapter 115, Subchapter B, Division 1: "Storage of Volatile Organic Compounds," the permit holder shall comply with the requirements of 30 TAC § 115.112(a)(1).
5. For industrial wastewater specified in 30 TAC Chapter 115, Subchapter B, the permit holder shall comply with the following requirements for wastewater drains, junction boxes, lift stations and weirs:
 - A. Title 30 TAC § 115.142 (relating to Control Requirements)
 - B. Title 30 TAC § 115.142(1)(A) - (D) (relating to Control Requirements)
 - C. Title 30 TAC § 115.142(1)(E) and (F) (relating to Control Requirements)
 - D. Title 30 TAC § 115.145 (relating to Approved Test Methods)
 - E. Title 30 TAC § 115.146 (relating to Recordkeeping Requirements)
 - F. Title 30 TAC § 115.148 (relating to Determination of Wastewater Characteristics)
6. Permit holder shall comply with the following 30 TAC Chapter 115, Subchapter C requirements:
 - A. When filling stationary gasoline storage vessels (Stage I) for motor vehicle fuel dispensing facilities, constructed prior to November 15, 1992, with transfers to stationary storage tanks located at a facility which has dispensed no more than 10,000 gallons of gasoline in any calendar month after January 1, 1991, the permit holder shall comply with the following requirements specified in 30 TAC Chapter 115, Subchapter C:
 - (i) Title 30 TAC § 115.222(3) (relating to Control Requirements), as it applies to liquid gasoline leaks, visible vapors, or significant odors
 - (ii) Title 30 TAC § 115.222(6) (relating to Control Requirements)
 - (iii) Title 30 TAC § 115.224(1) (relating to Inspection Requirements), as it applies to liquid gasoline leaks, visible vapors, or significant odors
 - (iv) Title 30 TAC § 115.226(2)(B) (relating to Recordkeeping Requirements)
7. The permit holder shall comply with the following requirements of 30 TAC Chapter 115, Subchapter F, Division 3, Degassing of Storage Tanks, Transport Vessels and Marine Vessels:
 - A. For degassing of stationary VOC storage tanks, the permit holder shall comply with the following requirements:
 - (i) Title 30 TAC § 115.541(a) - (c) (relating to Emission Specifications)
 - (ii) Title 30 TAC § 115.541(f) (relating to Emission Specifications), for floating roof storage tanks
 - (iii) Title 30 TAC § 115.542(a) and (a)(1), (a)(2), (a)(3) or (a)(4) (relating to Control Requirements). Where the requirements of 30 TAC Chapter 115, Subchapter F contain multiple compliance options, the permit holder shall keep records of when each compliance option was used.
 - (iv) Title 30 TAC § 115.542(b) - (d), (relating to Control Requirements)

- (v) Title 30 TAC § 115.543 (relating to Alternate Control Requirements)
- (vi) Title 30 TAC § 115.544(a)(1) and (a)(2) (relating to Inspection, Monitoring, and Testing Requirements), for inspections
- (vii) Title 30 TAC § 115.544(b) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring
- (viii) Title 30 TAC § 115.544(b)(1) and (b)(2) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring of control devices
- (ix) Title 30 TAC § 115.544(b)(2)(A) - (J) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring (as appropriate to the control device)
- (x) Title 30 TAC § 115.544(b)(3), (b)(4) and (b)(6) (relating to Inspection, Monitoring, and Testing Requirements), for VOC concentration or lower explosive limit threshold monitoring
- (xi) Title 30 TAC § 115.544(c), and (c)(1) - (c)(3) (relating to Inspection, Monitoring, and Testing Requirements), for testing of control devices used to comply with 30 TAC § 115.542(a)(1)
- (xii) Title 30 TAC § 115.545(1) - (7), (9) - (11) and (13) (relating to Approved Test Methods)
- (xiii) Title 30 TAC § 115.546(a), (a)(1) and (a)(3) (relating to Recordkeeping and Notification Requirements), for recordkeeping
- (xiv) Title 30 TAC § 115.546(a)(2) and (a)(2)(A) - (J) (relating to Recordkeeping and Notification Requirements), for recordkeeping (as appropriate to the control device)
- (xv) Title 30 TAC § 115.546(a)(4) (relating to Recordkeeping and Notification Requirements), for recordkeeping of testing of control devices used to comply with 30 TAC § 115.542(a)(1)
- (xvi) Title 30 TAC § 115.547(4) (relating to Exemptions)

B. For the degassing of all transport vessels with a nominal capacity of 8,000 gallons or more, the permit holder shall comply with the following requirements:

- (i) Title 30 TAC § 115.541(a) - (c) and (d) (relating to Emission Specifications)
- (ii) Title 30 TAC § 115.542(a) and (a)(1), (a)(2), (a)(3) or (a)(4) (relating to Control Requirements). Where the requirements of 30 TAC Chapter 115, Subchapter F contain multiple compliance options, the permit holder shall keep records of when each compliance option was used.
- (iii) Title 30 TAC § 115.542(b), (c) and (e) (relating to Control Requirements)
- (iv) Title 30 TAC § 115.543 (relating to Alternate Control Requirements)
- (v) Title 30 TAC § 115.544(a)(1) and (a)(2) (relating to Inspection, Monitoring, and Testing Requirements), for inspections

- (vi) Title 30 TAC § 115.544(b) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring
- (vii) Title 30 TAC § 115.544(b)(1) and (b)(2) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring of control devices
- (viii) Title 30 TAC § 115.544(b)(2)(A) - (J) (relating to Inspection, Monitoring, and Testing Requirements), for monitoring (as appropriate to the control device)
- (ix) Title 30 TAC § 115.544(b)(3), (b)(4) and (b)(6) (relating to Inspection, Monitoring, and Testing Requirements), for VOC concentration or lower explosive limit threshold monitoring
- (x) Title 30 TAC § 115.544(c), and (c)(1) - (c)(3) (relating to Inspection, Monitoring, and Testing Requirements), for testing of control devices used to comply with 30 TAC § 115.542(a)(1)
- (xi) Title 30 TAC § 115.545(1) - (11) and (13) (relating to Approved Test Methods)
- (xii) Title 30 TAC § 115.546(a), (a)(1) and (a)(3) (relating to Recordkeeping and Notification Requirements), for recordkeeping
- (xiii) Title 30 TAC § 115.546(a)(2) and (a)(2)(A) - (J) (relating to Recordkeeping and Notification Requirements), for recordkeeping (as appropriate to the control device)
- (xiv) Title 30 TAC § 115.546(a)(4) (relating to Recordkeeping and Notification Requirements), for recordkeeping of testing of control devices used to comply with 30 TAC § 115.542(a)(1)

8. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 60, unless otherwise stated in the applicable subpart:

- A. Title 40 CFR § 60.7 (relating to Notification and Recordkeeping)
- B. Title 40 CFR § 60.8 (relating to Performance Tests)
- C. Title 40 CFR § 60.11 (relating to Compliance with Standards and Maintenance Requirements)
- D. Title 40 CFR § 60.12 (relating to Circumvention)
- E. Title 40 CFR § 60.13 (relating to Monitoring Requirements)
- F. Title 40 CFR § 60.14 (relating to Modification)
- G. Title 40 CFR § 60.15 (relating to Reconstruction)
- H. Title 40 CFR § 60.19 (relating to General Notification and Reporting Requirements)

9. The permit holder shall comply with the following requirements for units subject to any subpart of 40 CFR Part 61, unless otherwise stated in the applicable subpart:

- A. Title 40 CFR § 61.05 (relating to Prohibited Activities)

- B. Title 40 CFR § 61.07 (relating to Application for Approval of Construction or Modification)
 - C. Title 40 CFR § 61.09 (relating to Notification of Start-up)
 - D. Title 40 CFR § 61.10 (relating to Source Reporting and Request Waiver)
 - E. Title 40 CFR § 61.12 (relating to Compliance with Standards and Maintenance Requirements)
 - F. Title 40 CFR § 61.13 (relating to Emissions Tests and Waiver of Emission Tests)
 - G. Title 40 CFR § 61.14 (relating to Monitoring Requirements)
 - H. Title 40 CFR § 61.15 (relating to Modification)
 - I. Title 40 CFR § 61.19 (relating to Circumvention)
10. For facilities where total annual benzene quantity from waste is greater than or equal to 10 megagrams per year and subject to emission standards in 40 CFR Part 61, Subpart FF, the permit holder shall comply with the following requirements:
- A. Title 40 CFR § 61.342(c)(1)(i) - (iii) (relating to Standards: General)
 - B. Title 40 CFR § 61.342(c)(2) (relating to Standards: General)
 - C. For exempting waste streams:
 - (i) Title 40 CFR § 61.342(c)(3)(i) (relating to Standards: General)
 - (ii) Title 40 CFR § 61.342(c)(3)(ii)(A) - (C) (relating to Standards: General)
 - D. Title 40 CFR § 61.342(f)(1), and (2) (relating to Standards: General)
 - E. Title 40 CFR § 61.342(g) (relating to Standards: General)
 - F. Title 40 CFR § 61.350(a) and (b) (relating to Standards: Delay of Repair)
 - G. Title 40 CFR § 61.355(a)(1)(iii), (a)(2), (a)(6), (b), and (c)(1) - (3) (relating to Test Methods, Procedures, and Compliance Provisions)
 - H. Title 40 CFR § 61.355(j) (relating to Test Methods, Procedures, and Compliance Provisions), for calculation procedures
 - I. Title 40 CFR § 61.356(a) (relating to Recordkeeping Requirements)
 - J. Title 40 CFR § 61.356(b), and (b)(1) (relating to Recordkeeping Requirements)
 - K. Title 40 CFR § 61.356(b)(2)(i) - (ii) (relating to Recordkeeping Requirements)
 - L. Title 40 CFR § 61.356(b)(5) (relating to Recordkeeping Requirements)
 - M. Title 40 CFR § 61.356(c) (relating to Recordkeeping Requirements)
 - N. Title 40 CFR § 61.357(a), (d)(1), (d)(2) (d)(6) and (d)(8) (relating to Reporting Requirements)

- O. Title 40 CFR § 61.357(d)(3) (relating to Reporting Requirements)
 - P. Waste generated by remediation activities at these facilities are subject to the requirements identified under 40 CFR § 61.342 for treatment and management of waste
11. For facilities with containers subject to emission standards in 40 CFR Part 61, Subpart FF, the permit holder shall comply with the following requirements:
- A. Title 40 CFR § 61.345(a)(1) - (3), (b), and (c) (relating to Standards: Containers)
 - B. Title 40 CFR § 61.355(h) (relating to Test Methods, Procedures and Compliance Provisions)
 - C. Title 40 CFR § 61.356(g) (relating to Recordkeeping Requirements)
 - D. Title 40 CFR § 61.356(h) (relating to Recordkeeping Requirements)
12. For facilities with individual drain systems subject to emission standards in 40 CFR Part 61, Subpart FF, the permit holder shall comply with the following requirements:
- A. Title 40 CFR § 61.346(a)(1)(i)(A), (B), (ii), (2), and (3) (relating to Standards: Individual Drain Systems)
 - B. Title 40 CFR § 61.346(b)(1), (2), (2)(i), (3), (4)(i) - (iv), and (5) (relating to Standards: Individual Drain Systems)
 - C. Title 40 CFR § 61.346(b)(2)(ii)(A) (relating to Standards: Individual Drain Systems), for junction boxes
 - D. Title 40 CFR § 61.346(b)(2)(ii)(B) (relating to Standards: Individual Drain Systems), for junction boxes
 - E. Title 40 CFR § 61.355(h) (relating to Test Methods, Procedures and Compliance Provisions)
 - F. Title 40 CFR § 61.356(g) (relating to Recordkeeping Requirements)
 - G. Title 40 CFR § 61.356(h) (relating to Recordkeeping Requirements)
13. The permit holder shall comply with the requirements of 30 TAC Chapter 113, Subchapter C, § 113.100 for units subject to any subpart of 40 CFR Part 63, unless otherwise stated in the applicable subpart.
14. For the chemical manufacturing facilities with a 40 CFR Part 63, Subpart G Group 1 or Group 2 wastewater streams that are also subject to 40 CFR Part 61, Subpart FF, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):
- A. Title 40 CFR § 63.110(e)(1) (relating to Applicability), for 40 CFR Part 63, Subpart G applicability to Group 1 or 2 Wastewater Streams
15. For the chemical manufacturing facilities with a 40 CFR Part 63, Subpart G Group 2 wastewater stream, the permit holder shall comply with (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):

- A. Title 40 CFR § 63.132(a), (a)(1), and (a)(1)(i) (relating to Process Wastewater Provisions - General)
 - B. Title 40 CFR § 63.146(b)(1) (relating to Process Wastewater Provisions - Reporting)
 - C. Title 40 CFR § 63.147(b)(8) (relating to Process Wastewater Provisions - Recordkeeping)
16. For the chemical manufacturing facilities subject to leak detection requirements in 40 CFR Part 63, Subpart G, the permit holder shall comply with the following requirements (Title 30 TAC Chapter 113, Subchapter C, § 113.120 incorporated by reference):
- A. General Leak Detection Requirements:
 - (i) Title 40 CFR § 63.148(d)(1) - (3), and (e) (relating to Leak Inspection Provisions)
 - (ii) Title 40 CFR § 63.148(c), (g), (g)(2), (h), and (h)(2) (relating to Leak Inspection Provisions), for monitoring and testing requirements
 - (iii) Title 40 CFR §§ 63.148(g)(2), (h)(2), (i)(1) - (2), (i)(4)(i) - (viii), (i)(5), and 63.152(a)(1) - (5), for recordkeeping requirements
 - (iv) Title 40 CFR §§ 63.148(j), 63.151(a)(6)(i) - (iii), (b)(1) - (2), (j)(1) - (3), 63.152(a)(1) - (5), (b), (b)(1)(i) - (ii), and (b)(4), for reporting requirements
 - B. For closed vent system or vapor collection systems constructed of hard piping:
 - (i) Title 40 CFR § 63.148(b)(1)(ii) (relating to Leak Inspection Provisions), for monitoring and testing requirements
 - (ii) Title 40 CFR § 63.148(i)(6) (relating to Leak Inspection Provisions), for recordkeeping requirements
 - C. For facilities not operating flow indicators:
 - (i) Title 40 CFR § 63.148(f)(2) (relating to Leak Inspection Provisions), for monitoring and testing requirements
 - (ii) Title 40 CFR § 63.148(i)(3)(ii) (relating to Leak Inspection Provisions), for recordkeeping requirements
 - (iii) Title 40 CFR § 63.148(j)(3) (relating to Leak Inspection Provisions), for reporting requirements
17. For ethylene process facilities subject to 40 CFR Part 63, Subpart YY with benzene laden waste streams and total annual benzene quantity from the facility of less than 10 megagrams per year the permit holder shall comply with the following requirements for control of spent caustic and dilution stream blowdown waste streams as specified in 40 CFR § 63.1095(b)(1) (Title 30 TAC Chapter 113, Subchapter C, § 113.560 incorporated by reference):
- A. For facilities with waste managed in containers the permit holder shall comply with the following requirements:
 - (i) Title 40 CFR § 61.345(a)(1) - (3), (b), and (c) (relating to Standards: Containers)

- (ii) Title 40 CFR § 61.355(h) (relating to Test Methods, Procedures and Compliance Provisions)
 - (iii) Title 40 CFR § 61.356(g) (relating to Recordkeeping Requirements)
 - (iv) Title 40 CFR § 61.356(h) (relating to Recordkeeping Requirements)
- B. For facilities with waste managed in individual drain systems the permit holder shall comply with the following requirements:
- (i) Title 40 CFR § 61.346(a)(1)(i)(A), (B), (ii), (2), and (3) (relating to Standards: Individual Drain Systems)
 - (ii) Title 40 CFR § 61.346(b)(1), (2), (2)(i), (3), (4)(i) - (iv), and (5) (relating to Standards: Individual Drain Systems)
 - (iii) Title 40 CFR § 61.346(b)(2)(ii)(A) (relating to Standards: Individual Drain Systems), for junction boxes
 - (iv) Title 40 CFR § 61.346(b)(2)(ii)(B) (relating to Standards: Individual Drain Systems), for junction boxes
 - (v) Title 40 CFR § 61.355(h) (relating to Test Methods, Procedures and Compliance Provisions)
 - (vi) Title 40 CFR § 61.356(g) (relating to Recordkeeping Requirements)
 - (vii) Title 40 CFR § 61.356(h) (relating to Recordkeeping Requirements)

Additional Monitoring Requirements

18. The permit holder shall comply with the periodic monitoring requirements as specified in the attached "Periodic Monitoring Summary" upon issuance of the permit. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the permit holder shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. The permit holder may elect to collect monitoring data on a more frequent basis and average the data, consistent with the averaging time specified in the "Periodic Monitoring Summary," for purposes of determining whether a deviation has occurred. However, the additional data points must be collected on a regular basis. In no event shall data be collected and used in particular instances to avoid reporting deviations. Deviations shall be reported according to 30 TAC § 122.145 (Reporting Terms and Conditions).

New Source Review Authorization Requirements

19. Permit holder shall comply with the requirements of New Source Review authorizations issued or claimed by the permit holder for the permitted area, including permits, permits by rule, standard permits, flexible permits, special permits, permits for existing facilities including Voluntary Emissions Reduction Permits and Electric Generating Facility Permits issued under 30 TAC Chapter 116, Subchapter I, or special exemptions referenced in the New Source Review Authorization References attachment. These requirements:
- A. Are incorporated by reference into this permit as applicable requirements

- B. Shall be located with this operating permit
 - C. Are not eligible for a permit shield
20. The permit holder shall comply with the general requirements of 30 TAC Chapter 106, Subchapter A or the general requirements, if any, in effect at the time of the claim of any PBR.
 21. The permit holder shall maintain records to demonstrate compliance with any emission limitation or standard that is specified in a permit by rule (PBR) or Standard Permit listed in the New Source Review Authorizations attachment. The records shall yield reliable data from the relevant time period that are representative of the emission unit's compliance with the PBR or Standard Permit. These records may include, but are not limited to, production capacity and throughput, hours of operation, safety data sheets (SDS), chemical composition of raw materials, speciation of air contaminant data, engineering calculations, maintenance records, fugitive data, performance tests, capture/control device efficiencies, direct pollutant monitoring (CEMS, COMS, or PEMS), or control device parametric monitoring. These records shall be made readily accessible and available as required by 30 TAC § 122.144. Any monitoring or recordkeeping data indicating noncompliance with the PBR or Standard Permit shall be considered and reported as a deviation according to 30 TAC § 122.145 (Reporting Terms and Conditions).

Compliance Requirements

22. The permit holder shall certify compliance in accordance with 30 TAC § 122.146. The permit holder shall comply with 30 TAC § 122.146 using at a minimum, but not limited to, the continuous or intermittent compliance method data from monitoring, recordkeeping, reporting, or testing required by the permit and any other credible evidence or information. The certification period may not exceed 12 months and the certification must be submitted within 30 days after the end of the period being certified.
23. Permit holder shall comply with the following 30 TAC Chapter 117 requirements:
 - A. The permit holder shall comply with the compliance schedules and submit written notification to the TCEQ Executive Director as required in 30 TAC Chapter 117, Subchapter H, Division 1:
 - (i) For sources in the Beaumont-Port Arthur Nonattainment area, 30 TAC § 117.9000
 - B. The permit holder shall comply with the Initial Control Plan unit listing requirement in 30 TAC § 117.150(c) and (c)(1).
24. Use of Emission Credits to comply with applicable requirements:
 - A. Unless otherwise prohibited, the permit holder may use emission credits to comply with the following applicable requirements listed elsewhere in this permit:
 - (i) Title 30 TAC Chapter 115
 - (ii) Title 30 TAC Chapter 117
 - (iii) Offsets for Title 30 TAC Chapter 116
 - B. The permit holder shall comply with the following requirements in order to use the emission credits to comply with the applicable requirements:

- (i) The permit holder must notify the TCEQ according to 30 TAC § 101.306(c)(2)
- (ii) The emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 1
- (iii) The executive director has approved the use of the credit according to 30 TAC § 101.306(c)(2)
- (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.302(g) and 30 TAC Chapter 122
- (v) Title 30 TAC § 101.305 (relating to Emission Reductions Achieved Outside the United States)

25. Use of Discrete Emission Credits to comply with the applicable requirements:

- A. Unless otherwise prohibited, the permit holder may use discrete emission credits to comply with the following applicable requirements listed elsewhere in this permit:
 - (i) Title 30 TAC Chapter 115
 - (ii) Title 30 TAC Chapter 117
 - (iii) If applicable, offsets for Title 30 TAC Chapter 116
 - (iv) Temporarily exceed state NSR permit allowables
- B. The permit holder shall comply with the following requirements in order to use the credit to comply with the applicable requirements:
 - (i) The permit holder must notify the TCEQ according to 30 TAC § 101.376(d)
 - (ii) The discrete emission credits to be used must meet all the geographic, timeliness, applicable pollutant type, and availability requirements listed in 30 TAC Chapter 101, Subchapter H, Division 4
 - (iii) The executive director has approved the use of the discrete emission credits according to 30 TAC § 101.376(d)(1)(A)
 - (iv) The permit holder keeps records of the use of credits towards compliance with the applicable requirements in accordance with 30 TAC § 101.372(h) and 30 TAC Chapter 122
 - (v) Title 30 TAC § 101.375 (relating to Emission Reductions Achieved Outside the United States)

Risk Management Plan

26. For processes subject to 40 CFR Part 68 and specified in 40 CFR § 68.10, the permit holder shall comply with the requirements of the Accidental Release Prevention Provisions in 40 CFR Part 68. The permit holder shall submit to the appropriate agency either a compliance schedule for meeting the requirements of 40 CFR Part 68 by the date provided in 40 CFR § 68.10(a), or as part of the compliance certification submitted under this permit, a certification statement that the

source is in compliance with all requirements of 40 CFR Part 68, including the registration and submission of a risk management plan.

Protection of Stratospheric Ozone

27. Permit holders at a site subject to Title VI of the FCAA Amendments shall meet the following requirements for protection of stratospheric ozone:
- A. Any on site servicing, maintenance, and repair on refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants or non-exempt substitutes shall be conducted in accordance with 40 CFR Part 82, Subpart F. Permit holders shall ensure that repairs on or refrigerant removal from refrigeration and nonmotor vehicle air-conditioning appliances using ozone-depleting refrigerants are performed only by properly certified technicians using certified equipment. Records shall be maintained as required by 40 CFR Part 82, Subpart F.
 - B. The permit holder shall comply with 40 CFR Part 82, Subpart H related to Halon Emissions Reduction requirements as specified in 40 CFR § 82.250 - § 82.270 and the applicable Part 82 Appendices.

Permit Location

28. The permit holder shall maintain a copy of this permit and records related to requirements listed in this permit on site.

Permit Shield (30 TAC § 122.148)

29. A permit shield is granted for the emission units, groups, or processes specified in the attached "Permit Shield." Compliance with the conditions of the permit shall be deemed compliance with the specified potentially applicable requirements or specified potentially applicable state-only requirements listed in the attachment "Permit Shield." Permit shield provisions shall not be modified by the executive director until notification is provided to the permit holder. No later than 90 days after notification of a change in a determination made by the executive director, the permit holder shall apply for the appropriate permit revision to reflect the new determination. Provisional terms are not eligible for this permit shield. Any term or condition, under a permit shield, shall not be protected by the permit shield if it is replaced by a provisional term or condition or the basis of the term and condition changes.

Attachments

Applicable Requirements Summary

Additional Monitoring Requirements

Permit Shield

New Source Review Authorization References

Applicable Requirements Summary

Unit Summary 18

Applicable Requirements Summary 31

Note: A “none” entry may be noted for some emission sources in this permit’s “Applicable Requirements Summary” under the heading of “Monitoring and Testing Requirements” and/or “Recordkeeping Requirements” and/or “Reporting Requirements.” Such a notation indicates that there are no requirements for the indicated emission source as identified under the respective column heading(s) for the stated portion of the regulation when the emission source is operating under the conditions of the specified SOP Index Number. However, other relevant requirements pursuant to 30 TAC Chapter 122 including Recordkeeping Terms and Conditions (30 TAC § 122.144), Reporting Terms and Conditions (30 TAC § 122.145), and Compliance Certification Terms and Conditions (30 TAC § 122.146) continue to apply.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
A3CA31A	STATIONARY TURBINES	N/A	R7IC11101X	30 TAC Chapter 117, Subchapter B	No changing attributes.
A3CA31A	STATIONARY TURBINES	N/A	60GG-005Y	40 CFR Part 60, Subpart GG	No changing attributes.
A3FA3103	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5121-3	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
A3FA3103	DISTILLATION OPERATIONS	N/A	60NNN-047	40 CFR Part 60, Subpart NNN	Subpart NNN Control Device = Boiler or process heater design heat input capacity less than 44 MW (150 MMBtu/hr).
A3FA3103	DISTILLATION OPERATIONS	N/A	60NNN-048	40 CFR Part 60, Subpart NNN	Subpart NNN Control Device = Boiler or process heater design heat input capacity greater than or equal to 44 MW (150 MMBtu/hr).
A3FA3205A	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5121-6	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
A3FA3205B	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5121-6	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
A3FA357	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5121-6	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
A3FO11	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R5121-6	30 TAC Chapter 115, Vent Gas Controls	No changing attributes.
A3FUG	FUGITIVE EMISSION UNITS	N/A	R5352-ALL	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	No changing attributes.
A3FUG	FUGITIVE EMISSION	N/A	61V-ALL	40 CFR Part 61, Subpart V	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
	UNITS				
A3FUG	FUGITIVE EMISSION UNITS	N/A	60VV-63YY	40 CFR Part 63, Subpart YY	No changing attributes.
A3FUG	FUGITIVE EMISSION UNITS	N/A	63YY-F	40 CFR Part 63, Subpart YY	No changing attributes.
A3HA35	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-606	30 TAC Chapter 117, Subchapter B	No changing attributes.
A3TA329	STORAGE TANKS/VESSELS	N/A	R5112-020	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
A3TA339	STORAGE TANKS/VESSELS	N/A	R5112-005	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
A3TA346	STORAGE TANKS/VESSELS	N/A	R5112-027	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
A3WASTE	CLOSED VENT SYSTEM AND CONTROL DEVICE	N/A	63YY-W	40 CFR Part 63, Subpart YY	No changing attributes.
CG1	STATIONARY TURBINES	N/A	R7ICI1102X	30 TAC Chapter 117, Subchapter B	No changing attributes.
CG1	STATIONARY TURBINES	N/A	60GG-006	40 CFR Part 60, Subpart GG	No changing attributes.
CG2	STATIONARY TURBINES	N/A	R7ICI1102X	30 TAC Chapter 117, Subchapter B	No changing attributes.
CG2	STATIONARY TURBINES	N/A	60GG-006	40 CFR Part 60, Subpart GG	No changing attributes.
CT-1	INDUSTRIAL PROCESS COOLING TOWERS	N/A	63YY-H	40 CFR Part 63, Subpart YY	No changing attributes.
CT-4	INDUSTRIAL PROCESS COOLING TOWERS	N/A	63YY-H	40 CFR Part 63, Subpart YY	No changing attributes.
FDU-1	STORAGE	N/A	R5112-00a	30 TAC Chapter 115,	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
	TANKS/VESSELS			Storage of VOCs	
GRPA3PH1	PROCESS HEATERS/FURNACES	A3HA31A, A3HA31B, A3HA31C, A3HA31D, A3HA31F, A3HA31G, A3HA31H, A3HA31J	R7ICI-503	30 TAC Chapter 117, Subchapter B	No changing attributes.
GRPA3PH1	PROCESS HEATERS/FURNACES	A3HA31A, A3HA31B, A3HA31C, A3HA31D, A3HA31F, A3HA31G, A3HA31H, A3HA31J	63DDDDD-63YY	40 CFR Part 63, Subpart DDDDD	No changing attributes.
GRPA3PH1	CLOSED VENT SYSTEM AND CONTROL DEVICE	A3HA31A, A3HA31B, A3HA31C, A3HA31D, A3HA31E, A3HA31F, A3HA31G, A3HA31H, A3HA31J	63YY	40 CFR Part 63, Subpart YY	No changing attributes.
GRPUTIC1	SRIC ENGINES	PU-10, PU-14A, PU- 14B	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
GRPUTTK1	STORAGE TANKS/VESSELS	880789, 961010, A3FA3215, MCST-3, R-CC-4T, R-S-42T, R-S-53T, T-L- 797455	R5112-00a	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
P-Q-108	SRIC ENGINES	N/A	117-EMERG	30 TAC Chapter 117, Subchapter B	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
P-Q-108	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
PROA3WW	TREATMENT PROCESS	N/A	61FFTP-WW1a	40 CFR Part 61, Subpart FF	Fuel Gas System = All gaseous vent streams from the treatment process or wastewater treatment system are routed to a fuel gas system.
PROA3WW	TREATMENT PROCESS	N/A	61FFTP-WW1b	40 CFR Part 61, Subpart FF	Less Than Atmospheric = A cover and closed-vent system are operated such that the treatment process or wastewater system unit is maintained at ambient atmospheric pressure., Closed-Vent System and Control Device = A closed-vent system and control device is used., AMOC = No alternate means of compliance (AMOC) to meet the requirements of 40 CFR § 61.349 for a closed-vent system and control device is used., By-Pass Line = The closed-vent system contains a by-pass line that could divert the vent stream away from the control device., By-Pass Line Valve = A car-seal or lock and key configuration is used to secure the by-pass line valve in the closed position., Control Device Type/Operation = Flare., Fuel Gas System = Not all gaseous vent streams from the treatment process or wastewater treatment system are routed to a fuel gas system.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
PRORSHON	CHEMICAL MANUFACTURING PROCESS	N/A	63F-002	40 CFR Part 63, Subpart F	No changing attributes.
PU-11	SRIC ENGINES	N/A	117-EMERG	30 TAC Chapter 117, Subchapter B	No changing attributes.
PU-11	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
R-CC-4	SRIC ENGINES	N/A	117-EMERG	30 TAC Chapter 117, Subchapter B	No changing attributes.
R-CC-4	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
R-S-42	SRIC ENGINES	N/A	117-EMERG	30 TAC Chapter 117, Subchapter B	No changing attributes.
R-S-42	SRIC ENGINES	N/A	63ZZZZ	40 CFR Part 63, Subpart ZZZZ	No changing attributes.
R-S-53	SRIC ENGINES	N/A	117-EMERG	30 TAC Chapter 117, Subchapter B	No changing attributes.
RRFUG	LOADING/UNLOADING OPERATIONS	N/A	R5211-018	30 TAC Chapter 115, Loading and Unloading of VOC	No changing attributes.
RSELRTRKW	LOADING/UNLOADING OPERATIONS	N/A	R5211-00c	30 TAC Chapter 115, Loading and Unloading of VOC	True Vapor Pressure = True vapor pressure greater than or equal to 0.5 psia., Daily Throughput = Loading greater than or equal to 20,000 gallons per day., Chapter 115 Control Device Type = No control device., Control Options = Vapor balance system., Vapor Tight = Not all liquid and vapor lines are equipped with fittings which make

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					vapor-tight connections that close automatically when disconnected.
RSELRTRKW	LOADING/UNLOADING OPERATIONS	N/A	R5211-018	30 TAC Chapter 115, Loading and Unloading of VOC	True Vapor Pressure = True vapor pressure less than 0.5 psia.
RSELRTRKW	LOADING/UNLOADING OPERATIONS	N/A	63GL-0g2a	40 CFR Part 63, Subpart G	No changing attributes.
RSELRTRKW	LOADING/UNLOADING OPERATIONS	N/A	63YY-L	40 CFR Part 63, Subpart YY	No changing attributes.
RSELRVNTTW	LOADING/UNLOADING OPERATIONS	N/A	R5211-018	30 TAC Chapter 115, Loading and Unloading of VOC	No changing attributes.
RSET010	STORAGE TANKS/VESSELS	N/A	R5112-062	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
RSET010	STORAGE TANKS/VESSELS	N/A	63GT-036	40 CFR Part 63, Subpart G	No changing attributes.
RSET0126	STORAGE TANKS/VESSELS	N/A	R5112-050	30 TAC Chapter 115, Storage of VOCs	True Vapor Pressure = True vapor pressure is less than 1.0 psia
RSET0126	STORAGE TANKS/VESSELS	N/A	R5112-052	30 TAC Chapter 115, Storage of VOCs	True Vapor Pressure = True vapor pressure is greater than or equal to 1.5 psia, Control Device Type = Flare
RSET0126	STORAGE TANKS/VESSELS	N/A	R5112-055	30 TAC Chapter 115, Storage of VOCs	True Vapor Pressure = True vapor pressure is greater than or equal to 1.5 psia, Control Device Type = Other vapor recovery unit
RSET0126	STORAGE TANKS/VESSELS	N/A	61FF-T02a	40 CFR Part 61, Subpart FF	Bypass Line = The closed vent system contains any by-pass line that could divert the vent stream

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					away from the control device., Bypass Line Valve = A car-seal or lock and key configuration are used to secure the by-pass line valve in the closed position., Control Device Type/Operation = Flare
RSET0126	STORAGE TANKS/VESSELS	N/A	61FF-T03a	40 CFR Part 61, Subpart FF	Bypass Line = The closed vent system does not contain any by- pass line that could divert the vent stream away from the control device., Engineering Calculations = Engineering calculations show that the control device is proven to achieve its emission limitation., Control Device Type/Operation = Carbon adsorption system that does not regenerate the carbon bed directly in the control device, Alternate Monitoring Parameters = Alternate monitoring parameters not requested, Carbon Replacement Interval = The carbon in the carbon adsorption system is replaced when monitoring indicates breakthrough.
RSET0126	STORAGE TANKS/VESSELS	N/A	63YY-T	40 CFR Part 63, Subpart YY	No changing attributes.
RSET0127	STORAGE TANKS/VESSELS	N/A	R5112-050	30 TAC Chapter 115, Storage of VOCs	True Vapor Pressure = True vapor pressure is less than 1.0 psia
RSET0127	STORAGE TANKS/VESSELS	N/A	R5112-052	30 TAC Chapter 115, Storage of VOCs	True Vapor Pressure = True vapor pressure is greater than or equal to 1.5 psia, Control Device Type = Flare

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
RSET0127	STORAGE TANKS/VESSELS	N/A	61FF-T02a	40 CFR Part 61, Subpart FF	No changing attributes.
RSET0127	STORAGE TANKS/VESSELS	N/A	63YY-T	40 CFR Part 63, Subpart YY	No changing attributes.
RSET0180	STORAGE TANKS/VESSELS	N/A	R5112-062	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
RSET0180	STORAGE TANKS/VESSELS	N/A	63GT-036	40 CFR Part 63, Subpart G	No changing attributes.
RSET0204	STORAGE TANKS/VESSELS	N/A	R5112-062	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
RSET0204	STORAGE TANKS/VESSELS	N/A	63GT-036	40 CFR Part 63, Subpart G	No changing attributes.
RSET030	STORAGE TANKS/VESSELS	N/A	R5112-062	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
RSET030	STORAGE TANKS/VESSELS	N/A	63GT-036	40 CFR Part 63, Subpart G	No changing attributes.
RSET039	STORAGE TANKS/VESSELS	N/A	R5112-067	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
RSET040	STORAGE TANKS/VESSELS	N/A	R5112-067	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
RSET087	STORAGE TANKS/VESSELS	N/A	R5112-052	30 TAC Chapter 115, Storage of VOCs	Tank Description = Tank using a vapor recovery system (VRS), Control Device Type = Flare
RSET087	STORAGE TANKS/VESSELS	N/A	R5112-069	30 TAC Chapter 115, Storage of VOCs	Tank Description = Tank using an internal floating roof (IFR)
RSET087	STORAGE TANKS/VESSELS	N/A	60Kb-33	40 CFR Part 60, Subpart Kb	Storage Vessel Description = Fixed roof with an internal floating roof using a mechanical shoe seal

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
RSET087	STORAGE TANKS/VESSELS	N/A	60Kb-36	40 CFR Part 60, Subpart Kb	Storage Vessel Description = Closed vent system (CVS) with a flare used as the control device (fixed roof)
RSET087	STORAGE TANKS/VESSELS	N/A	61FF-T02a	40 CFR Part 61, Subpart FF	Alternative Standard for Tanks = The tank is not complying with the alternative standards in 40 CFR § 61.351., Alternative Means of Compliance = Not using an alternate means of compliance to meet the requirements of 40 CFR § 61.343 for tanks., Cover and Closed Vent = The cover and closed vent system are not operated such that the tank is maintained at a pressure less than atmospheric pressure and meets the conditions of 40 CFR § 61.343(a)(1)(i)(C)(1)-(3)., Bypass Line = The closed vent system contains any by-pass line that could divert the vent stream away from the control device., Bypass Line Valve = A car-seal or lock and key configuration are used to secure the by-pass line valve in the closed position., Control Device Type/Operation = Flare, Tank Control Requirements = The tank has a fixed roof and closed vent system routing vapors to either a fuel gas system or control device., Fuel Gas System = Gaseous emissions from the tank or enclosure are not routed to a fuel gas system.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
RSET087	STORAGE TANKS/VESSELS	N/A	61FF-T04a	40 CFR Part 61, Subpart FF	Alternative Standard for Tanks = The tank is complying with the alternative standards in 40 CFR § 61.351., Kb Tank Type = Using a fixed roof and internal floating roof, that meets the requirements of 40 CFR § 60.112b(a)(1), Seal Type = Mechanical shoe seal
RSET087	STORAGE TANKS/VESSELS	N/A	63YY-T	40 CFR Part 63, Subpart YY	No changing attributes.
RSET088	STORAGE TANKS/VESSELS	N/A	R5112-052	30 TAC Chapter 115, Storage of VOCs	Tank Description = Tank using a vapor recovery system (VRS), Control Device Type = Flare
RSET088	STORAGE TANKS/VESSELS	N/A	R5112-069	30 TAC Chapter 115, Storage of VOCs	Tank Description = Tank using an internal floating roof (IFR)
RSET088	STORAGE TANKS/VESSELS	N/A	60Kb-33	40 CFR Part 60, Subpart Kb	Storage Vessel Description = Fixed roof with an internal floating roof using a mechanical shoe seal
RSET088	STORAGE TANKS/VESSELS	N/A	60Kb-36	40 CFR Part 60, Subpart Kb	Storage Vessel Description = Closed vent system (CVS) with a flare used as the control device (fixed roof)
RSET088	STORAGE TANKS/VESSELS	N/A	61FF-T02a	40 CFR Part 61, Subpart FF	Alternative Standard for Tanks = The tank is not complying with the alternative standards in 40 CFR § 61.351., Alternative Means of Compliance = Not using an alternate means of compliance to meet the requirements of 40 CFR § 61.343 for tanks., Cover and Closed Vent = The cover and

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
					closed vent system are not operated such that the tank is maintained at a pressure less than atmospheric pressure and meets the conditions of 40 CFR § 61.343(a)(1)(i)(C)(1)-(3)., Bypass Line = The closed vent system contains any by-pass line that could divert the vent stream away from the control device., Bypass Line Valve = A car-seal or lock and key configuration are used to secure the by-pass line valve in the closed position., Control Device Type/Operation = Flare, Tank Control Requirements = The tank has a fixed roof and closed vent system routing vapors to either a fuel gas system or control device., Fuel Gas System = Gaseous emissions from the tank or enclosure are not routed to a fuel gas system.
RSET088	STORAGE TANKS/VESSELS	N/A	61FF-T04a	40 CFR Part 61, Subpart FF	Alternative Standard for Tanks = The tank is complying with the alternative standards in 40 CFR § 61.351., Kb Tank Type = Using a fixed roof and internal floating roof, that meets the requirements of 40 CFR § 60.112b(a)(1), Seal Type = Mechanical shoe seal
RSET088	STORAGE TANKS/VESSELS	N/A	63YY-T	40 CFR Part 63, Subpart YY	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
RSETFUG	FUGITIVE EMISSION UNITS	N/A	R5352-ALL	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	No changing attributes.
RSETFUG	FUGITIVE EMISSION UNITS	N/A	61V-ALL	40 CFR Part 61, Subpart V	No changing attributes.
RSETFUG	FUGITIVE EMISSION UNITS	N/A	63H-ALL	40 CFR Part 63, Subpart H	No changing attributes.
RSETQ142	STORAGE TANKS/VESSELS	N/A	R5112-003	30 TAC Chapter 115, Storage of VOCs	No changing attributes.
UEHK10	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-607	30 TAC Chapter 117, Subchapter B	No changing attributes.
UEHK10	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60Db-005	40 CFR Part 60, Subpart Db	No changing attributes.
UEHK11	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60Db-002x	40 CFR Part 60, Subpart Db	No changing attributes.
UEHK11	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	63DDDDDD	40 CFR Part 63, Subpart DDDDDD	No changing attributes.
UEHK9	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	R7ICI-607	30 TAC Chapter 117, Subchapter B	No changing attributes.
UEHK9	BOILERS/STEAM GENERATORS/STEAM GENERATING UNITS	N/A	60Db-005	40 CFR Part 60, Subpart Db	No changing attributes.
UER037	FLARES	N/A	R1111-002	30 TAC Chapter 111, Visible Emissions	No changing attributes.
UER037	FLARES	N/A	60A-003	40 CFR Part 60, Subpart A	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
UER044	FLARES	N/A	R1111-002	30 TAC Chapter 111, Visible Emissions	No changing attributes.
UER044	FLARES	N/A	60A-003	40 CFR Part 60, Subpart A	No changing attributes.
UER046	FLARES	N/A	R1111-002	30 TAC Chapter 111, Visible Emissions	No changing attributes.
UER046	FLARES	N/A	60A-003	40 CFR Part 60, Subpart A	No changing attributes.

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
A3CA31A	EU	R7ICI110 1X	CO	30 TAC Chapter 117, Subchapter B	§ 117.105(c) § 117.105(a) § 117.130(a) § 117.140(k)	No person shall allow the discharge into the atmosphere from any stationary gas turbine with a megawatt (MW) rating greater than or equal to 10.0 MW, emissions in excess of a block one-hour average concentration of 132 ppmv carbon monoxide (CO) at 15% oxygen, dry basis. For stationary gas turbines equipped with CEMS or PEMS for CO, the owner or operator may elect to comply with the CO specification of this subsection using a 24-hour rolling average.	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(d) § 117.135(e) § 117.135(g) § 117.140(a) [G]§ 117.140(h)(2) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.145(a) § 117.145(f) § 117.145(f)(1) [G]§ 117.145(f)(4) § 117.145(f)(8) § 117.145(f)(9)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(1)(A) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
A3CA31A	EU	R7ICI110 1X	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.105(c) § 117.105(a) § 117.130(a) § 117.130(d) § 117.140(k) § 117.140(l)	No person shall allow the discharge into the atmosphere from any stationary gas turbine with a MW rating greater than or equal to 10.0 MW, emissions in excess of a block one-hour average concentration of 42 ppmv NO _x at 15% oxygen, dry basis.	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(d) § 117.135(e) § 117.135(g) § 117.140(a) § 117.140(c)(1) [G]§ 117.140(c)(3) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.145(a) § 117.145(f) § 117.145(f)(1) § 117.145(f)(8) § 117.145(f)(9)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									§ 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
A3CA31A	EU	60GG-005Y	SO ₂	40 CFR Part 60, Subpart GG	§ 60.333(b)	No stationary gas turbine shall burn any fuel which contains sulfur in excess of 0.8% by weight.	§ 60.334(h) [G]§ 60.334(h)(3)	None	None
A3FA3103	EP	R5121-3	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.122(a)(2) § 115.121(a)(2) § 115.122(a)(2)(B)	Any vent gas streams affected by §115.121(a)(2) of this title must be controlled properly with a control efficiency of at least 98% or to a VOC concentration of no more than 20 ppmv (on a dry basis corrected to 3.0% oxygen for combustion devices).	[G]§ 115.125 § 115.126(1) § 115.126(1)(C) § 115.126(2) ** See Periodic Monitoring Summary	§ 115.126 § 115.126(1) § 115.126(1)(C) § 115.126(2)	None
A3FA3103	EP	60NNN-047	VOC/TOC	40 CFR Part 60, Subpart NNN	§ 60.662(a)	Affected facilities shall reduce TOC emissions by 98 weight-percent or to a concentration of 20ppmv, whichever is less stringent. Introduce the stream into the flame zone of a boiler/process heater.	§ 60.663(c) § 60.664(a) § 60.664(b) § 60.664(b)(1) § 60.664(b)(2) § 60.664(b)(3) [G]§ 60.664(b)(4) § 60.703(c)(1) § 60.703(c)(1)(i) § 60.703(c)(1)(ii) § 60.703(c)(2)	§ 60.665(b) § 60.665(b)(2) § 60.665(b)(2)(i) § 60.665(c) § 60.665(c)(4) § 60.703(c)(1) § 60.703(c)(1)(i) § 60.703(c)(1)(ii) § 60.705(d)(1) § 60.705(d)(2)	§ 60.665(a) § 60.665(b) § 60.665(b)(2) § 60.665(b)(2)(i) § 60.665(c) § 60.665(c)(4) § 60.665(k) § 60.665(l) § 60.665(l)(1) § 60.705(l)(2) § 60.705(l)(7)
A3FA3103	EP	60NNN-048	VOC/TOC	40 CFR Part 60, Subpart NNN	§ 60.662(a)	Affected facilities shall reduce TOC emissions by 98 weight-percent or to a concentration of 20ppmv, whichever is less stringent. Introduce the stream into the flame zone of a	§ 60.663(c) § 60.663(c)(2) § 60.664(c) § 60.703(c)(1) § 60.703(c)(1)(i) § 60.703(c)(1)(ii)	§ 60.663(c)(2) § 60.665(b) § 60.665(b)(2) § 60.665(b)(2)(i) § 60.665(c) § 60.665(c)(4) § 60.703(c)(1)	§ 60.665(a) § 60.665(b) § 60.665(b)(2) § 60.665(b)(2)(i) § 60.665(c) § 60.665(c)(4) § 60.665(k)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						boiler/process heater.		§ 60.703(c)(1)(i) § 60.703(c)(1)(ii) § 60.705(d)(1) § 60.705(d)(2)	§ 60.665(l) § 60.665(l)(1) § 60.705(l)(2) § 60.705(l)(7)
A3FA3205A	EP	R5121-6	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.122(a)(1) § 115.121(a)(1) § 115.122(a)(1)(C)	Vent gas streams affected by §115.121(a)(1) must be controlled properly with a control efficiency of at least 90% or to a volatile organic compound (VOC) concentration of no more than 20 parts per million (ppmv) (on a dry basis corrected to 3.0% oxygen for combustion devices).	[G]§ 115.125 § 115.126(1) § 115.126(1)(C) § 115.126(2) ** See Periodic Monitoring Summary	§ 115.126 § 115.126(1) § 115.126(1)(C) § 115.126(2)	None
A3FA3205B	EP	R5121-6	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.122(a)(1) § 115.121(a)(1) § 115.122(a)(1)(C)	Vent gas streams affected by §115.121(a)(1) must be controlled properly with a control efficiency of at least 90% or to a volatile organic compound (VOC) concentration of no more than 20 parts per million (ppmv) (on a dry basis corrected to 3.0% oxygen for combustion devices).	[G]§ 115.125 § 115.126(1) § 115.126(1)(C) § 115.126(2) ** See Periodic Monitoring Summary	§ 115.126 § 115.126(1) § 115.126(1)(C) § 115.126(2)	None
A3FA357	EP	R5121-6	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.122(a)(1) § 115.121(a)(1) § 115.122(a)(1)(C)	Vent gas streams affected by §115.121(a)(1) must be controlled properly with a control efficiency of at least 90% or to a volatile organic compound (VOC) concentration of no more than 20 parts per million (ppmv) (on a dry basis corrected to 3.0% oxygen for combustion devices).	[G]§ 115.125 § 115.126(1) § 115.126(1)(C) § 115.126(2) ** See Periodic Monitoring Summary	§ 115.126 § 115.126(1) § 115.126(1)(C) § 115.126(2)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
A3FO11	EP	R5121-6	VOC	30 TAC Chapter 115, Vent Gas Controls	§ 115.122(a)(1) § 115.121(a)(1) § 115.122(a)(1)(C)	Vent gas streams affected by §115.121(a)(1) must be controlled properly with a control efficiency of at least 90% or to a volatile organic compound (VOC) concentration of no more than 20 parts per million (ppmv) (on a dry basis corrected to 3.0% oxygen for combustion devices).	[G]§ 115.125 § 115.126(1) § 115.126(1)(C) § 115.126(2) ** See Periodic Monitoring Summary	§ 115.126 § 115.126(1) § 115.126(1)(C) § 115.126(2)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(7) § 115.357(1)	No process drains shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(7)	No process drains shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery &	§ 115.352(1)(A) § 115.352(1) § 115.352(10)	No pressure relief valves shall be allowed to have a VOC leak, for more than 15	§ 115.354(1) § 115.354(2) § 115.354(4)	§ 115.352(7) § 115.356 [G]§ 115.356(1)	[G]§ 115.354(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				Petrochemicals	§ 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(9) § 115.357(1) § 115.357(8) § 115.357(9)	days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355 § 115.357(1)	[G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(9) § 115.357(12) § 115.357(8) § 115.357(9)	No pressure relief valves shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(4) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(1) § 115.357(8) § 115.357(9)	No open-ended valves or lines shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)
A3FUG	EU	R5352-	VOC	30 TAC Chapter	§ 115.352(1)(A)	No open-ended valves or	§ 115.354(1)	§ 115.352(7)	[G]§ 115.354(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
		ALL		115, Pet. Refinery & Petrochemicals	§ 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(12) § 115.357(8) § 115.357(9)	lines shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355	§ 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(1) § 115.357(8) § 115.357(9)	No valves shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(1) § 115.357(8) § 115.352(7)	No valves shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.357(12) § 115.357(8) § 115.357(9)				
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(8) § 115.357(1) § 115.357(12) § 115.357(8)	No flanges or other connectors shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(11) § 115.354(3) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(8) § 115.357(12) § 115.357(8)	No flanges or other connectors shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(11) § 115.354(3) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(7)	No agitators shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or	§ 115.354(1) § 115.354(10) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.357(1) § 115.357(12) § 115.357(8)	sound.			
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(7) § 115.357(1) § 115.357(12) § 115.357(8)	No agitators shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(7) § 115.357(12) § 115.357(8)	No agitators shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background	[G]§ 115.355	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(3) § 115.357(8)	as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.			
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(4) § 115.357(8)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	[G]§ 115.355	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(1) § 115.357(8)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(C) § 115.352(1) § 115.352(10) § 115.352(2)	No component shall be allowed to have a VOC leak, for more than 15 days, after discovery. If the owner	§ 115.354(1) § 115.354(11) § 115.354(13)(A) § 115.354(13)(B)	§ 115.352(7) § 115.354(13)(D) § 115.354(13)(E) § 115.356	[G]§ 115.358(g)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.352(2)(A) § 115.352(2)(B) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.352(8) § 115.357(8) § 115.358(c)(1) [G]§ 115.358(h)	or operator elects to use the alternative work practice in §115.358 of this title, any leak detected as defined in §115.358 of this title, including any leak detected using the alternative work practice on a component that is subject to the requirements of this division but not specifically selected for alternative work practice monitoring.	§ 115.354(13)(C) § 115.354(13)(D) § 115.354(13)(E) § 115.354(13)(F) § 115.354(4) § 115.354(5) § 115.354(9) [G]§ 115.355 § 115.358(c)(2) § 115.358(d) [G]§ 115.358(e) § 115.358(f)	[G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) [G]§ 115.356(4) § 115.356(5)	
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(12) § 115.357(8)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(13)	Components/systems that contact a process fluid containing VOC having a true vapor pressure equal to or less than 0.002 psia at 68 degrees Fahrenheit are exempt from the requirements of this division except §115.356(3)(C) of	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						this title.			
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(11)	Sampling connection systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet the requirements of 40 CFR §63.166(a) and (b) (June 20, 1996) are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(10)	Instrumentation systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet 40 CFR §63.169 (June 20, 1996) are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(5)	Reciprocating compressors and positive displacement pumps used in natural gas/gasoline processing operations are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(6)	Components at a petroleum refinery or synthetic organic chemical, polymer, resin, or methyl-tert-butyl ether manufacturing process, that contact a process fluid that contains less than 10% VOC by weight and components at a natural gas/gasoline processing	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						operation that contact a process fluid that contains less than 1.0% VOC by weight are exempt from the requirements of this division except §115.356(3)(C) of this title.			
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(4) § 115.357(8)	No pump seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	[G]§ 115.355	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(1) § 115.357(8)	No pump seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery &	§ 115.352(1)(B) § 115.352(1) § 115.352(10)	No pump seals shall be allowed to have a VOC leak, for more than 15 days	§ 115.354(1) § 115.354(10) § 115.354(2)	§ 115.352(7) § 115.354(10) § 115.356	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				Petrochemicals	§ 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(12) § 115.357(8)	after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	[G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	
A3FUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(2) § 115.352(9)	Each pressure relief valve equipped with a rupture disk must comply with §115.352(9) and §115.356(3)(C).	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-8 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for flanges and other connectors. § 61.242-8(a)-(d)	[G]§ 61.242-8 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	§ 61.242-9 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d)	Each product accumulator vessel shall be equipped with a closed-vent system to capture and transport any leakage from the vessel to a control device as in §61.242-11, except in §61.242-1(c).	[G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-8 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for pressure relief devices in liquid service. § 61.242-8(a)-(d)	[G]§ 61.242-8 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-7 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10 [G]§ 61.243-1 [G]§ 61.243-2	Comply with standards for valves. §61.242-7(a)-(h)	[G]§ 61.242-7 [G]§ 61.243-1 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(f) [G]§ 61.246(g) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) § 61.247(d) [G]§ 61.247(e)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-6 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for open-ended valves or lines. §61.242-6(a)-(c)	[G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-5 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for sampling connection systems. §61.242-5(a)-(c)	[G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-4 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for pressure relief devices in gas/vapor service. §61.242-4(a)-(c)	[G]§ 61.242-4 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-3 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for compressors. §61.242-3(a)-(i)	[G]§ 61.242-3 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(h) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	§ 61.242-1(e)	Equipment that is in vacuum service is excluded from the requirements of §61.242-2 to §61.242-11, if it is identified as required in §61.246(e)(5).	None	[G]§ 61.246(e)	None

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
A3FUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-2 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for pumps. §61.242-2(a)-(g)	[G]§ 61.242-2 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(h) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
A3FUG	EU	60VV-63YY	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
A3FUG	EU	63YY-F	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
A3HA35	EU	R7ICI-606	CO	30 TAC Chapter 117, Subchapter B	§ 117.110(c)(1) § 117.110(c) § 117.110(c)(1)(A) § 117.110(c)(3)	No person shall allow the discharge into the atmosphere from any boiler subject to NO _x emission specifications in § 117.110(a) CO in excess of 400 ppmv at 3.0% oxygen, dry basis, except as provided in § 117.125 or § 117.110(c)(3).	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(3) § 117.135(g) § 117.140(a) § 117.140(b)(1) § 117.140(b)(3)	§ 117.145(a) § 117.145(f) § 117.145(f)(1) [G]§ 117.145(f)(2) § 117.145(f)(8) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(B)(iii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)		[G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
A3HA35	EU	R7ICI-606	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.110(a)(1) § 117.110(a) § 117.110(b) [G]§ 117.110(b)(1) § 117.130(d) § 117.130(d)(1) § 117.140(k)	No person shall allow the discharge into the atmosphere from any gas-fired boilers with a maximum rated capacity equal to or greater than 40 MMBtu emissions of NO _x in excess of 0.10 lb/MMBtu of heat input.	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(2) § 117.135(g) § 117.140(a) § 117.140(b)(1) § 117.140(b)(3) § 117.140(c)(1) [G]§ 117.140(c)(3) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(i) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(C) § 117.8100(a)(2)	§ 117.145(a) § 117.145(f) § 117.145(f)(1) [G]§ 117.145(f)(2) § 117.145(f)(8) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							[G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)		[G]§ 117.8010(8) § 117.8100(c)
A3TA329	EU	R5112-020	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
A3TA339	EU	R5112-005	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	[G]§ 115.117 ** See Periodic Monitoring Summary	§ 115.118(a)(5) § 115.118(a)(7)	None
A3TA346	EU	R5112-027	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
A3WASTE	EU	63YY-W	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					CFR Part 63, Subpart YY				
CG1	EU	R7ICI110 2X	CO	30 TAC Chapter 117, Subchapter B	§ 117.105(c) § 117.105(a) § 117.130(a) § 117.140(k)	No person shall allow the discharge into the atmosphere from any stationary gas turbine with a megawatt (MW) rating greater than or equal to 10.0 MW, emissions in excess of a block one-hour average concentration of 132 ppmv carbon monoxide (CO) at 15% oxygen, dry basis. For stationary gas turbines equipped with CEMS or PEMS for CO, the owner or operator may elect to comply with the CO specification of this subsection using a 24-hour rolling average.	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(3) § 117.135(g) § 117.140(a)(2)(A) § 117.140(d) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(B)(iii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6) § 117.8120 § 117.8120(1) § 117.8120(1)(A)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(7) § 117.145(f)(8) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
CG1	EU	R7ICI110 2X	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.105(a)(1) § 117.105(a) [G]§ 117.105(a)(2) § 117.130(a) § 117.130(d) § 117.140(k)	For purposes of this subchapter, the permit nitrogen oxides emission limit in effect on June 9, 1993, under a permit issued in accordance with Chapter	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.8010 [G]§ 117.8010(1)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 117.140(l)	116 of this title applies if lower than specifications of § 117.150(b)-(d).	§ 117.135(f)(2) § 117.135(g) § 117.140(a)(2)(A) § 117.140(c)(1) [G]§ 117.140(c)(3) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(i) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)		§ 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
CG1	EU	60GG-006	SO ₂	40 CFR Part 60, Subpart GG	§ 60.333(b)	No stationary gas turbine shall burn any fuel which contains sulfur in excess of 0.8% by weight.	§ 60.334(h) [G]§ 60.334(h)(3)	None	None
CG2	EU	R7ICI110 2X	CO	30 TAC Chapter 117, Subchapter B	§ 117.105(c) § 117.105(a) § 117.130(a) § 117.140(k)	No person shall allow the discharge into the atmosphere from any stationary gas turbine with a megawatt (MW) rating greater than or equal to 10.0 MW, emissions in excess of a block one-hour average concentration of 132 ppmv carbon monoxide (CO) at 15% oxygen, dry basis. For stationary gas	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(3) § 117.135(g) § 117.140(a)(2)(A) § 117.140(d) § 117.140(e) § 117.8100(a)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(7) § 117.145(f)(8) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						turbines equipped with CEMS or PEMS for CO, the owner or operator may elect to comply with the CO specification of this subsection using a 24-hour rolling average.	§ 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(iii) § 117.8100(a)(1)(B)(iii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6) § 117.8120 § 117.8120(1) § 117.8120(1)(A)		§ 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
CG2	EU	R7ICI110 2X	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.105(a)(1) § 117.105(a) [G]§ 117.105(a)(2) § 117.130(a) § 117.130(d) § 117.140(k) § 117.140(l)	For purposes of this subchapter, the permit nitrogen oxides emission limit in effect on June 9, 1993, under a permit issued in accordance with Chapter 116 of this title applies if lower than specifications of § 117.150(b)-(d).	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(2) § 117.135(g) § 117.140(a)(2)(A) § 117.140(c)(1) [G]§ 117.140(c)(3) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(i) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)		
CG2	EU	60GG-006	SO ₂	40 CFR Part 60, Subpart GG	§ 60.333(b)	No stationary gas turbine shall burn any fuel which contains sulfur in excess of 0.8% by weight.	§ 60.334(h) [G]§ 60.334(h)(3)	None	None
CT-1	EU	63YY-H	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
CT-4	EU	63YY-H	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
FDU-1	EU	R5112-00a	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						division.			
GRPA3PH1	EU	R7ICI-503	CO	30 TAC Chapter 117, Subchapter B	§ 117.110(c)(1) § 117.110(c) § 117.110(c)(1)(B) § 117.110(c)(3)	No person shall allow the discharge into the atmosphere from any process heater subject to NO _x emission specifications in § 117.110(a) CO in excess of 400 ppmv at 3.0% oxygen, dry basis, except as provided in § 117.125 or § 117.110(c)(3).	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(d) § 117.135(e) § 117.135(g) § 117.140(a) § 117.8000(b) § 117.8000(c) § 117.8000(c)(2) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d) ** See Periodic Monitoring Summary	§ 117.145(a) § 117.145(f) § 117.145(f)(1) § 117.145(f)(9)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8)
GRPA3PH1	EU	R7ICI-503	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.110(a)(2) § 117.110(a) § 117.110(b) § 117.110(b)(2) § 117.130(d) § 117.140(k)	No person shall allow the discharge into the atmosphere from any gas-fired process heaters with a maximum rated capacity equal to or greater than 40 MMBtu emissions of NO _x in excess of 0.08 lb/MMBtu of heat input.	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(d) § 117.135(e) § 117.135(g) § 117.140(a) § 117.8000(b) § 117.8000(c) § 117.8000(c)(1) § 117.8000(c)(3) § 117.8000(c)(5) § 117.8000(c)(6) [G]§ 117.8000(d)	§ 117.145(a) § 117.145(f) § 117.145(f)(1) § 117.145(f)(9)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7)
GRPA3PH1	EU	63DDDD D-63YY	112(B) HAPS	40 CFR Part 63, Subpart DDDDD	§ 63.7505 The permit holder shall comply with the applicable limitation, standard and/or	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart DDDDD	The permit holder shall comply with the applicable monitoring and testing requirements of 40	The permit holder shall comply with the applicable recordkeeping requirements of 40	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					equipment specification requirements of 40 CFR Part 63, Subpart DDDDD		CFR Part 63, Subpart DDDDD	CFR Part 63, Subpart DDDDD	DDDDD
GRPA3PH1	EU	63YY	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
GRPUTIC1	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6602-Table2c.1 § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e) § 63.6625(h) § 63.6625(i) § 63.6640(f)(1) § 63.6640(f)(2) § 63.6640(f)(2)(i) § 63.6640(f)(3)	For each existing emergency stationary CI RICE and black start stationary CI RICE, located at a major source, you must comply with the requirements as specified in Table 2c.1.a-c.	§ 63.6625(f) § 63.6625(i) § 63.6640(a) § 63.6640(a)-Table6.9.a.i § 63.6640(a)-Table6.9.a.ii	§ 63.6625(i) § 63.6655(e) § 63.6655(f) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6640(e) § 63.6650(f)
GRPUTTK1	EU	R5112-00a	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
P-Q-108	EU	117-EMERG	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.103(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.140(i), 117.145(f)(6),	§ 117.8140(a) § 117.8140(a)(3)	§ 117.140(i) § 117.145(f) § 117.145(f)(6) § 117.145(f)(6)(B)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						117.150(c)(1), and 117.154(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.			
P-Q-108	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6602-Table2c.1 § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e) § 63.6625(h) § 63.6625(i) § 63.6640(f)(1) § 63.6640(f)(2) § 63.6640(f)(2)(i) § 63.6640(f)(3)	For each existing emergency stationary CI RICE and black start stationary CI RICE, located at a major source, you must comply with the requirements as specified in Table 2c.1.a-c.	§ 63.6625(f) § 63.6625(i) § 63.6640(a) § 63.6640(a)-Table6.9.a.i § 63.6640(a)-Table6.9.a.ii	§ 63.6625(i) § 63.6655(e) § 63.6655(f) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6640(e) § 63.6650(f)
PROA3WW	PRO	61FFTP-WW1a	Benzene	40 CFR Part 61, Subpart FF	§ 61.348(a)(1) § 61.340(d) § 61.348(a)(1)(i) § 61.348(a)(2) § 61.348(a)(3) § 61.348(a)(4) § 61.348(e) § 61.348(e)(1) § 61.348(e)(2) § 61.348(f)	The owner or operator shall design, install, operate and maintain a treatment process that removes or destroys benzene as specified.	§ 61.348(e)(1) § 61.348(f) § 61.354(a)(2)	§ 61.354(a)(2) § 61.356(e) § 61.356(e)(1) § 61.356(e)(2) [G]§ 61.356(i)	§ 61.357(d)(7) § 61.357(d)(7)(ii)
PROA3WW	PRO	61FFTP-WW1b	Benzene	40 CFR Part 61, Subpart FF	§ 61.348(a)(1) § 60.18 § 61.348(a)(1)(i) § 61.348(a)(2)	The owner or operator shall design, install, operate and maintain a treatment process that removes or	§ 60.18(f)(2) § 61.348(e)(1) § 61.348(f) § 61.349(a)(1)(i)	§ 61.354(a)(2) § 61.354(c) § 61.354(c)(3) § 61.356(e)	§ 61.357(d)(7) § 61.357(d)(7)(ii) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(F)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.348(a)(3) § 61.348(a)(4) § 61.348(e) § 61.348(e)(1) § 61.348(e)(2) § 61.348(f) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(a)(1)(iii)(B) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)	destroys benzene as specified.	§ 61.349(a)(1)(ii) § 61.349(e) § 61.349(f) § 61.354(a)(2) § 61.354(c) § 61.354(c)(3) § 61.354(f)(1) [G]§ 61.355(h)	§ 61.356(e)(1) § 61.356(e)(2) § 61.356(f) § 61.356(f)(1) § 61.356(h) [G]§ 61.356(i) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(3)(i) § 61.356(j)(7)	
PRORSHON	PRO	63F-002	112(B) HAPS	40 CFR Part 63, Subpart F	§ 63.100(b) [G]§ 63.102(a) [G]§ 63.102(c) § 63.105(d)	Except as provided in paragraphs (b)(4) and (c) of this section, the provisions of subparts F, G, and H apply to chemical manufacturing process units that meet the criteria.	§ 63.103(b)(1) § 63.103(b)(3) § 63.103(b)(4) [G]§ 63.103(b)(5) § 63.103(b)(6)	[G]§ 63.103(c) [G]§ 63.105(b) § 63.105(c) § 63.105(e)	§ 63.103(b)(2) [G]§ 63.103(b)(5) [G]§ 63.103(d)
PU-11	EU	117-EMERG	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.103(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.140(i), 117.145(f)(6), 117.150(c)(1), and 117.154(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based	§ 117.8140(a) § 117.8140(a)(3)	§ 117.140(i) § 117.145(f) § 117.145(f)(6) § 117.145(f)(6)(B)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						on a rolling 12-month average.			
PU-11	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6602-Table2c.1 § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e) § 63.6625(h) § 63.6625(i) § 63.6640(f)(1) § 63.6640(f)(2) § 63.6640(f)(2)(i) § 63.6640(f)(3)	For each existing emergency stationary CI RICE and black start stationary CI RICE, located at a major source, you must comply with the requirements as specified in Table 2c.1.a-c.	§ 63.6625(f) § 63.6625(i) § 63.6640(a) Table6.9.a.i § 63.6640(a)-Table6.9.a.ii	§ 63.6625(i) § 63.6655(e) § 63.6655(f) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6640(e) § 63.6650(f)
R-CC-4	EU	117-EMERG	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.103(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.140(i), 117.145(f)(6), 117.150(c)(1), and 117.154(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	§ 117.8140(a) § 117.8140(a)(3)	§ 117.140(i) § 117.145(f) § 117.145(f)(6) § 117.145(f)(6)(B)	None
R-CC-4	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6602-Table2c.1 § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e) § 63.6625(h) § 63.6625(i) § 63.6640(f)(1)	For each existing emergency stationary CI RICE and black start stationary CI RICE, located at a major source, you must comply with the requirements as specified in Table 2c.1.a-c.	§ 63.6625(f) § 63.6625(i) § 63.6640(a) Table6.9.a.i § 63.6640(a)-Table6.9.a.ii	§ 63.6625(i) § 63.6655(e) § 63.6655(f) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6640(e) § 63.6650(f)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 63.6640(f)(2) § 63.6640(f)(2)(i) § 63.6640(f)(3)				
R-S-42	EU	117-EMERG	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.103(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.140(i), 117.145(f)(6), 117.150(c)(1), and 117.154(a)(5), include stationary gas turbines and stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.	§ 117.8140(a) § 117.8140(a)(3)	§ 117.140(i) § 117.145(f) § 117.145(f)(6) § 117.145(f)(6)(B)	None
R-S-42	EU	63ZZZZ	112(B) HAPS	40 CFR Part 63, Subpart ZZZZ	§ 63.6602-Table2c.1 § 63.6595(a)(1) § 63.6605(a) § 63.6605(b) § 63.6625(e) § 63.6625(h) § 63.6625(i) § 63.6640(f)(1) § 63.6640(f)(2) § 63.6640(f)(2)(i) § 63.6640(f)(3)	For each existing emergency stationary CI RICE and black start stationary CI RICE, located at a major source, you must comply with the requirements as specified in Table 2c.1.a-c.	§ 63.6625(f) § 63.6625(i) § 63.6640(a) § 63.6640(a)-Table6.9.a.i § 63.6640(a)-Table6.9.a.ii	§ 63.6625(i) § 63.6655(e) § 63.6655(f) § 63.6660(a) § 63.6660(b) § 63.6660(c)	§ 63.6640(e) § 63.6650(f)
R-S-53	EU	117-EMERG	Exempt	30 TAC Chapter 117, Subchapter B	§ 117.103(a)(6)(D)	Units exempted from the provisions of this division, except as specified in §§117.140(i), 117.145(f)(6), 117.150(c)(1), and 117.154(a)(5), include stationary gas turbines and	§ 117.8140(a) § 117.8140(a)(3)	§ 117.140(i) § 117.145(f) § 117.145(f)(6) § 117.145(f)(6)(B)	None

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						stationary internal combustion engines that are used exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 52 hours per year, based on a rolling 12-month average.			
RRFUG	EU	R5211-018	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less than 0.5 psia is exempt from the requirements of this division, except as specified.	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None
RSELRTRKW	EU	R5211-00c	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.212(a)(1) § 115.212(a)(1)(B) § 115.212(a)(3)(A) § 115.212(a)(3)(A)(ii) § 115.212(a)(3)(B) [G]§ 115.212(a)(3)(C) § 115.212(a)(3)(E) § 115.214(a)(1)(B) § 115.214(a)(1)(C)	At operations other than gasoline terminals, gasoline bulk plants, and marine terminals, vapors from loading VOC with a true vapor pressure of 0.5 psia or greater must be controlled by one of the methods specified in § 115.212(a)(1)(A)-(C).	§ 115.212(a)(3)(B) § 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.214(a)(1)(A)(ii) § 115.214(a)(1)(A)(iii) § 115.215 § 115.215(1) § 115.215(10) [G]§ 115.215(2) § 115.215(4) § 115.215(9)	§ 115.216 § 115.216(2) § 115.216(3)(A) § 115.216(3)(A)(i) § 115.216(3)(A)(ii) § 115.216(3)(A)(iii) § 115.216(3)(B)	None
RSELRTRKW	EU	R5211-018	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less than 0.5 psia is exempt from the requirements of this division, except as	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						specified.			
RSELRTRKW	EU	63GL-0g2a	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.126(c)	For each Group 2 transfer rack, maintain records as required in § 63.130(f). No other provisions for transfer racks apply to the Group 2 transfer rack.	None	§ 63.130(f) § 63.130(f)(1) § 63.130(f)(2) § 63.130(f)(3) § 63.130(f)(3)(i) § 63.130(f)(3)(ii)	§ 63.152(c)(4)(iii)
RSELRTRKW	EU	63YY-L	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
RSELRVNTT W	EU	R5211-018	VOC	30 TAC Chapter 115, Loading and Unloading of VOC	§ 115.217(a)(1) § 115.214(a)(1)(B) § 115.214(a)(1)(D) § 115.214(a)(1)(D)(i)	Vapor pressure (at land-based operations). All land-based loading and unloading of VOC with a true vapor pressure less than 0.5 psia is exempt from the requirements of this division, except as specified.	§ 115.214(a)(1)(A) § 115.214(a)(1)(A)(i) § 115.215 § 115.215(4)	§ 115.216 § 115.216(2) § 115.216(3)(B)	None
RSET010	EU	R5112-062	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
RSET010	EU	63GT-036	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(2) § 63.119(e)(1)	The owner or operator who elects to use a closed vent system and control device	§ 63.120(d)(1) § 63.120(d)(1)(ii) § 63.120(d)(1)(ii)(A)	§ 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2)	§ 63.120(d)(1)(ii)(B) § 63.120(d)(2) § 63.120(d)(2)(i)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5) [G]§ 63.148(d) § 63.148(e)	(defined in § 63.111) to comply with § 63.119(a)(1) or (a)(2) shall comply with § 63.119(e)(1)-(5).	§ 63.120(d)(5) § 63.120(d)(6) § 63.148(b)(2)(iii) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) [G]§ 63.152(a)	[G]§ 63.120(d)(2)(iii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(3)(ii) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2) § 63.151(a)(7) [G]§ 63.151(b) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
RSET0126	EU	R5112-050	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
RSET0126	EU	R5112-052	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3) § 60.18	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or	§ 115.115(a) § 115.115(a)(6) § 115.116(a)(2) [G]§ 115.117	§ 115.118(a)(5) § 115.118(a)(7)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						Table II(a).			
RSET0126	EU	R5112-055	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
RSET0126	EU	61FF-T02a	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 60.18 § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(a)(1)(ii)(B) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 60.18(f)(2) § 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(3) § 61.354(f)(1) [G]§ 61.355(h)	§ 61.349(a)(1)(ii) § 61.354(c) § 61.354(c)(3) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(3)(i) § 61.356(j)(7)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(F)
RSET0126	EU	61FF-T03a	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(a)(2)(ii) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(e) § 61.349(f) § 61.354(d) [G]§ 61.355(h)	§ 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2) § 61.356(f)(2)(i) § 61.356(f)(2)(i)(G) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(10) § 61.356(j)(2) § 61.356(j)(3)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
RSET0126	EU	63YY-T	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
RSET0127	EU	R5112-050	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
RSET0127	EU	R5112-052	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3) § 60.18	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) § 115.116(a)(2) [G]§ 115.117	§ 115.118(a)(5) § 115.118(a)(7)	None
RSET0127	EU	61FF-T02a	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 60.18 § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(a)(1)(ii)(B) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(b) § 61.349(e)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 60.18(f)(2) § 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(3) § 61.354(f)(1) [G]§ 61.355(h)	§ 61.349(a)(1)(ii) § 61.354(c) § 61.354(c)(3) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(3)(i) § 61.356(j)(7)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(F)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 61.349(f) § 61.349(g)				
RSET0127	EU	63YY-T	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
RSET0180	EU	R5112-062	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
RSET0180	EU	63GT-036	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(2) § 63.119(e)(1) § 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5) [G]§ 63.148(d) § 63.148(e)	The owner or operator who elects to use a closed vent system and control device (defined in § 63.111) to comply with § 63.119(a)(1) or (a)(2) shall comply with § 63.119(e)(1)-(5).	§ 63.120(d)(1) § 63.120(d)(1)(ii) § 63.120(d)(1)(ii)(A) § 63.120(d)(5) § 63.120(d)(6) § 63.148(b)(2)(iii) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) [G]§ 63.152(a)	§ 63.120(d)(1)(ii)(B) § 63.120(d)(2) § 63.120(d)(2)(i) [G]§ 63.120(d)(2)(iii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(3)(ii) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2) § 63.151(a)(7) [G]§ 63.151(b) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(b)(4)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									§ 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
RSET0204	EU	R5112-062	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
RSET0204	EU	63GT-036	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(2) § 63.119(e)(1) § 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5) [G]§ 63.148(d) § 63.148(e)	The owner or operator who elects to use a closed vent system and control device (defined in § 63.111) to comply with § 63.119(a)(1) or (a)(2) shall comply with § 63.119(e)(1)-(5).	§ 63.120(d)(1) § 63.120(d)(1)(ii) § 63.120(d)(1)(ii)(A) § 63.120(d)(5) § 63.120(d)(6) § 63.148(b)(2)(iii) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) [G]§ 63.152(a)	§ 63.120(d)(1)(ii)(B) § 63.120(d)(2) § 63.120(d)(2)(i) [G]§ 63.120(d)(2)(iii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(3)(ii) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2) § 63.151(a)(7) [G]§ 63.151(b) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									[G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3) § 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
RSET030	EU	R5112-062	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) [G]§ 115.117	§ 115.118(a)(4) § 115.118(a)(4)(F) § 115.118(a)(5) § 115.118(a)(7)	None
RSET030	EU	63GT-036	112(B) HAPS	40 CFR Part 63, Subpart G	§ 63.119(e) § 63.119(a)(2) § 63.119(e)(1) § 63.119(e)(3) § 63.119(e)(4) § 63.119(e)(5) [G]§ 63.148(d) § 63.148(e)	The owner or operator who elects to use a closed vent system and control device (defined in § 63.111) to comply with § 63.119(a)(1) or (a)(2) shall comply with § 63.119(e)(1)-(5).	§ 63.120(d)(1) § 63.120(d)(1)(ii) § 63.120(d)(1)(ii)(A) § 63.120(d)(5) § 63.120(d)(6) § 63.148(b)(2)(iii) [G]§ 63.148(c) § 63.148(g) § 63.148(g)(2) § 63.148(h) § 63.148(h)(2)	§ 63.123(a) § 63.123(f)(1) [G]§ 63.123(f)(2) § 63.148(g)(2) § 63.148(h)(2) § 63.148(i)(1) § 63.148(i)(2) [G]§ 63.148(i)(4) § 63.148(i)(5) [G]§ 63.152(a)	§ 63.120(d)(1)(ii)(B) § 63.120(d)(2) § 63.120(d)(2)(i) [G]§ 63.120(d)(2)(iii) § 63.120(d)(3) § 63.120(d)(3)(i) § 63.120(d)(3)(ii) § 63.120(d)(4) § 63.122(b) § 63.122(c)(1) [G]§ 63.122(g)(1) [G]§ 63.122(g)(2) § 63.151(a)(7) [G]§ 63.151(b) [G]§ 63.151(j) [G]§ 63.152(a) § 63.152(b) [G]§ 63.152(b)(1) § 63.152(b)(4) § 63.152(c)(1) § 63.152(c)(2) § 63.152(c)(2)(i) [G]§ 63.152(c)(2)(ii) § 63.152(c)(2)(iii) § 63.152(c)(3)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
									§ 63.152(c)(3)(i) § 63.152(c)(4)(ii) [G]§ 63.152(c)(6)
RSET039	EU	R5112-067	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
RSET040	EU	R5112-067	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
RSET087	EU	R5112-052	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3) § 60.18	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) § 115.116(a)(2) [G]§ 115.117	§ 115.118(a)(5) § 115.118(a)(7)	None
RSET087	EU	R5112-069	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(2) § 115.112(a)(2)(A) § 115.112(a)(2)(B) § 115.112(a)(2)(C) § 115.112(a)(2)(D) § 115.112(a)(2)(E) § 115.114(a)(1)(A)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.114(a)(1) § 115.114(a)(1)(A) [G]§ 115.117	§ 115.118(a)(3) § 115.118(a)(5) § 115.118(a)(7)	§ 115.114(a)(1)(B)
RSET087	EU	60Kb-33	VOC	40 CFR Part 60, Subpart Kb	§ 60.112b(a)(1) § 60.112b(a)(1)(i) § 60.112b(a)(1)(ii)(C) § 60.112b(a)(1)(iii)	Storage vessels specified in §60.112b(a) and equipped with a fixed roof in combination with an internal	§ 60.113b(a)(1) § 60.113b(a)(2) § 60.113b(a)(4) § 60.113b(a)(5)	§ 60.115b § 60.115b(a)(2) § 60.116b(a) § 60.116b(b)	§ 60.113b(a)(2) § 60.113b(a)(5) § 60.115b § 60.115b(a)(1)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.112b(a)(1)(iv) § 60.112b(a)(1)(ix) § 60.112b(a)(1)(v) § 60.112b(a)(1)(vi) § 60.112b(a)(1)(vii) § 60.112b(a)(1)(viii)	floating roof shall meet the specifications listed in §60.112b(a)(1)(i)-(ix).	§ 60.116b(a) § 60.116b(b) § 60.116b(c) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3)	§ 60.116b(c)	§ 60.115b(a)(3)
RSET087	EU	60Kb-36	VOC	40 CFR Part 60, Subpart Kb	[G]§ 60.112b(a)(3) § 60.18	Storage vessels specified in §60.112b(a) and equipped with a closed vent system/control device are to meet the specifications of §60.112b(a)(3)(i)-(ii).	§ 60.113b(d) § 60.116b(a) § 60.116b(b) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3) [G]§ 60.485(b) ** See Periodic Monitoring Summary	§ 60.115b § 60.115b(d)(2) § 60.116b(a) § 60.116b(b)	§ 60.115b § 60.115b(d)(1) § 60.115b(d)(3)
RSET087	EU	61FF-T02a	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 60.18 § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(a)(1)(ii)(B) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 60.18(f)(2) § 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(3) § 61.354(f)(1) [G]§ 61.355(h)	§ 61.349(a)(1)(ii) § 61.354(c) § 61.354(c)(3) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2)(i)(D) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(3)(i) § 61.356(j)(7)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(F)
RSET087	EU	61FF-T04a	Benzene	40 CFR Part 61, Subpart FF	§ 61.351(a) § 60.112b(a)(1) § 60.112b(a)(1)(i) § 60.112b(a)(1)(ii)(C) § 60.112b(a)(1)(iii) § 60.112b(a)(1)(iv) § 60.112b(a)(1)(ix)	As an alternative to the standards for tanks specified in § 61.343, an owner or operator may elect to comply with one of the following §61.351(a)(1)-(3):	§ 60.113b(a)(1) § 60.113b(a)(2) § 60.113b(a)(4) § 60.113b(a)(5)	§ 60.115b § 60.115b(a)(2) § 61.356(k)	§ 60.113b(a)(2) § 60.113b(a)(5) § 60.115b § 60.115b(a)(1) § 60.115b(a)(3) § 61.357(e) § 61.357(f)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.112b(a)(1)(v) § 60.112b(a)(1)(vi) § 60.112b(a)(1)(vii) § 60.112b(a)(1)(viii) § 61.351(a)(1) § 61.351(b)				
RSET087	EU	63YY-T	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
RSET088	EU	R5112-052	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(3) § 60.18	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.115(a) § 115.115(a)(6) § 115.116(a)(2) [G]§ 115.117	§ 115.118(a)(5) § 115.118(a)(7)	None
RSET088	EU	R5112-069	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.112(a)(1) § 115.112(a)(2) § 115.112(a)(2)(A) § 115.112(a)(2)(B) § 115.112(a)(2)(C) § 115.112(a)(2)(D) § 115.112(a)(2)(E) § 115.114(a)(1)(A)	Tanks shall not store VOC unless the required pressure is maintained, or they are equipped with the appropriate control device specified in Table I(a) or Table II(a).	§ 115.114(a)(1) § 115.114(a)(1)(A) [G]§ 115.117	§ 115.118(a)(3) § 115.118(a)(5) § 115.118(a)(7)	§ 115.114(a)(1)(B)
RSET088	EU	60Kb-33	VOC	40 CFR Part 60, Subpart Kb	§ 60.112b(a)(1) § 60.112b(a)(1)(i) § 60.112b(a)(1)(ii)(C) § 60.112b(a)(1)(iii) § 60.112b(a)(1)(iv) § 60.112b(a)(1)(ix)	Storage vessels specified in §60.112b(a) and equipped with a fixed roof in combination with an internal floating roof shall meet the specifications listed in	§ 60.113b(a)(1) § 60.113b(a)(2) § 60.113b(a)(4) § 60.113b(a)(5) § 60.116b(a) § 60.116b(b)	§ 60.115b § 60.115b(a)(2) § 60.116b(a) § 60.116b(b) § 60.116b(c)	§ 60.113b(a)(2) § 60.113b(a)(5) § 60.115b § 60.115b(a)(1) § 60.115b(a)(3)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.112b(a)(1)(v) § 60.112b(a)(1)(vi) § 60.112b(a)(1)(vii) § 60.112b(a)(1)(viii)	§60.112b(a)(1)(i)-(ix).	§ 60.116b(c) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3)		
RSET088	EU	60Kb-36	VOC	40 CFR Part 60, Subpart Kb	[G]§ 60.112b(a)(3) § 60.18	Storage vessels specified in §60.112b(a) and equipped with a closed vent system/control device are to meet the specifications of §60.112b(a)(3)(i)-(ii).	§ 60.113b(d) § 60.116b(a) § 60.116b(b) § 60.116b(e) § 60.116b(e)(1) [G]§ 60.116b(e)(3) [G]§ 60.485(b) ** See Periodic Monitoring Summary	§ 60.115b § 60.115b(d)(2) § 60.116b(a) § 60.116b(b)	§ 60.115b § 60.115b(d)(1) § 60.115b(d)(3)
RSET088	EU	61FF-T02a	Benzene	40 CFR Part 61, Subpart FF	§ 61.343(a)(1) § 60.18 § 61.343(a)(1)(i)(A) § 61.343(a)(1)(i)(B) § 61.343(c) § 61.343(d) § 61.349(a) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(a)(1)(ii)(B) § 61.349(a)(1)(iii) § 61.349(a)(1)(iv) § 61.349(b) § 61.349(e) § 61.349(f) § 61.349(g)	The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device.	§ 60.18(f)(2) § 61.343(a)(1)(i)(A) § 61.343(c) § 61.349(a)(1)(i) § 61.349(a)(1)(ii) § 61.349(e) § 61.349(f) § 61.354(c) § 61.354(c)(3) § 61.354(f)(1) [G]§ 61.355(h)	§ 61.349(a)(1)(ii) § 61.354(c) § 61.354(c)(3) § 61.356(d) § 61.356(f) § 61.356(f)(1) § 61.356(f)(2)(i)(D) § 61.356(g) § 61.356(h) § 61.356(j) § 61.356(j)(1) § 61.356(j)(2) § 61.356(j)(3) § 61.356(j)(3)(i) § 61.356(j)(7)	§ 61.357(d)(7) § 61.357(d)(7)(iv) § 61.357(d)(7)(iv)(F)
RSET088	EU	61FF-T04a	Benzene	40 CFR Part 61, Subpart FF	§ 61.351(a) § 60.112b(a)(1) § 60.112b(a)(1)(i) § 60.112b(a)(1)(ii)(C) § 60.112b(a)(1)(iii) § 60.112b(a)(1)(iv) § 60.112b(a)(1)(ix) § 60.112b(a)(1)(v) § 60.112b(a)(1)(vi)	As an alternative to the standards for tanks specified in § 61.343, an owner or operator may elect to comply with one of the following §61.351(a)(1)-(3):	§ 60.113b(a)(1) § 60.113b(a)(2) § 60.113b(a)(4) § 60.113b(a)(5)	§ 60.115b § 60.115b(a)(2) § 61.356(k)	§ 60.113b(a)(2) § 60.113b(a)(5) § 60.115b § 60.115b(a)(1) § 60.115b(a)(3) § 61.357(e) § 61.357(f)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 60.112b(a)(1)(vii) § 60.112b(a)(1)(viii) § 61.351(a)(1) § 61.351(b)				
RSET088	EU	63YY-T	112(B) HAPS	40 CFR Part 63, Subpart YY	§ 63.1103 The permit holder shall comply with the applicable limitation, standard and/or equipment specification requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable monitoring and testing requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable recordkeeping requirements of 40 CFR Part 63, Subpart YY	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart YY
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(7) § 115.357(1)	No process drains shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(C) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(4)	No component shall be allowed to have a VOC leak, for more than 15 days, after discovery. If the owner or operator elects to use the alternative work practice in §115.358 of this title, any leak detected as defined in §115.358 of this title, including any leak detected using the alternative work practice on a component	§ 115.354(1) § 115.354(11) § 115.354(13)(A) § 115.354(13)(B) § 115.354(13)(C) § 115.354(13)(D) § 115.354(13)(E) § 115.354(13)(F) § 115.354(4) § 115.354(5) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(13)(D) § 115.354(13)(E) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) [G]§ 115.356(4) § 115.356(5)	[G]§ 115.358(g)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.352(5) § 115.352(6) § 115.352(7) § 115.352(8) § 115.357(8) § 115.358(c)(1) [G]§ 115.358(h)	that is subject to the requirements of this division but not specifically selected for alternative work practice monitoring.	§ 115.358(c)(2) § 115.358(d) [G]§ 115.358(e) § 115.358(f)		
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(2) § 115.352(9)	Each pressure relief valve equipped with a rupture disk must comply with §115.352(9) and §115.356(3)(C).	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(13)	Components/systems that contact a process fluid containing VOC having a true vapor pressure equal to or less than 0.002 psia at 68 degrees Fahrenheit are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(11)	Sampling connection systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet the requirements of 40 CFR §63.166(a) and (b) (June 20, 1996) are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(10)	Instrumentation systems, as defined in 40 CFR §63.161 (January 17, 1997), that meet 40 CFR §63.169 (June 20, 1996) are exempt	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						from the requirements of this division except §115.356(3)(C) of this title.			
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(5)	Reciprocating compressors and positive displacement pumps used in natural gas/gasoline processing operations are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(1) § 115.357(8)	No pump seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(12)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.357(8)				
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(12) § 115.357(8)	No pump seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(1) § 115.357(8)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(2) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(1) § 115.357(8)	No pump seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping	[G]§ 115.355	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.352(3) § 115.352(5) § 115.352(7) § 115.357(4) § 115.357(8)	or exuding of process fluid based on sight, smell, or sound.			
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(4) § 115.357(8)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	[G]§ 115.355	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(B) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(5) § 115.352(7) § 115.357(3) § 115.357(8)	No compressor seals shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 10,000 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	[G]§ 115.355	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A)	No agitators shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening	§ 115.354(1) § 115.354(10) § 115.354(5) § 115.354(6) § 115.354(9)	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2)	None

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(7) § 115.357(12) § 115.357(8)	concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	[G]§ 115.355 § 115.357(1)	§ 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(7) § 115.357(1) § 115.357(12) § 115.357(8)	No agitators shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(C) § 115.352(2)(C)(i) § 115.352(2)(C)(ii) § 115.352(2)(C)(iii) § 115.352(3) § 115.352(7) § 115.357(1) § 115.357(12) § 115.357(8)	No agitators shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet.	§ 115.352(1)(A) § 115.352(1)	No flanges or other connectors shall be allowed	§ 115.354(1) § 115.354(10)	§ 115.352(7) § 115.354(10)	None

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				Refinery & Petrochemicals	§ 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(8) § 115.357(12) § 115.357(8)	to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(11) § 115.354(3) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(8) § 115.357(1) § 115.357(12) § 115.357(8)	No flanges or other connectors shall be allowed to have a VOC leak, for more than 15 days after discovery which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(11) § 115.354(3) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(12) § 115.357(8) § 115.357(9)	No valves shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet.	§ 115.352(1)(A) § 115.352(1)	No valves shall be allowed to have a VOC leak, for	§ 115.354(1) § 115.354(2)	§ 115.352(7) § 115.356	[G]§ 115.354(7)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
				Refinery & Petrochemicals	§ 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(1) § 115.357(8) § 115.357(9)	more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355 § 115.357(1)	[G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(12) § 115.357(8) § 115.357(9)	No open-ended valves or lines shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(4) § 115.352(5) § 115.352(6) § 115.352(7) § 115.357(1)	No open-ended valves or lines shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(2) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.357(8) § 115.357(9)				
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B) § 115.352(3) § 115.352(5) § 115.352(7) § 115.352(9) § 115.357(12) § 115.357(8) § 115.357(9)	No pressure relief valves shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(2) § 115.354(4) § 115.354(5) § 115.354(6) [G]§ 115.354(7) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) [G]§ 115.356(3)(C) § 115.356(5)	[G]§ 115.354(7)
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.357(6)	Components at a petroleum refinery or synthetic organic chemical, polymer, resin, or methyl-tert-butyl ether manufacturing process, that contact a process fluid that contains less than 10% VOC by weight and components at a natural gas/gasoline processing operation that contact a process fluid that contains less than 1.0% VOC by weight are exempt from the requirements of this division except §115.356(3)(C) of this title.	None	§ 115.356 § 115.356(3) [G]§ 115.356(3)(C)	None
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(2)(B)	No pressure relief valves shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than	§ 115.354(1) § 115.354(2) § 115.354(4) § 115.354(5) § 115.354(6) [G]§ 115.354(7)	§ 115.352(7) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) [G]§ 115.356(3)(C)	[G]§ 115.354(7)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 115.352(3) § 115.352(5) § 115.352(7) § 115.352(9) § 115.357(1) § 115.357(8) § 115.357(9)	500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(9) [G]§ 115.355 § 115.357(1)	§ 115.356(5)	
RSETFUG	EU	R5352-ALL	VOC	30 TAC Chapter 115, Pet. Refinery & Petrochemicals	§ 115.352(1)(A) § 115.352(1) § 115.352(10) § 115.352(2) § 115.352(2)(A) § 115.352(3) § 115.352(7)	No process drains shall be allowed to have a VOC leak, for more than 15 days after discovery, which exceeds a screening concentration greater than 500 parts per million by volume above background as methane, or the dripping or exuding of process fluid based on sight, smell, or sound.	§ 115.354(1) § 115.354(10) § 115.354(5) § 115.354(6) § 115.354(9) [G]§ 115.355	§ 115.352(7) § 115.354(10) § 115.356 [G]§ 115.356(1) [G]§ 115.356(2) § 115.356(3) § 115.356(3)(A) § 115.356(3)(B) § 115.356(5)	None
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-8 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for flanges and other connectors. § 61.242-8(a)-(d)	[G]§ 61.242-8 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	§ 61.242-9 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d)	Each product accumulator vessel shall be equipped with a closed-vent system to capture and transport any leakage from the vessel to a control device as in §61.242-11, except in §61.242-1(c).	[G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-8 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d)	Comply with standards for pressure relief devices in liquid service. § 61.242-8(a)-(d)	[G]§ 61.242-8 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)

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					[G]§ 61.242-10			[G]§ 61.246(i) § 61.246(j)	
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-7 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10 [G]§ 61.243-1 [G]§ 61.243-2	Comply with standards for valves. §61.242-7(a)-(h)	[G]§ 61.242-7 [G]§ 61.243-1 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(f) [G]§ 61.246(g) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) § 61.247(d) [G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-6 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for open-ended valves or lines. §61.242-6(a)-(c)	[G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-5 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for sampling connection systems. §61.242-5(a)-(c)	[G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-4 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for pressure relief devices in gas/vapor service. §61.242-4(a)-(c)	[G]§ 61.242-4 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(e) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-3 § 61.242-1(a) § 61.242-1(b) § 61.242-1(d) [G]§ 61.242-10	Comply with standards for compressors. §61.242-3(a)-(i)	[G]§ 61.242-3 [G]§ 61.245(b) [G]§ 61.245(c) [G]§ 61.245(d)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c) [G]§ 61.246(e) [G]§ 61.246(h) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c) [G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	[G]§ 61.242-2 § 61.242-1(a) § 61.242-1(b)	Comply with standards for pumps. §61.242-2(a)-(g)	[G]§ 61.242-2 [G]§ 61.245(b) [G]§ 61.245(c)	[G]§ 61.246(a) [G]§ 61.246(b) [G]§ 61.246(c)	[G]§ 61.247(a) [G]§ 61.247(b) § 61.247(c)

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					§ 61.242-1(d) [G]§ 61.242-10		[G]§ 61.245(d)	[G]§ 61.246(e) [G]§ 61.246(h) [G]§ 61.246(i) § 61.246(j)	[G]§ 61.247(e)
RSETFUG	EU	61V-ALL	VHAP	40 CFR Part 61, Subpart V	§ 61.242-1(e)	Equipment that is in vacuum service is excluded from the requirements of §61.242-2 to §61.242-11, if it is identified as required in §61.246(e)(5).	None	[G]§ 61.246(e)	None
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.167 § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171 [G]§ 63.175	Standards: Open-ended valves or lines. §63.167(a)-(e).	[G]§ 63.175 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) § 63.181(h) [G]§ 63.181(h)(1) [G]§ 63.181(h)(2) § 63.181(h)(4) [G]§ 63.181(h)(5) § 63.181(h)(6) § 63.181(h)(7) [G]§ 63.181(i)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.168 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171 [G]§ 63.175	Standards: Valves in gas/vapor service and in light liquid service. §63.168(a)-(j)	[G]§ 63.168 [G]§ 63.175 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d) § 63.181(h) [G]§ 63.181(h)(1) [G]§ 63.181(h)(2) § 63.181(h)(4) [G]§ 63.181(h)(5) § 63.181(h)(6) § 63.181(h)(7)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.174 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g)	Standards: Connectors in gas/vapor service and in light liquid service. §63.174(a)-(j)	[G]§ 63.174 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4)

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					§ 63.162(h) [G]§ 63.171				[G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.173 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Agitators gas/vapor service and in light liquid service. §63.173(a)-(j).	[G]§ 63.173 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.170 § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Surge control vessels and bottom receivers.	[G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Pressure relief devices in liquid service. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Instrumentation systems. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Agitators in heavy liquid service. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d) [G]§ 63.181(i)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)

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RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Connectors in heavy liquid service. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d) [G]§ 63.181(i)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Valves in heavy liquid service. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d) [G]§ 63.181(i)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.169 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Pumps in heavy liquid service. §63.169(a)-(d)	[G]§ 63.169 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d) [G]§ 63.181(i)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.166 § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Sampling connection systems. §63.166(a)-(c)	[G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(i)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.165 § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171	Standards: Pressure relief device in gas/vapor service. §63.165(a)-(d)	[G]§ 63.165 [G]§ 63.180(b) [G]§ 63.180(c) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(f)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.164 § 63.162(a) § 63.162(c)	Standards: Compressors. §63.164(a)-(i)	[G]§ 63.164 [G]§ 63.180(b) [G]§ 63.180(c)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					[G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171		[G]§ 63.180(d)	[G]§ 63.181(d) [G]§ 63.181(f)	[G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	§ 63.162(e) § 63.162(a) § 63.162(c) [G]§ 63.162(g) § 63.162(h)	Equipment that is in organic HAP service less than 300 hours per year is excluded from the requirements of §§63.163 - 63.174 and §63.178 if it is identified as required in §63.181(j).	[G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(i) § 63.181(j)	[G]§ 63.182(a) [G]§ 63.182(b)
RSETFUG	EU	63H-ALL	112(B) HAPS	40 CFR Part 63, Subpart H	[G]§ 63.163 § 63.162(a) § 63.162(c) [G]§ 63.162(f) [G]§ 63.162(g) § 63.162(h) [G]§ 63.171 [G]§ 63.176	Standards: Pumps in light liquid service. §63.163(a)-(j)	[G]§ 63.163 [G]§ 63.176 [G]§ 63.180(b) [G]§ 63.180(d)	§ 63.181(a) [G]§ 63.181(b) § 63.181(c) [G]§ 63.181(d) § 63.181(h) [G]§ 63.181(h)(3) § 63.181(h)(4) [G]§ 63.181(h)(5) § 63.181(h)(6) § 63.181(h)(7) § 63.181(h)(8)	[G]§ 63.182(a) [G]§ 63.182(b) § 63.182(c) [G]§ 63.182(c)(1) § 63.182(c)(4) [G]§ 63.182(d)
RSETQ142	EU	R5112-003	VOC	30 TAC Chapter 115, Storage of VOCs	§ 115.111(a)(1)	Except as provided in § 115.118, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.	[G]§ 115.117	§ 115.118(a)(1) § 115.118(a)(5) § 115.118(a)(7)	None
UEHK10	EU	R7ICI-607	CO	30 TAC Chapter 117, Subchapter B	§ 117.110(c)(1) § 117.110(c) § 117.110(c)(1)(A) § 117.110(c)(3)	No person shall allow the discharge into the atmosphere from any boiler subject to NO _x emission specifications in § 117.110(a) CO in excess of 400 ppmv at 3.0% oxygen, dry basis, except	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(3) § 117.135(g)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(8) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						as provided in § 117.125 or § 117.110(c)(3).	§ 117.140(a)(2)(A) § 117.140(b)(1) § 117.140(b)(3) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(B)(iii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)		§ 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
UEHK10	EU	R7ICI-607	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.110(a)(1) § 117.110(a) § 117.110(b) [G]§ 117.110(b)(1) § 117.130(d) § 117.130(d)(1) § 117.140(k)	No person shall allow the discharge into the atmosphere from any gas-fired boilers with a maximum rated capacity equal to or greater than 40 MMBtu emissions of NO _x in excess of 0.10 lb/MMBtu of heat input.	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(2) § 117.135(g) § 117.140(a)(2)(A) § 117.140(b)(1) § 117.140(b)(3) § 117.140(c)(1) [G]§ 117.140(c)(3) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(i)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(8) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
							§ 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)		[G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
UEHK10	EU	60Db-005	NO _x	40 CFR Part 60, Subpart Db	§ 60.44b(e) § 60.44b(h) § 60.44b(i) § 60.46b(a)	Except in §60.44b(l), on/after §60.8 tests, no facility firing specified fuels shall discharge NO _x in excess of the specified formula, unless subject to federal ACF of 10% or less.	§ 60.46b(c) § 60.46b(e) § 60.46b(e)(1) [G]§ 60.48b(b) § 60.48b(c) § 60.48b(d) § 60.48b(e) [G]§ 60.48b(e)(2) § 60.48b(e)(3) § 60.48b(f)	[G]§ 60.48b(b) § 60.48b(c) [G]§ 60.49b(d) [G]§ 60.49b(g) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(2) § 60.49b(a)(3) § 60.49b(b) § 60.49b(i) § 60.49b(v) § 60.49b(w)
UEHK10	EU	60Db-005	PM	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
UEHK10	EU	60Db-005	PM (Opacity)	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)

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UEHK10	EU	60Db-005	SO ₂	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
UEHK11	EU	60Db-002x	PM	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
UEHK11	EU	60Db-002x	PM (Opacity)	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
UEHK11	EU	60Db-002x	SO ₂	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
UEHK11	EU	63DDDD D	112(B) HAPS	40 CFR Part 63, Subpart DDDDD	§ 63.7505 The permit holder shall comply with the applicable limitation, standard and/or	The permit holder shall comply with the applicable requirements of 40 CFR Part 63, Subpart DDDDD	The permit holder shall comply with the applicable monitoring and testing requirements of 40	The permit holder shall comply with the applicable recordkeeping requirements of 40	The permit holder shall comply with the applicable reporting requirements of 40 CFR Part 63, Subpart

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					equipment specification requirements of 40 CFR Part 63, Subpart DDDDD		CFR Part 63, Subpart DDDDD	CFR Part 63, Subpart DDDDD	DDDDD
UEHK9	EU	R7ICI-607	CO	30 TAC Chapter 117, Subchapter B	§ 117.110(c)(1) § 117.110(c) § 117.110(c)(1)(A) § 117.110(c)(3)	No person shall allow the discharge into the atmosphere from any boiler subject to NO _x emission specifications in § 117.110(a) CO in excess of 400 ppmv at 3.0% oxygen, dry basis, except as provided in § 117.125 or § 117.110(c)(3).	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d) § 117.135(f) § 117.135(f)(3) § 117.135(g) § 117.140(a)(2)(A) § 117.140(b)(1) § 117.140(b)(3) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(B)(iii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(8) § 117.145(f)(9) § 117.8100(a)(5)(C)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d) § 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
UEHK9	EU	R7ICI-607	NO _x	30 TAC Chapter 117, Subchapter B	§ 117.110(a)(1) § 117.110(a) § 117.110(b) [G]§ 117.110(b)(1) § 117.130(d)	No person shall allow the discharge into the atmosphere from any gas-fired boilers with a maximum rated capacity	[G]§ 117.135(a)(1) § 117.135(a)(4) § 117.135(b) § 117.135(c) § 117.135(d)	§ 117.145(a) § 117.145(f) [G]§ 117.145(f)(2) § 117.145(f)(8) § 117.145(f)(9)	§ 117.135(b) § 117.135(g) [G]§ 117.145(b) [G]§ 117.145(c) § 117.145(d)

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Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
					§ 117.130(d)(1) § 117.140(k)	equal to or greater than 40 MMBtu emissions of NO _x in excess of 0.10 lb/MMBtu of heat input.	§ 117.135(f) § 117.135(f)(2) § 117.135(g) § 117.140(a)(2)(A) § 117.140(b)(1) § 117.140(b)(3) § 117.140(c)(1) [G]§ 117.140(c)(3) § 117.140(e) § 117.8100(a) § 117.8100(a)(1) § 117.8100(a)(1)(A) § 117.8100(a)(1)(B) § 117.8100(a)(1)(B)(i) § 117.8100(a)(1)(B)(ii) § 117.8100(a)(1)(C) § 117.8100(a)(2) [G]§ 117.8100(a)(3) § 117.8100(a)(4) § 117.8100(a)(5) § 117.8100(a)(5)(A) § 117.8100(a)(5)(B) [G]§ 117.8100(a)(5)(D) [G]§ 117.8100(a)(5)(E) § 117.8100(a)(6)	§ 117.8100(a)(5)(C)	§ 117.145(d)(1) § 117.145(d)(2) § 117.145(d)(3) § 117.145(d)(4) § 117.145(d)(5) § 117.8010 [G]§ 117.8010(1) § 117.8010(2) § 117.8010(2)(A) § 117.8010(2)(B) § 117.8010(2)(C) § 117.8010(2)(D) [G]§ 117.8010(3) § 117.8010(4) [G]§ 117.8010(5) § 117.8010(6) [G]§ 117.8010(7) [G]§ 117.8010(8) § 117.8100(c)
UEHK9	EU	60Db-005	NO _x	40 CFR Part 60, Subpart Db	§ 60.44b(e) § 60.44b(h) § 60.44b(i) § 60.46b(a)	Except in §60.44b(l), on/after §60.8 tests, no facility firing specified fuels shall discharge NO _x in excess of the specified formula, unless subject to federal ACF of 10% or less.	§ 60.46b(c) § 60.46b(e) § 60.46b(e)(1) [G]§ 60.48b(b) § 60.48b(c) § 60.48b(d) § 60.48b(e) [G]§ 60.48b(e)(2) § 60.48b(e)(3) § 60.48b(f)	[G]§ 60.48b(b) § 60.48b(c) [G]§ 60.49b(d) [G]§ 60.49b(g) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(2) § 60.49b(a)(3) § 60.49b(b) § 60.49b(i) § 60.49b(v) § 60.49b(w)
UEHK9	EU	60Db-005	PM	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
						reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).			
UEHK9	EU	60Db-005	PM (Opacity)	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
UEHK9	EU	60Db-005	SO ₂	40 CFR Part 60, Subpart Db	§ 60.40b(a)	This subpart applies to each steam generating unit constructed, modified, or reconstructed after 6/19/84, and that has a heat input capacity from fuels combusted in the unit > 29 MW (100 MMBtu/hr).	None	[G]§ 60.49b(d) § 60.49b(o)	§ 60.49b(a) § 60.49b(a)(1) § 60.49b(a)(3)
UER037	EU	R1111-002	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period. Non-excessive upset events are subject to the provisions under §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
UER037	CD	60A-003	Opacity	40 CFR Part 60, Subpart A	§ 60.18(b) § 60.18(c)(1) § 60.18(c)(2) § 60.18(c)(3)(ii) § 60.18(c)(4)(i) § 60.18(c)(6) § 60.18(e)	Flares shall comply with paragraphs (c)-(f) of § 60.18.	§ 60.18(d) § 60.18(f)(1) § 60.18(f)(2) § 60.18(f)(3) § 60.18(f)(4)	None	None

Applicable Requirements Summary

Unit Group Process ID No.	Unit Group Process Type	SOP Index No.	Pollutant	State Rule or Federal Regulation Name	Emission Limitation, Standard or Equipment Specification Citation	Textual Description (See Special Term and Condition 1.B.)	Monitoring And Testing Requirements	Recordkeeping Requirements (30 TAC § 122.144)	Reporting Requirements (30 TAC § 122.145)
UER044	EU	R1111-002	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period. Non-excessive upset events are subject to the provisions under §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
UER044	CD	60A-003	Opacity	40 CFR Part 60, Subpart A	§ 60.18(b) § 60.18(c)(1) § 60.18(c)(2) § 60.18(c)(3)(ii) § 60.18(c)(4)(i) § 60.18(c)(6) § 60.18(e)	Flares shall comply with paragraphs (c)-(f) of § 60.18.	§ 60.18(d) § 60.18(f)(1) § 60.18(f)(2) § 60.18(f)(3) § 60.18(f)(4)	None	None
UER046	EU	R1111-002	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(4)(A)	Visible emissions from a process gas flare shall not be permitted for more than five minutes in any two-hour period. Non-excessive upset events are subject to the provisions under §101.222(b).	§ 111.111(a)(4)(A)(i) § 111.111(a)(4)(A)(ii)	§ 111.111(a)(4)(A)(ii)	None
UER046	CD	60A-003	Opacity	40 CFR Part 60, Subpart A	§ 60.18(b) § 60.18(c)(1) § 60.18(c)(2) § 60.18(c)(3)(ii) § 60.18(c)(4)(i) § 60.18(c)(6) § 60.18(e)	Flares shall comply with paragraphs (c)-(f) of § 60.18.	§ 60.18(d) § 60.18(f)(1) § 60.18(f)(2) § 60.18(f)(3) § 60.18(f)(4)	None	None

Additional Monitoring Requirements

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Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA3103	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-3
Pollutant: VOC	Main Standard: § 115.122(a)(2)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to measure and record fugitive emissions.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA3103	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-3
Pollutant: VOC	Main Standard: § 115.122(a)(2)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to conduct inspections or repair any defects in vapor collection system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA3205A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to measure and record fugitive emissions.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA3205A	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to conduct inspections or repair any defects in vapor collection system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA3205B	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to measure and record fugitive emissions.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA3205B	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to conduct inspections or repair any defects in vapor collection system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA357	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to measure and record fugitive emissions.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FA357	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to conduct inspections or repair any defects in vapor collection system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FO11	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to measure and record fugitive emissions.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3FO11	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Vent Gas Controls	SOP Index No.: R5121-6
Pollutant: VOC	Main Standard: § 115.122(a)(1)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to conduct inspections or repair any defects in vapor collection system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3TA339	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Storage of VOCs	SOP Index No.: R5112-005
Pollutant: VOC	Main Standard: § 115.112(a)(1)
Monitoring Information	
Indicator: Record of Tank Construction Specifications	
Minimum Frequency: N/A	
Averaging Period: N/A	
Deviation Limit: Records are not kept.	
Periodic Monitoring Text: Keep a record of tank construction specifications (e.g. engineering drawings) that show a fill pipe that extends from the top of a tank to have a maximum clearance of six inches (15.2 centimeters) from the bottom or, when the tank is loaded from the side, a discharge opening entirely submerged when the pipe used to withdraw liquid from the tank can no longer withdraw liquid in normal operation.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: A3TA339	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 115, Storage of VOCs	SOP Index No.: R5112-005
Pollutant: VOC	Main Standard: § 115.112(a)(1)
Monitoring Information	
Indicator: Structural Integrity of the Pipe	
Minimum Frequency: Emptied and degassed	
Averaging Period: N/A	
Deviation Limit: Fill pipe repairs not completed prior to refilling storage vessel.	
Periodic Monitoring Text: Inspect to determine the structural integrity of the fill pipe and record each time the storage vessel is emptied and degassed to ensure that it continues to meet the specifications in the above requirement. If the structural integrity of the fill pipe is in question, repairs shall be made before the storage vessel is refilled. It shall be considered and reported as a deviation if the repairs are not completed prior to refilling the storage vessel.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: GRPA3PH1	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 117, Subchapter B	SOP Index No.: R7ICI-503
Pollutant: CO	Main Standard: § 117.110(c)(1)
Monitoring Information	
Indicator: CO Concentration	
Minimum Frequency: Biennially (Every 2 years)	
Averaging Period: N/A	
Deviation Limit: Maximum CO concentration shall not exceed 400 ppmv at 3.0% O ₂ .	
Periodic Monitoring Text: For boilers or process heaters with a heat input capacity of less than 10 MMBtu/hr. but greater than 5 MMBtu/hr., you must conduct a tune-up biennially (every 2 years) as specified in 40 CFR 63 Subpart DDDDD, §63.7540(a)(11) and §63.7540(a)(10)(i)-(vi) to demonstrate continuous compliance. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: RSET087	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-36
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to measure and record fugitive emissions.	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: RSET087	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-36
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to conduct inspections or repair any defects in vapor collection system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: RSET088	
Control Device ID No.: UERO44	Control Device Type: Flare
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-36
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: VOC Concentration	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to measure and record fugitive emissions	
Periodic Monitoring Text: Measure and record fugitive emissions from the vapor collection system in accordance with part 60, appendix A, method 21.	

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: RSET088	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 40 CFR Part 60, Subpart Kb	SOP Index No.: 60Kb-36
Pollutant: VOC	Main Standard: [G]§ 60.112b(a)(3)
Monitoring Information	
Indicator: Visual Inspection	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Failure to conduct inspections or repair any defects in vapor collection system shall be considered and reported as a deviation.	
Periodic Monitoring Text: Visually inspect all components of the vapor collection system for defects, such as cracks, holes, gaps, loose connections, or broken or missing covers or other closure devices, that could result in air emissions.	

Permit Shield

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Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
0674	N/A	30 TAC Chapter 115, Storage of VOCs	Tank capacity is less than 1,000 gallons.
0674	N/A	40 CFR Part 60, Subpart Kb	Tank stores VOC (but not petroleum or petroleum liquids) and was constructed before 7/23/84 and has not been modified later than 7/23/84.
0674	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
961009	N/A	30 TAC Chapter 115, Storage of VOCs	Tank capacity is less than 1,000 gallons.
961009	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
961009	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
970183	N/A	30 TAC Chapter 115, Storage of VOCs	Tank capacity is less than 1,000 gallons.
970183	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
970183	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
A3HA33	N/A	40 CFR Part 63, Subpart DDDDD	Unit is a process heater that is used as a control device to comply with another standard. At least 50% of the average annual heat input is provided by regulated gas streams that are subject to another standard.
A3HA34	N/A	40 CFR Part 63, Subpart DDDDD	Unit is a process heater that is used as a control device to comply with another standard. At least 50% of the average annual heat input is provided by regulated gas streams that are

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
			subject to another standard.
A3HA35	N/A	40 CFR Part 60, Subpart Db	Boiler was constructed before 6/19/84 and has not been modified later than 6/19/84.
A3HA35	N/A	40 CFR Part 63, Subpart DDDDD	Unit is a waste heat boiler which is excluded from applicability based on the definition of a boiler.
A3TA329	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is greater than 75 cubic meters (19,813 gal) but less than 151 cubic meters (39,890 gal) and maximum true vapor pressure of the liquid stored is less than 15.0 kPa (2.2 psia).
A3TA329	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
A3TA339	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
A3TA339	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
A3TA346	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
A3TA346	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
CT-1	N/A	40 CFR Part 63, Subpart Q	Cooling tower is not operated with chromium-based water treatment chemicals from September 8, 1994.
CT-10	N/A	40 CFR Part 63, Subpart Q	Cooling tower is not operated with chromium-based water treatment chemicals from

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
			September 8, 1994.
CT-4	N/A	40 CFR Part 63, Subpart Q	Cooling tower is not operated with chromium-based water treatment chemicals from September 8, 1994.
FDU-1	N/A	40 CFR Part 60, Subpart Kb	Tank stores VOC (but not petroleum or petroleum liquids) and was constructed before 7/23/84 and has not been modified later than 7/23/84.
FDU-1	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
GRPA3PH1	A3HA31A, A3HA31B, A3HA31C, A3HA31D, A3HA31F, A3HA31G, A3HA31H, A3HA31J	40 CFR Part 60, Subpart RRR	Reactor process constructed before 6/29/90 and has not been modified later than 6/29/90.
GRPUTIC1	PU-10, PU-14A, PU-14B	30 TAC Chapter 117, Subchapter B	Unit was placed into service after November 15, 1992 and is not a functionally identical replacement.
GRPUTIC1	PU-10, PU-14A, PU-14B	40 CFR Part 60, Subpart IIII	Unit did not commence construction/reconstruction after 07/11/2005.
GRPUTTK1	880789, 961010, A3FA3215, MCST-3, R-CC-4T, R-S-42T, R-S-53T, T-L-797455	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
GRPUTTK1	880789, 961010, A3FA3215, MCST-3, R-CC-4T, R-S-42T, R-S-53T, T-L-797455	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
MCST-1	N/A	30 TAC Chapter 115, Storage of VOCs	Tank capacity is less than 1,000 gallons.
MCST-1	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
			(10,567 gallons).
MCST-1	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
MCST-2	N/A	30 TAC Chapter 115, Storage of VOCs	Tank capacity is less than 1,000 gallons.
MCST-2	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
MCST-2	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
P-Q-108	N/A	40 CFR Part 60, Subpart IIII	Unit did not commence construction or modification/reconstruction after 07/11/2005.
P-T-39	N/A	30 TAC Chapter 115, Storage of VOCs	Storage vessel is located at a motor vehicle fuel dispensing facility and has capacity less than 25,000 gallons.
P-T-39	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
P-T-39	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
PU-11	N/A	40 CFR Part 60, Subpart IIII	Unit did not commence construction/reconstruction after 07/11/2005.
R-CC-4	N/A	40 CFR Part 60, Subpart IIII	Unit did not commence construction/reconstruction after 07/11/2005.
R-S-42	N/A	40 CFR Part 60, Subpart IIII	Unit did not commence construction/reconstruction after 07/11/2005.
R-S-53	N/A	40 CFR Part 60, Subpart IIII	Unit did not commence construction/reconstruction after 07/11/2005.

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
R-S-53	N/A	40 CFR Part 63, Subpart ZZZZ	Unit is an existing emergency stationary RICE with a site rating >500 BHP located at a major source of HAP emissions that does not operate or not contractually obligated to be available more than 15 hours per calendar year as in 63.6640(f)(2)(ii)-(i)
RSELRVNTTW	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR Subpart F-transfer rack is not a HON Group 1 or Group 2 transfer rack.
RSET010	N/A	40 CFR Part 60, Subpart Kb	As HON Group 1 or Group 2 storage vessel, tank is required to comply only with the provisions of HON.
RSET0126	N/A	40 CFR Part 60, Subpart Kb	Tank stores VOC (but not petroleum or petroleum liquids) and was constructed before 7/23/84 and has not been modified later than 7/23/84.
RSET0126	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
RSET0127	N/A	40 CFR Part 60, Subpart Kb	Tank stores VOC (but not petroleum or petroleum liquids) and was constructed before 7/23/84 and has not been modified later than 7/23/84.
RSET0127	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63, Subpart F - tank is not a HON GROUP 1 or GROUP 2 storage vessel
RSET0180	N/A	40 CFR Part 60, Subpart Kb	As HON Group 1 or Group 2 storage vessel, tank is required to comply only with the provisions of HON.
RSET0204	N/A	40 CFR Part 60, Subpart Kb	As HON Group 1 or Group 2 storage vessel,

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Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
			tank is required to comply only with the provisions of HON.
RSET030	N/A	40 CFR Part 60, Subpart Kb	As HON Group 1 or Group 2 storage vessel, tank is required to comply only with the provisions of HON.
RSET039	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is greater than 151 cubic meters (39,890 gallons) and maximum true vapor pressure of the liquid stored is less than 3.5kPa (0.5 psia).
RSET039	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
RSET040	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is greater than 151 cubic meters (39,890 gallons) and maximum true vapor pressure of the liquid stored is less than 3.5kPa (0.5 psia).
RSET040	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
RSET087	N/A	30 TAC Chapter 115, Water Separation	Vessel is primarily a storage tank. As such, it complies with 30 TAC 115 storage vessel provisions and not 30 TAC 115 VOC water separator provisions.
RSET087	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
RSET088	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subject F-tank is not a HON Group 1 or Group 2 storage vessel.
RSETFUG	N/A	40 CFR Part 60, Subpart VV	For fugitive components, Huntsman has elected to comply with the requirements of 40 CFR 63,

Permit Shield

The Executive Director of the TCEQ has determined that the permit holder is not required to comply with the specific regulation(s) identified for each emission unit, group, or process in this table.

Unit / Group / Process ID No.	Group / Inclusive Units	Regulation	Basis of Determination
			Subpart H, and not the requirements of 40 CFR 60, Subpart VV.
RSETQ142	N/A	40 CFR Part 60, Subpart Kb	Tank capacity is less than 40 cubic meters (10,567 gallons).
RSETQ142	N/A	40 CFR Part 63, Subpart G	Not subject to 40 CFR 63 Subpart F-tank is not a HON Group 1 or Group 2 storage vessel.
UEHK10	N/A	40 CFR Part 63, Subpart DDDDD	Unit is a waste heat boiler which is excluded from applicability based on the definition of a boiler.
UEHK9	N/A	40 CFR Part 63, Subpart DDDDD	Unit is a waste heat boiler which is excluded from applicability based on the definition of a boiler.
UER037	N/A	40 CFR Part 63, Subpart A	Flare is not used to comply with applicable subparts of part 63.
UER044	N/A	40 CFR Part 63, Subpart A	Flare is not used to comply with applicable subparts of part 63.
UER046	N/A	40 CFR Part 63, Subpart A	Flare is not used to comply with applicable subparts of part 63.

New Source Review Authorization References

New Source Review Authorization References	119
New Source Review Authorization References by Emission Unit	121

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Prevention of Significant Deterioration (PSD) Permits	
PSD Permit No.: PSDTX780	Issuance Date: 01/15/2016
Title 30 TAC Chapter 116 Permits, Special Permits, and Other Authorizations (Other Than Permits By Rule, PSD Permits, or NA Permits) for the Application Area.	
Authorization No.: 16909	Issuance Date: 01/15/2016
Authorization No.: 19823	Issuance Date: 05/28/2019
Authorization No.: 29516	Issuance Date: 05/31/2018
Authorization No.: 49247	Issuance Date: 10/12/2020
Authorization No.: 56390	Issuance Date: 05/13/2014
Authorization No.: 83816	Issuance Date: 11/30/2020
Permits By Rule (30 TAC Chapter 106) for the Application Area	
Number: 5	Version No./Date: 09/23/1982
Number: 5	Version No./Date: 03/15/1985
Number: 5	Version No./Date: 11/05/1986
Number: 5	Version No./Date: 08/30/1988
Number: 5	Version No./Date: 07/20/1992
Number: 5	Version No./Date: 10/04/1995
Number: 14	Version No./Date: 01/08/1980
Number: 14	Version No./Date: 09/12/1989
Number: 51	Version No./Date: 11/05/1986
Number: 51	Version No./Date: 08/30/1988
Number: 51	Version No./Date: 07/20/1992
Number: 51	Version No./Date: 06/07/1996
Number: 58	Version No./Date: 01/08/1980
Number: 80	Version No./Date: 01/08/1980
Number: 86	Version No./Date: 07/20/1992
Number: 106.261	Version No./Date: 09/04/2000
Number: 106.262	Version No./Date: 09/04/2000
Number: 106.263	Version No./Date: 11/01/2001
Number: 106.264	Version No./Date: 09/04/2000
Number: 106.355	Version No./Date: 11/01/2001
Number: 106.371	Version No./Date: 09/04/2000
Number: 106.433	Version No./Date: 09/04/2000

New Source Review Authorization References

The New Source Review authorizations listed in the table below are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Number: 106.452	Version No./Date: 09/04/2000
Number: 106.454	Version No./Date: 11/01/2001
Number: 106.472	Version No./Date: 09/04/2000
Number: 106.473	Version No./Date: 03/14/1997
Number: 106.478	Version No./Date: 03/14/1997
Number: 106.511	Version No./Date: 03/14/1997

New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
0674	COOLING TOWER 4GREY METAL SLIMICIDE TANK	106.478/03/14/1997
880789	YELLOW FIBERGLASS BALANCED POLYMER TANK	51/11/05/1986
961009	BOILER HOUSE WHITE STEEL STEAMATE TANK	86/07/20/1992
961010	BOILER HOUSE WHITE STEEL STEAMATE TANK	86/07/20/1992
970183	COOLING TOWER 4 YELLOW FIBERGLASS DIANODIC TANK	51/11/05/1986
A3CA31A	TURBINE C-A3-1	19823
A3FA3103	DEMETHANIZER	19823
A3FA3205A	WASTEWATER STRIPPER	19823
A3FA3205B	WASTEWATER STRIPPER	19823
A3FA3215	DMDS TANK	19823
A3FA357	FUEL GAS MIXING DRUM	19823
A3FO11	F-O-11 COALESCER	19823
A3FUG	FUGITIVES	19823
A3HA31A	CRACKING HEATER	19823
A3HA31B	CRACKING HEATER	19823
A3HA31C	CRACKING HEATER	19823
A3HA31D	CRACKING HEATER	19823
A3HA31E	CRACKING HEATER	19823
A3HA31F	CRACKING HEATER	19823
A3HA31G	CRACKING HEATER	19823
A3HA31H	CRACKING HEATER	19823

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New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
A3HA31J	CRACKING HEATER	19823
A3HA33	HEATER H -A3-3	19823
A3HA34	HEATER H-A3-4	19823
A3HA35	WASTE HEAT BOILER	19823
A3TA329	TANK T-A3-29	19823
A3TA339	TANK T-A3-39	19823
A3TA346	TAR SETTLING TANK	19823
A3WASTE	A3 WASTE STREAMS	19823
CG1	37 MEGAWATT GE FRAME 6 GAS TURBINE	16909, PSDTX780
CG2	37 MEGAWATT GE FRAME 6 GAS TURBINE	16909, PSDTX780
CT-1	COOLING TOWER NO. 1	19823
CT-10	COOLING TOWER NO. 10	106.371/09/04/2000
CT-4	COOLING TOWER NO. 4	19823
FDU-1	DISEL FUEL DISPENSING TANK (GREY)	14/01/08/1980
MCST-1	YELLOW FIBERGLASS TANK BY MAINTANCE SHOP	106.473/03/14/1997
MCST-2	GRAY STEEL KEROSENE TANK SOUTH OF FUEL AREA	58/01/08/1980
MCST-3	GRAY STEEL DEGREASER SOLVENT TANK	80/01/08/1980
P-Q-108	FIREWATER PUMP	5/03/15/1985
P-T-39	GASOLINE UST FUEL DISPENSING TANK	14/09/12/1989
PROA3WW	A3 WASTEWATER TREATMENT PROCESS	19823
PRORSHON	R&S HON PROCESS	29516

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New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
PU-10	UTILITIES FIREWATER PUMP	106.511/03/14/1997
PU-11	UTILITIES FIREWATER PUMP	5/09/23/1982
PU-14A	UTILITIES FIREWATER PUMP	5/10/04/1995
PU-14B	UTILITIES FIREWATER PUMP	5/10/04/1995
R-CC-4	O&O CENTRAL EMERGENCY GENERATOR	5/11/05/1986
R-CC-4T	DIESEL TANK - O&O CENTRAL EMERGENCY GENERATOR	5/11/05/1986
R-S-42	UTILITIES BACKUP GENERATOR	5/08/30/1988
R-S-42T	DIESEL TANK - UTILITIES BACKUP GENERATOR	5/08/30/1988
R-S-53	JCO ADMIN. BLDG. EMERGENCY GENERATOR	5/07/20/1992
R-S-53T	DIESEL TANK - JCO ADMIN. BLDG. EMERGENCY GEN.	5/07/20/1992
RRFUG	RAILCAR HEEL EMISSIONS	56390
RSELRTRKW	ABOVE GROUND LOADING RACK	106.261/09/04/2000, 106.262/09/04/2000
RSELRVNTTW	VENT CONDENSATE T/W LOADING	106.472/09/04/2000
RSET010	TANK T-0-10 FUGITIVES	29516
RSET0126	AROMATIC DISTILLATE TANK	19823
RSET0127	AROMATIC DISTILLATE TANK	19823
RSET0180	TANK T-0-180 FUGITIVES	29516
RSET0204	TANK T-0-204	29516
RSET030	TANK T-0-30-FUGITIVES	29516
RSET039	TANK T-O-39	19823
RSET040	TANK T-O-40	19823

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New Source Review Authorization References by Emissions Unit

The following is a list of New Source Review (NSR) authorizations for emission units listed elsewhere in this operating permit. The NSR authorizations are applicable requirements under 30 TAC Chapter 122 and enforceable under this operating permit.

Unit/Group/Process ID No.	Emission Unit Name/Description	New Source Review Authorization
RSET087	TANK T-O-87	19823
RSET088	TANK T-O-88	19823
RSETFUG	R&S FUGITIVES	29516
RSETQ142	FLUSH COLLECTION TANK	106.472/09/04/2000
T-L-797455	YELLOW FIBERGLASS ANTIFOAM TANK	106.473/03/14/1997
UEHK10	HRSG HK10	16909, PSDTX780
UEHK11	BOILER HK-11	16909, PSDTX780
UEHK9	HRSG-HK9	16909, PSDTX780
UER037	FLARE NO. 3	19823
UER044	FLARE NO. 1	19823
UER046	FLARE NO. 2	19823

Appendix A

Acronym List 126

Acronym List

The following abbreviations or acronyms may be used in this permit:

ACFM	actual cubic feet per minute
AMOC	alternate means of control
ARP	Acid Rain Program
ASTM	American Society of Testing and Materials
B/PA	Beaumont/Port Arthur (nonattainment area)
CAM	Compliance Assurance Monitoring
CD	control device
COMS	continuous opacity monitoring system
CVS	closed-vent system
D/FW	Dallas/Fort Worth (nonattainment area)
DR	Designated Representative
EIP	El Paso (nonattainment area)
EP	emission point
EPA	U.S. Environmental Protection Agency
EU	emission unit
FCAA Amendments	Federal Clean Air Act Amendments
FOP	federal operating permit
GF	grandfathered
gr/100 scf	grains per 100 standard cubic feet
HAP	hazardous air pollutant
H/G/B	Houston/Galveston/Brazoria (nonattainment area)
H ₂ S	hydrogen sulfide
ID No.	identification number
lb/hr	pound(s) per hour
MMBtu/hr	Million British thermal units per hour
MRRT	monitoring, recordkeeping, reporting, and testing
NA	nonattainment
N/A	not applicable
NADB	National Allowance Data Base
NO _x	nitrogen oxides
NSPS	New Source Performance Standard (40 CFR Part 60)
NSR	New Source Review
ORIS	Office of Regulatory Information Systems
Pb	lead
PBR	Permit By Rule
PM	particulate matter
ppmv	parts per million by volume
PSD	prevention of significant deterioration
RO	Responsible Official
SO ₂	sulfur dioxide
TCEQ	Texas Commission on Environmental Quality
TSP	total suspended particulate
TVP	true vapor pressure
U.S.C.	United States Code
VOC	volatile organic compound

Appendix B

Major NSR Summary Table 128

Major NSR Summary Table

Permit Number: 16909 / PSDTX780					Issuance Date: 01/15/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (5)	Spec. Cond.	Spec. Cond.	Spec. Cond.
CG1 (4)	37 Megawatt GE Frame 6 Gas Turbine and 212 MMBtu/hr Duct Burner	NO _x	66.70	---	2, 8, 9, 10, 12, 14, 15	2, 3, 9, 10, 12, 14, 15, 17, 18	2, 10, 12, 18
		CO	31.50	---			
		VOC	2.50	---			
		SO ₂	8.20	---			
		SO ₃	0.30	---			
		PM ₁₀	4.00	---			
		PM _{2.5}	4.00	---			
CG2 (4)	37 Megawatt GE Frame 6 Gas Turbine and 212 MMBtu/hr Duct Burner	NO _x	66.70	---	2, 8, 9, 10, 12, 14, 15	2, 3, 9, 10, 12, 14, 15, 17, 18	2, 10, 12, 18
		CO	31.50	---			
		VOC	2.50	---			
		SO ₂	8.20	---			
		SO ₃	0.30	---			
		PM ₁₀	4.00	---			
		PM _{2.5}	4.00	---			

Major NSR Summary Table

Permit Number: 16909 / PSDTX780					Issuance Date: 01/15/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (5)	Spec. Cond.	Spec. Cond.	Spec. Cond.
CG1 (4)	37 Megawatt GE Frame 6 Gas Turbine and 250 MMBtu/hr Duct Burner	NO _x	70.41	---	6	17	
		CO	34.10	---			
		VOC	2.76	---			
		SO ₂	8.68	---			
		SO ₃	0.32	---			
		PM ₁₀	4.26	---			
		PM _{2.5}	4.26	---			
CG2 (4)	37 Megawatt GE Frame 6 Gas Turbine and 250 MMBtu/hr Duct Burner	NO _x	70.41	---	6	17	
		CO	34.10	---			
		VOC	2.76	---			
		SO ₂	8.68	---			
		SO ₃	0.32	---			
		PM ₁₀	4.26	---			
		PM _{2.5}	4.26	---			

Major NSR Summary Table

Permit Number: 16909 / PSDTX780					Issuance Date: 01/15/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (5)	Spec. Cond.	Spec. Cond.	Spec. Cond.
CG1 (4)	37 Megawatt GE Frame 6 Gas Turbine and Duct Burner	NO _x	---	259.93	2, 6, 8, 9, 10, 12, 14, 15	2, 3, 9, 10, 12, 14, 15, 17, 18	2, 10, 12, 18
		CO	---	123.35			
		VOC	---	9.26			
		SO ₂	---	31.92			
		SO ₃	---	1.20			
		PM ₁₀	---	16.66			
		PM _{2.5}	---	16.66			
CG2 (4)	37 Megawatt GE Frame 6 Gas Turbine and Duct Burner	NO _x	---	259.93	2, 6, 8, 9, 10, 12, 14, 15	2, 3, 9, 10, 12, 14, 15, 17, 18	2, 10, 12, 18
		CO	---	123.35			
		VOC	---	9.26			
		SO ₂	---	31.92			
		SO ₃	---	1.20			
		PM ₁₀	---	16.66			
		PM _{2.5}	---	16.66			

Major NSR Summary Table

Permit Number: 16909 / PSDTX780					Issuance Date: 01/15/2016		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (5)	Spec. Cond.	Spec. Cond.	Spec. Cond.
UEHK11	Boiler No. 11	NO _x	14.3	62.4	2, 8, 9, 11, 16	2, 3, 9, 11, 16, 17, 19	2, 11, 16, 19
		CO	20.8	91.0			
		VOC	0.9	3.8			
		SO ₂	3.2	14.0			
		PM ₁₀	2.9	12.5			
		PM _{2.5}	2.9	12.5			

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1

NO_x - total oxides of nitrogen

SO₂ - sulfur dioxide

SO₃ - sulfur trioxide

PM₁₀ - total particulate matter equal to or less than 10 microns in diameter, including PM_{2.5}, as represented. Where PM is not listed, is shall be assumed that no PM greater than 10 microns is emitted.

PM_{2.5} - particulate matter equal to or less than 2.5 microns in diameter

CO - carbon monoxide

(4) Turbine (CG1 and CG2) hourly emissions are based on 20°F ambient temperature and annual emissions are based on 66.5°F ambient temperature.

(5) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period. Annual emissions include those due to higher and lower duct burner firing rates.

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**Texas Commission on Environmental Quality
Air Quality Permit**

A Permit Is Hereby Issued To
Huntsman Petrochemical, LLC
Authorizing the Construction and Operation of
Huntsman Port Neches Facility
Located at Port Neches, Jefferson County, Texas
Latitude 29° 57' 36" Longitude -93° 55' 48"

Permits: 16909 and PSDTX780

Amendment Date: January 15, 2016

Expiration Date: July 11, 2024

A handwritten signature in black ink, appearing to read "R. Q. A. Hylb".

For the Commission

1. **Facilities** covered by this permit shall be constructed and operated as specified in the application for the permit. All representations regarding construction plans and operation procedures contained in the permit application shall be conditions upon which the permit is issued. Variations from these representations shall be unlawful unless the permit holder first makes application to the Texas Commission on Environmental Quality (commission) Executive Director to amend this permit in that regard and such amendment is approved. [Title 30 Texas Administrative Code (TAC) Section 116.116 (30 TAC § 116.116)]¹
2. **Voiding of Permit.** A permit or permit amendment is automatically void if the holder fails to begin construction within 18 months of the date of issuance, discontinues construction for more than 18 months prior to completion, or fails to complete construction within a reasonable time. Upon request, the executive director may grant an 18-month extension. Before the extension is granted the permit may be subject to revision based on best available control technology, lowest achievable emission rate, and netting or offsets as applicable. One additional extension of up to 18 months may be granted if the permit holder demonstrates that emissions from the facility will comply with all rules and regulations of the commission, the intent of the Texas Clean Air Act (TCAA), including protection of the public's health and physical property; and (b)(1) the permit holder is a party to litigation not of the permit holder's initiation regarding the issuance of the permit; or (b)(2) the permit holder has spent, or committed to spend, at least 10 percent of the estimated total cost of the project up to a maximum of \$5 million. A permit holder granted an extension under subsection (b)(1) of this section may receive one subsequent extension if the permit holder meets the conditions of subsection (b)(2) of this section. [30 TAC § 116.120]
3. **Construction Progress.** Start of construction, construction interruptions exceeding 45 days, and completion of construction shall be reported to the appropriate regional office of the commission not later than 15 working days after occurrence of the event. [30 TAC § 116.115(b)(2)(A)]
4. **Start-up Notification.** The appropriate air program regional office shall be notified prior to the commencement of operations of the facilities authorized by the permit in such a manner that a representative of the commission may be present. The permit holder shall provide a separate notification for the commencement of operations for each unit of phased construction, which may involve a series of units commencing operations at different times. Prior to operation of the facilities authorized by the permit, the permit holder shall identify the source or sources of allowances to be utilized for compliance with Chapter 101, Subchapter H, Division 3 of this title (relating to Mass Emissions Cap and Trade Program). [30 TAC § 116.115(b)(2)(B)]
5. **Sampling Requirements.** If sampling is required, the permit holder shall contact the commission's Office of Compliance and Enforcement prior to sampling to obtain the proper data forms and procedures. All sampling and testing procedures must be approved by the executive director and coordinated with the regional representatives of the commission. The permit holder is also responsible for providing sampling

facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.115(b)(2)(C)]

6. **Equivalency of Methods.** The permit holder must demonstrate or otherwise justify the equivalency of emission control methods, sampling or other emission testing methods, and monitoring methods proposed as alternatives to methods indicated in the conditions of the permit. Alternative methods shall be applied for in writing and must be reviewed and approved by the executive director prior to their use in fulfilling any requirements of the permit. [30 TAC § 116.115(b)(2)(D)]
7. **Recordkeeping.** The permit holder shall maintain a copy of the permit along with records containing the information and data sufficient to demonstrate compliance with the permit, including production records and operating hours; keep all required records in a file at the plant site. If, however, the facility normally operates unattended, records shall be maintained at the nearest staffed location within Texas specified in the application; make the records available at the request of personnel from the commission or any air pollution control program having jurisdiction in a timely manner; comply with any additional recordkeeping requirements specified in special conditions in the permit; and retain information in the file for at least two years following the date that the information or data is obtained. [30 TAC § 116.115(b)(2)(E)]
8. **Maximum Allowable Emission Rates.** The total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled "Emission Sources--Maximum Allowable Emission Rates." [30 TAC § 116.115(b)(2)(F)]¹
9. **Maintenance of Emission Control.** The permitted facilities shall not be operated unless all air pollution emission capture and abatement equipment is maintained in good working order and operating properly during normal facility operations. The permit holder shall provide notification in accordance with 30 TAC §101.201, 101.211, and 101.221 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping Requirements; and Operational Requirements). [30 TAC§ 116.115(b)(2)(G)]
10. **Compliance with Rules.** Acceptance of a permit by an applicant constitutes an acknowledgment and agreement that the permit holder will comply with all rules and orders of the commission issued in conformity with the TCAA and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated. Acceptance includes consent to the entrance of commission employees and agents into the permitted premises at reasonable times to investigate conditions relating to the emission or concentration of air contaminants, including compliance with the permit. [30 TAC § 116.115(b)(2)(H)]
11. **This** permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
12. **There** may be additional special conditions attached to a permit upon issuance or modification of the permit. Such conditions in a permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.115(c)]
13. **Emissions** from this facility must not cause or contribute to "air pollution" as defined in Texas Health and Safety Code (THSC) §382.003(3) or violate THSC § 382.085. If the executive director determines that such a condition or violation occurs, the holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
14. **The** permit holder shall comply with all the requirements of this permit. Emissions that exceed the limits of this permit are not authorized and are violations of this permit.¹

¹ Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

Special Conditions

Permit Numbers 16909 and PSDTX780

1. This permit covers only those sources of emissions listed in the attached table entitled "Emissions Sources - Maximum Allowable Emission Rates" (MAERT), and those sources are limited to the emission limits and other conditions specified in the attached table. Planned maintenance, startup, and shutdown (MSS) activities for the facilities authorized by this permit are separately authorized under New Source Review Permit No. 83816.

Federal Applicability

2. The sources identified in this condition are subject to and shall comply with the applicable requirements in Title 40 Code of Federal Regulations (40 CFR) Part 60, New Source Performance Standards (NSPS) as follows. If any condition of this permit is more stringent than the regulation so incorporated, then for the purposes of complying with this permit the permit condition shall govern and be the standard by which compliance shall be demonstrated.

Source	Emission Point No. (EPN)	Subpart	Standards of Performance for:
Gas Turbines/Heat Recovery Steam Generator (HRSG) Duct Burners	CG1 and CG2	Db	Industrial Steam Generating Units
Gas Turbines/HRSG Duct Burners	CG1 and CG2	GG	Stationary Gas Turbines
Boiler No. 11	UEHK11	Db	Industrial Steam Generating Units
All of the above sources		A	General Conditions

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

- A. The facility identification numbers as submitted to the Emissions Assessment Section of the Texas Commission on Environmental Quality (TCEQ).
- B. The EPNs as listed on the MAERT.

Emission Standards and Operating Specifications

4. Emissions from the gas turbines and HRSG duct burners (EPNs CG1 and CG2) shall not exceed the following except during startup and shutdown³:

Mode of Operation	Nitrogen Oxides (NO _x)	Carbon Monoxide (CO)
Turbine Only ¹	25 parts per million volume dry (ppmvd) ²	25 ppmvd ²
Duct Burner Only	0.10 pounds per million British thermal units (lb/MMBtu) ⁴	0.07 lb/MMBtu ⁴
Turbine and Duct Burner ⁵	26.0 ppmvd ²	27.5 ppmvd ²

¹ Measured concentrations in the exhaust stack prior to the duct burners.

² On a dry basis at 15 percent oxygen (O₂).

³ Startup and shutdown shall not exceed four hours.

⁴ Based on the higher heating value of the fuel.

⁵ Measured concentrations in the exhaust stack after the duct burners.

5. The amount of electricity produced from each cogeneration unit is limited as follows:

Product	Short-Term Production Rate ¹	Annual Production Rate ²
Electricity	43 Megawatt-hours (MW-hr)	3.153 x 10 ⁵ MW-hr/yr

¹ Based on 20°F ambient temperature.

² Based on 66.5°F average annual temperature and a 12-month rolling average.

6. The higher firing rate of each HRSG duct burner of 250 million British thermal units per hour (MMBtu/hr) is limited to 500 hours per year. At all other times, the firing rate of each HRSG duct burner is limited to 212 MMBtu/hr. Both rates are to be based on the higher heating value of the fuel. **(01/16)**

7. Emissions from Boiler No. 11 (EPN UEHK11) shall not exceed the following:

- A. NO_x: 0.05 lb/MMBtu, based upon the higher heating value of the fuel on an hourly basis corrected as specified in 40 CFR Part 60, Appendix A, Method 19.
- B. CO: 100 ppmvd at 3 percent (by volume) stack gas (O₂), averaged over a one-hour period.

8. Fuel fired at this facility is limited as follows. The use of any other fuels will require an authorization under 30 TAC Chapter 106 or 116. Upon request by the Executive Director of the TCEQ or any local air pollution control program having jurisdiction, the holder of this permit shall provide a sample and/or an analysis of the fuels fired in Boiler No. 11 (EPN UEHK11) or shall allow air pollution control agency representatives to obtain a sample for analysis.

- A. Fuel fired in the two Gas Turbines (EPNs CG1 and CG2) is limited to pipeline-quality, sweet natural gas containing no more than 2.0 grains of hydrogen sulfide (H₂S) and 4.0 grains of total sulfur per 100 dry standard cubic feet (dscf).
- B. Fuel fired in the two HRSG Duct Burners (EPNs CG1 and CG2) is limited to natural gas that meets the requirements of Special Condition No. 8A or plant fuel gas

containing no more than 2.0 grains of H₂S and 4.0 grains of total sulfur per 100 dscf.

- C. The holder of this permit shall monitor the sulfur content of the fuel gas-fired in the Gas Turbine (EPNs CG1 and CG2) in accordance with NSPS Subpart GG or on a custom sampling schedule approved by the TCEQ and EPA.
- D. Fuel used in Boiler No. 11 (EPN UEHK11) shall be limited to pipeline-quality, sweet natural gas and/or fuel mix gas containing no more than 4.0 grains of total sulfur per 100 dscf.

9. Opacity of emissions from any one stack authorized by this permit shall not exceed five percent averaged over a six-minute period from each stack. This determination shall be made by first observing for visible emissions while each facility is in operation. Observations shall be made at least 15 feet and no more than 0.25 miles from the emission point(s). Up to three emissions points may be read concurrently, provided that all three emissions points are within a 70 degree viewing sector or angle in front of the observer such that the proper sun position (at the observer's back) can be maintained for all three emission points. If visible emissions are observed from an emission point, then the opacity shall be determined and documented within 24 hours for that emission point using 40 CFR Part 60, Appendix A, Test Method 9. Observations shall be performed and recorded quarterly. If the opacity exceeds five percent, corrective action to eliminate the source of visible emissions shall be taken promptly and documented within one week of first observation.

Initial Determination of Compliance for the Cogeneration Facility (EPNs CG1 and CG2)

10. The holder of this permit shall perform stack sampling and other testing as required to initially establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the gas turbine. Sampling must be conducted in accordance with appropriate procedures of the TCEQ Sampling Procedures Manual and in accordance with EPA Test Method No. 9 for opacity (consisting of 30 six-minute readings as provided in 40 CFR § 60.11[b]), Test Method No. 10 for the concentration of CO, Test Method No. 5 for the concentration of particulate matter (PM), and Test Method No. 20 for the concentrations of NO_x and O₂. For gaseous fuel, sampling shall be conducted according to one of the appropriate test methods specified in 40 CFR § 60.335(b) to demonstrate initial compliance with the sulfur dioxide (SO₂) limits in the MAERT and the fuel sulfur limits of Special Conditions Nos. 8A and 8B.

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

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

The notice shall include:

- 1) Date for pretest meeting.
- 2) Date sampling will occur.

- 3) Name of firm conducting sampling.
- 4) Type of sampling equipment to be used.
- 5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review and formalize the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, to identify each operating parameter which is significant to maintaining emission compliance, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in this permit condition or any TCEQ or the EPA sampling procedures shall be made available to the TCEQ at or prior to the pretest meeting. The TCEQ Regional Director shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in Special Condition No. 10B shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure proposals for NSPS testing which must have the EPA approval shall be submitted to the TCEQ Regional Office. Any equivalent test procedures or any test waivers must be approved by the TCEQ prior to the date required in Special Condition No. 10E for conducting the tests.

- B. Air emissions from gas turbines to be tested for at full load include (but are not limited to) the following: NO_x, O₂, CO, PM, and opacity. This testing will be used to demonstrate compliance with the MAERT and Special Condition No. 4.
- C. The NO_x, O₂, CO, and PM from the gas turbines shall be sampled concurrently at four premix mode turbine loads, including the minimum and maximum load point in the premix mode. Maximum loads are the maximums achievable for the atmospheric conditions occurring during the test. The NO_x and CO concentrations shall be corrected and reported according to Special Condition No. 4. This testing will be used to demonstrate initial compliance with the MAERT and Special Condition No. 4.
- D. The NO_x, CO, and O₂ shall be measured simultaneously upstream and downstream of the duct burner. The PM shall be measured downstream only while the turbines and duct burners are firing at the maximum combined rate for the ambient conditions occurring during the test. The duct burner NO_x and CO emission rates shall be determined by Test Method No. 19.
- E. Sampling shall occur within 60 days after achieving the maximum production rate at which the turbines will be operated, but no later than 180 days after initial start-up of the turbines. Additional sampling shall occur as may be required by the TCEQ.
- F. Within 60 days after the completion of the testing and sampling required herein, copies of the sampling report shall be distributed as follows:

One copy to the TCEQ Beaumont Regional Office.

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

One copy to the EPA Region 6 Office in Dallas.

Initial Determination of Compliance for Boiler No. 11 (EPN UEHK11)

11. The holder of this permit shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from Boiler No. 11 under two scenarios: (1) firing 100 percent natural gas and (2) firing 100 percent fuel mix gas. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and in accordance with the appropriate EPA Test Methods.

Fuel sampling using the methods and procedures of 40 CFR § 60.335(d) may be conducted in lieu of stack sampling for SO₂. If fuel sampling is used, compliance shall be based on 100 percent conversion of the sulfur in the fuel to SO₂. Any deviations from those procedures must be approved by the Executive Director of the TCEQ prior to sampling. The TCEQ Executive Director or her designated representative shall be afforded the opportunity to observe all such sampling. The holder of this permit is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense.

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

The notice shall include:

- 1) Date for pretest meeting.
- 2) Date sampling will occur.
- 3) Name of firm conducting sampling.
- 4) Type of sampling equipment to be used.
- 5) Method or procedure to be used in sampling.
- 6) Procedure used to determine Boiler No. 11 loads during and after the sampling period.

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

- B. Air contaminants emitted from Boiler No. 11 to be tested for while firing under two scenarios (1) firing 100 percent natural gas and (2) firing 100 percent fuel mix gas including (but are not limited to) NO_x, CO, SO₂, O₂, and opacity.

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- C. Sampling while firing 100 percent fuel mix gas shall occur within 60 days after initial start-up of the facilities. Sampling while firing 100 percent natural gas shall occur no later than the next scheduled shutdown of the A-3 Olefins Unit. Sample may also occur at such other times as may be required by the Executive Director of the TCEQ. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires EPA approval, and requests shall be submitted to the TCEQ Regional Office.
- D. The plant shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the plant is unable to operate at maximum rates during testing, then future production rates are limited to the rates established during testing, and the permit holder will apply for a permit alteration to reduce the allowable mass emission rates according. Additional stack testing may be required when higher production rates are achieved.
- E. Three copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached conditions of Chapter 14 of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:
 - One copy to the TCEQ Beaumont Regional Office.
 - One copy to the TCEQ Austin Office of Air, Air Permits Division.
 - One copy to the EPA Region 6 Office in Dallas.

Continuous Demonstration of Compliance for the Cogeneration Facility (EPNs CG1 and CG2)

- 12. The holder of this permit shall install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) to:
 - A. Measure and record the concentrations of NO_x and O₂ at the exhaust stack.
 - B. Measure and record the concentration of CO in the exhaust stack.
 - C. Measure and record ambient temperature and fuel flow to the gas turbines and duct burners.
 - D. The NO_x and CO concentrations shall be corrected and reported according to Special Condition No. 4.
 - E. The CEMS required in Special Condition Nos. 12A and 12B shall comply with the following requirements:
 - 1) The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and data analysis and reporting requirements specified in the applicable performance specifications in 40 CFR Part 60, Appendix B. The performance specification tests shall be conducted during the sampling required by Special Condition No. 10 and

- written copies of the results shall be submitted within 60 days of completion of the tests to the TCEQ Beaumont Regional Office and the TCEQ Office of Air, Air Permits Division in Austin.
- 2) The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceed two times the amounts specified in 40 CFR Part 60, Appendix B. Each gaseous monitor shall be quality-assured at least quarterly in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.2. A cylinder gas audit (CGA) may be performed in lieu of the annual relative accuracy test audits. An equivalent method approved by the TCEQ and the EPA may be used.
 - 3) Each NO_x, CO, and O₂ CEMS shall complete a minimum of one cycle of sampling, analyzing, and data recording for each successive 15-minute period. One-hour averages shall be computed from normally at least four and at a minimum of two data points equally-spaced over each one-hour period. Data recorded during periods of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in the computed data averages. The gaseous monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. At least 23 hourly averages shall be generated per day. The gaseous monitoring data shall be reduced to units of the permit allowable emission rate at least once every day.
 - 4) All CGA exceedances greater than ± 15 percent accuracy and any unscheduled CEMS downtime in excess of 48 hours shall be reported to the TCEQ Beaumont Regional Office, and necessary corrective action shall be taken. Unscheduled CEMS downtime is any CEMS downtime not required for daily zero and span checks and quarterly CGAs. Supplemental stack concentration measurements may be required at the discretion of the TCEQ Regional Director or the EPA.
13. The holder of this permit shall install, operate, and maintain a turbine control system that will maintain NO_x and CO levels within the limits specified in Special Condition No. 4.
 14. The holder of this permit shall install, calibrate, maintain, and operate a continuous monitoring system to:
 - A. Measure and record the amount of steam produced from each HRSG in pounds per hour (lbs/hr).
 - B. Measure and record the amount of electricity produced from each cogeneration unit in MW-hours.
 15. After the demonstration of initial compliance required in Special Condition No. 10, the CEMS required in Special Condition No. 12 shall constitute the methods for demonstrating continuous compliance with the standards. The CEMS will be used to evaluate compliance with the emission limitations in the MAERT and Special Condition Nos. 2, and 4. The fuel sulfur monitoring required in Special Condition No. 8C shall constitute the

method of demonstrating continuous compliance with the emission limitations in the MAERT and Special Condition Nos. 8A and 8B.

Continuous Determination of Compliance for Boiler No. 11 (EPN UEHK11)

16. In order to demonstrate continuous compliance with the NO_x and CO limits of Special Condition No. 7 and the MAERT for Boiler No. 11 (EPN UEHK11), the holder of this permit shall comply with the monitoring conditions of 40 CFR § 60.48b.

The CEMS used to measure and record the in-stack concentration of NO_x, CO, and O₂ from Boiler No. 11 shall be installed, calibrated, and maintained in accordance with the requirements of 40 CFR §§ 60.13 and 60.48(b). In addition, the holder of this permit shall comply with the following:

- A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and data analysis and reporting requirements specified in the applicable Performance Specifications in 40 CFR Part 60, Appendix B. The Performance Specification tests shall be conducted prior to or during the sampling required by Special Condition No. 11, and written copies of the results shall be submitted within 60 days of completion of the tests to the TCEQ Beaumont Regional Office and the TCEQ Air Permits Division in Austin.
- B. The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in 40 CFR Part 60, Appendix B. Each gaseous monitor shall be quality-assured at least quarterly using CGA. The CGA method to be used is contained in 40 CFR Part 60, Appendix F, Procedure 1.
- C. The gaseous monitoring data shall be reduced to hourly average concentrations at least once every day, using a minimum of four equally-spaced data points from each one-hour period. At least 23 hourly averages shall be generated per day.
- D. All CGA exceedances greater than ± 15 percent accuracy and any unscheduled CEMS downtime in excess of 48 hours shall be reported to the TCEQ Beaumont Regional Office within 24 hours of detection, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the TCEQ Regional Director.
- E. The CEMS shall demonstrate a system reliability of at least 90 percent based on an annual rolling period (downtime does not include daily zero and span measurement time or unit downtime), or options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Beaumont Regional Director.

Recordkeeping Requirements

- 17. The following information shall be made and maintained by the holder of this permit for a period of five years rather than the two-year period specified in General Condition No. 7

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and shall be made available on request to representatives of the TCEQ, the EPA, or any local air pollution control program having jurisdiction:

- A. A copy of this permit shall be kept at the plant site and made available at the request of personnel from the TCEQ or any air pollution control agency with jurisdiction.
- B. Recordkeeping requirements for EPNs CG1 and CG2 are as follows:
 - 1) Block hourly average NO_x, CO, and O₂ concentrations which are monitored pursuant to Special Condition No. 12.
 - 2) The results of all fuel sampling conducted pursuant to Special Condition No. 8C.
 - 3) The results of all stack tests conducted pursuant to Special Condition No. 11.
 - 4) The holder of this permit shall maintain a raw data file of all CEMS measurements, including CEMS performance testing measurements: all CEMS calibration checks and adjustments and maintenance performed on these systems in permanent form suitable for inspection.
 - 5) The time and date of all turbine startups and shutdowns.
 - 6) The hourly and annual electricity production rate which is monitored pursuant to Special Condition No. 12.
 - 7) The hourly firing rate of each HRSG duct burner pursuant to Special Condition No. 6, including the total number of hours at the higher firing rate for each HRSG duct burner. **(01/16)**
- C. Recordkeeping requirements for EPN UEHK11:
 - 1) The block one-hour average CO concentrations in ppmvd, the block one-hour average NO_x emissions in lb/MMBtu of heat input, and the average emissions of NO_x and CO reported in units of lbs/hr and TPY for Boiler No. 11.
 - 2) Records of initial performance test shall be maintained for the life of Boiler No. 11, along with the permit application received by TCEQ on September 9, 1999, as revised in response to all requests for information.
 - 3) The holder of this permit shall maintain a raw data file of all CEMS measurements for Boiler No. 11, including CEMS performance testing measurements, all CEMS calibration checks and adjustments and maintenance performed on these systems; or measurements of operating conditions monitored, including steam generating unit load, identified in the monitoring plan. These data shall be maintained in a permanent form, either hard copy or electronically, so long as it is suitable for inspection.
 - 4) Copies of natural gas contract specifications and process vent gas specifications including (but not limited to) those for total sulfur shall be kept in an on-site file. Records of fuel purchased, including date delivered, amount delivered, and any sulfur analyses shall be kept in an on-site file.

Reporting Requirements

18. For the Gas Turbines (EPNs CG1 and CG2), the holder of this permit shall submit to the TCEQ Beaumont Regional Office and the TCEQ Compliance Section in Austin semiannual reports as described in 40 CFR § 60.7. Such reports are required for each emission unit which is required to be continuously monitored pursuant to Special Condition No. 12. In addition to the information specified in 40 CFR § 60.7(c), each report shall contain the hours of operation of the facility and a report summary of the periods of noncomplying emissions and CEMS downtimes by cause.
19. For Boiler No. 11 (EPN UEHK11), all occurrences of noncomplying emissions/conditions must be logged and copies sent to the TCEQ Beaumont Regional Office on a semiannual basis.

Maintenance Condition

20. The permit holder may conduct periodic water washings utilizing a soap solution on Gas Turbines CG1 and CG2 a maximum of 3 times per calendar week per turbine and no more than 156 times per year per turbine. Each water wash (with soap) period shall not exceed one hour. During these water wash periods, the NO_x and CO emissions rates in the MAERT shall apply. However, the emissions concentrations required in Special Condition No. 4 and recorded by CEMS shall be temporarily suspended for the one block hourly average concentrations recorded during the one-hour water wash (with soap) period, not to exceed a total of two block hourly average concentrations per water wash (with soap) period.

Additionally, the permit holder may conduct periodic water washings (without soap) on Gas Turbines CG1 and CG2 without restriction provided that the emissions limitations in the MAERT and Special Condition No. 4 are not exceeded as a result of these washings.

Date: January 15, 2016

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 16909 and PSDTX780

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

Air Contaminants Data

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (5)
CG1 (4)	37 Megawatt GE Frame 6 Gas Turbine and 212 MMBtu/hr Duct Burner	NO _x	66.70	---
		CO	31.50	---
		VOC	2.50	---
		SO ₂	8.20	---
		SO ₃	0.30	---
		PM ₁₀	4.00	---
		PM _{2.5}	4.00	---
CG2 (4)	37 Megawatt GE Frame 6 Gas Turbine and 212 MMBtu/hr Duct Burner	NO _x	66.70	---
		CO	31.50	---
		VOC	2.50	---
		SO ₂	8.20	---
		SO ₃	0.30	---
		PM ₁₀	4.00	---
		PM _{2.5}	4.00	---
CG1 (4)	37 Megawatt GE Frame 6 Gas Turbine and 250 MMBtu/hr Duct Burner	NO _x	70.41	---
		CO	34.10	---
		VOC	2.76	---
		SO ₂	8.68	---
		SO ₃	0.32	---
		PM ₁₀	4.26	---
		PM _{2.5}	4.26	---
CG2 (4)	37 Megawatt GE Frame 6 Gas Turbine and 250 MMBtu/hr Duct	NO _x	70.41	---
		CO	34.10	---

Emission Sources - Maximum Allowable Emission Rates

		VOC	2.76	---
		SO ₂	8.68	---
		SO ₃	0.32	---
		PM ₁₀	4.26	---
		PM _{2.5}	4.26	---
CG1 (4)	37 Megawatt GE Frame 6 Gas Turbine and Duct Burner	NO _x	---	259.93
		CO	---	123.35
		VOC	---	9.26
		SO ₂	---	31.92
		SO ₃	---	1.20
		PM ₁₀	---	16.66
		PM _{2.5}	---	16.66
CG2 (4)	37 Megawatt GE Frame 6 Gas Turbine and Duct Burner	NO _x	---	259.93
		CO	---	123.35
		VOC	---	9.26
		SO ₂	---	31.92
		SO ₃	---	1.20
		PM ₁₀	---	16.66
		PM _{2.5}	---	16.66
UEHK11	Boiler No. 11	NO _x	14.3	62.4
		CO	20.8	91.0
		VOC	0.9	3.8
		SO ₂	3.2	14.0
		PM ₁₀	2.9	12.5
		PM _{2.5}	2.9	12.5

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.

(2) Specific point source name. For fugitive sources, use area name or fugitive source name.

(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen

Emission Sources - Maximum Allowable Emission Rates

SO ₂	- sulfur dioxide
SO ₃	- sulfur trioxide
PM ₁₀	- total particulate matter equal to or less than 10 microns in diameter, including PM _{2.5} , as represented. Where PM is not listed, is shall be assumed that no PM greater than 10 microns is emitted.
PM _{2.5}	- particulate matter equal to or less than 2.5 microns in diameter
CO	- carbon monoxide

(4) Turbine (CG1 and CG2) hourly emissions are based on 20°F ambient temperature and annual emissions are based on 66.5°F ambient temperature.

(5) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period. Annual emissions include those due to higher and lower duct burner firing rates.

Date: January 15, 2016

Storage Tank Data

Tank Number	Product	Construction Date	Volume Capacity (gal)	Type of Control Device	Type of Floating Roof	Floating Roof Construciton Type	Deck Seam Type	Type of floating rim seals	Type of Floating Roof Support	Date of Installation of floating roof	Date last out of service or top side floating roof inspection	Applicable CAA Regs
T-O-87	RAWPYROBK	7/22/1953	440,608	IFR	Internal	Pan Type	Welded	Liquid mounted primary	Removable Legs	1/9/2013	10/17/2022	Kb, FF, YY
T-O-88	WATERAD	11/1/1953	440,608	IFR	Internal	Pan Type	Welded	Liquid mounted primary	Removable Legs	9/13/2014	10/18/2022	Kb, FF, YY
T-O-126	WATERAD	4/8/1958	215,898	Flare	N/A	N/A	N/A	N/A	N/A	N/A	6/9/2016	FF & YY
T-O-127	WATERAD	4/8/1958	132,183	Flare	N/A	N/A	N/A	N/A	N/A	N/A	5/23/2016	FF & YY
T-A3-39	Methanol	9/1/1964	3,093	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8/7/2008	N/A

Special Conditions

Permit Number 19823

1. This permit covers only those sources of emissions listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT), and those sources are limited to the emission limits and other conditions specified in that table.
2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the MAERT. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions with the exception of the following:

PV-A3-26 (Caustic Scrubber)

PRV-A3-29 (Deethanizer Tower)

PRV-A3-32/602S (No. 1 Depropanizer)

PRV-A3-602/602B (No. 2 Depropanizer)

PRV-A3-297 (Fuel to H-A3-5)

PRV-A3-1720 (No. 2 Wastewater Degasser [R-A3-207])

PRV-A3-28/28A (Demethanizer Tower)

PRV-A3-31/31A (Ethylene Tower)

PRV-A3-36/36A (No. 1 Propylene Tower)

PRV-O-246 (E-O-2 Propane Heater)

PRV-A3-1719 (Caustic Coalescer)

PRV-O-342 (Propane to Storage Tanks)

Federal Applicability

3. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (EPA) regulations on Standards of Performance for New Stationary Sources promulgated in Title 40 Code of Federal Regulations Part 60 (40 CFR Part 60):
 - A. Subpart A, General Provisions.
 - B. Subpart Kb, Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984.
 - C. Subpart GG, Standards of Performance for Stationary Gas Turbines.

- D. Subpart VV, Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006.
 - E. Subpart NNN, Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.
 - F. Subpart RRR, Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.
4. These facilities shall comply with all applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants in 40 CFR Part 61:
- A. Subpart A, General Provisions.
 - B. Subpart J, National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene.
 - C. Subpart FF, National Emission Standard for Benzene Waste Operations.
5. These facilities shall comply with all applicable requirements of the EPA regulations on National Emission Standards for Hazardous Air Pollutants for Source Categories in 40 CFR Part 63:
- A. Subpart A, General Provisions.
 - B. Subpart XX, National Emission Standards for Ethylene Manufacturing Process Units: Heat Exchange Systems and Waste Operations.
 - C. Subpart YY, National Emission Standards for Hazardous Air Pollutants for Source Categories: Generic Maximum Achievable Control Technology Standards.

Emission Standards and Operational Specifications

6. The annual production of ethylene shall not exceed 693.6 million pounds per year (MMlb/yr) and annual production of propylene shall not exceed 671.1 MMlb/yr. Records of annual production of each product shall be maintained and updated monthly.
7. The cracking furnaces shall be limited to an annual total of 225 decoking cycles and shall be limited to a short-term total of three furnaces decoking simultaneously. The hydrogenation reactors shall be limited to ten regenerations per year. Furnace decoking and reactor regeneration may occur simultaneously. The decoking and regeneration limits are the equivalent of the spray drum emission limits as represented in the MAERT.
8. The following fired heating duty limits, on a higher heating value basis, shall apply:

Source	Annual Average Firing Rate (MMBtu/hr)	Maximum Firing Rate (MMBtu/hr)
H-A3-1A-H, J	476.7	842.0
H-A3-3	1.0	10.0
H-A3-4	3.1	10.0
C-A3-1-1	233.0	266.0

Source	Annual Average Firing Rate (MMBtu/hr)	Maximum Firing Rate (MMBtu/hr)
H-A3-5	197.0	250.0

A rolling 12-month average total firing rate shall be updated monthly to demonstrate compliance with the annual firing rates shown in this condition. Records of the monthly rolling firing rates and their corresponding maximum (short-term) firing rates shall be maintained at the plant site for a period of two years and made available to representatives of the TCEQ on request.

9. The burners in the waste heat boiler shall not exceed 0.08 lb NO_x/MMBtu.

10. Flares shall be designed and operated in accordance with the following requirements: **(05/19)**

- A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity at all times when emissions may be vented to them.

The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements.

- B. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple, infrared monitor, or ultraviolet monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
- C. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam assist to the flare.
- D. The permit holder shall install a continuous flow monitor and calorimeter that provide a record of the vent stream flow and Btu content to the flare. The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet such that the total vent stream to the flare is measured and analyzed. Readings shall be taken at least once every 15 minutes and the average hourly values of the flow and Btu content shall be recorded each hour.

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

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

The monitors and analyzers shall operate as required by this section at least 95% of the time when the flare is operational, averaged over a rolling 12 month period. Flared gas net heating value and actual exit velocity determined in accordance with 40 CFR §§60.18(f)(3) and 60.18(f)(4) shall be recorded at least once every hour. Hourly mass emission rates shall

be determined and recorded using the above readings and the emission factors used in the permit amendment application, PI-1 dated October 05, 2015.

- E. The calorimeter required in this condition shall be installed no later than 12 months after the issuance date of this permit.
- F. The following flare heat inputs limits shall apply:

EPN	Average Annual Heat Input to Flare (MMBtu/yr)	Maximum Heat Input to Flare (MMBtu/hr)
UER044 and UER046	394,227	337
UER037	402,474	213

A rolling 12-month total heat input rate shall be updated monthly to demonstrate compliance with the annual heat input shown in this condition. Records of the monthly rolling heat input rates and their corresponding maximum (short-term) rates shall be maintained at the plant site for a period of two years and made available to representatives of the TCEQ on request.

- 11. Fuel for the combustion devices is limited to natural gas or fuel gas with a sulfur content of less than four grains total sulfur per 100 dry standard cubic feet. Use of any other fuel will require a permit modification and approval from the Executive Director of the Texas Commission on Environmental Quality (TCEQ).
- 12. Emissions from AD/WW Tanks: T-O-87, T-O-88, T-O-126, and T-O-127 shall be sent to Flares UER044 and UER046, or a carbon adsorption system as specified in Special Condition No. 16. Also, to minimize off-property impacts from the AD/wastewater tanks, the vents on Tanks T-O-87 and T-O-88 shall be sealed and emissions shall be routed to Flares UER044 and UER046, or a carbon adsorption system as specified in Special Condition No. 16.
- 13. Gas Turbines shall be operated in accordance with the following requirements:
 - A. During operation of the gas turbine, when the gas turbine is exhausting through the Waste Heat Boiler (Emission Point No. [EPN] A3HA35), the average hourly concentration in parts per million by volume dry (ppmvd) corrected to 15 percent oxygen (O₂) (ppmvd at 15 percent O₂) in the waste heat boiler exhaust gases shall not exceed 37 ppmvd for NO_x. Carbon monoxide (CO) concentration in the waste heat boiler stack shall not exceed 25 ppmvd corrected to 15 percent O₂.
 - B. During operation of the gas turbine, when the gas turbine is exhausting through the Bypass Stack (EPN A3CA31), the average concentration in ppmvd at 15 percent O₂ in the bypass stack exhaust gases shall not exceed 42 ppmvd for NO_x. Carbon monoxide concentration in the bypass stack shall not exceed 25 ppmvd corrected to 15 percent O₂.
 - C. The above limits shall apply except during periods of maintenance, start-up, or shutdown (MSS), not to exceed 3 hours. In addition, the above limits shall not apply when it is necessary, due to mechanical constraints, to operate the gas turbine at a partial load level at which emissions will rise above these values. These periods shall not exceed 12 hours per event.

- D. The gas turbine shall exhaust through the waste heat boiler at all times except as specified below:
- (1) During periods specified in Special Condition No. 13.C.
 - (2) The gas turbine shall be allowed to exhaust through the Bypass Stack (EPN A3CA31) during maintenance and repairs which require the waste heat boiler to be taken out of service. Records of each maintenance and repair including the description and duration of the activity shall be kept at the plant site.

Storage Tanks

14. Storage tank throughput and service shall be limited to the following:

Tank Identifier	Service	Fill/Withdrawal Rate (gallons/hr)	Rolling 12 Month Throughput (gallons)
T-A3-29	Wash Oil	19,200	2,500,000
T-A3-39	Methanol	4,500	12,400
T-A3-46	Tar	4,519	1,718,960
T-O-39	Waste Oil	6,006	613,200
T-O-40	Waste Oil	6,006	613,200
T-O-43	Wash Oil	19,200	2,500,000
T-O-87	Aromatic Distillate / Wastewater	24,000	42,000,000
T-O-88	Aromatic Distillate / Wastewater	(Note)	(Note)
T-O-126	Aromatic Distillate / Wastewater	(Note)	(Note)
T-O-127	Aromatic Distillate / Wastewater	(Note)	(Note)

Note: The Aromatic Distillate (AD)/Wastewater Tanks (T-O-87, T-O-88, T-O-126, and T-O-127) are listed under a VOC emission cap. The combined AD fill rates and throughputs for all three tanks are listed under T-O-87.

15. Storage tanks are subject to the following requirements: The control requirements specified in parts A–E of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.
- A. An internal floating roof shall be installed on all tanks or the tank emissions shall be routed to a flare. Tanks T-O-43, T-O-87, T-O-88, T-O-126, and T-O-127 may also be routed a carbon adsorption system as specified in Special Condition No.16. An open-top tank containing a floating roof (external floating roof-tank), which uses double seal or secondary seal technology, shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal, and the secondary seal is rim-mounted. A weather-shield is not approvable as a secondary seal

unless specifically reviewed and determined to be vapor-tight. A pressure tank that does not normally vent to atmosphere during normal operations, including filling, is considered equivalent control.

- B. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and any seal gap measurements specified in Title 40 Code of Federal Regulations § 60.113b (40 CFR § 60.113b) Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989) to verify fitting and seal integrity. Records shall be maintained of the dates inspection was performed, any measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted. Tanks T-O-43, T-O-87, and T-O-88 shall have gaskets on all sample hatches.
 - C. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.
 - D. Except for labels, logos, etc. not to exceed 15 percent of the tank total surface area, uninsulated tank exterior surfaces exposed to the sun shall be white or unpainted aluminum. Storage tanks must be equipped with permanent submerged fill pipes. This requirement does not apply to geodesic domes.
 - E. The permit holder shall maintain a record of tank throughput for the previous month and the past consecutive 12 month period for each tank. .
16. At all times when in service, the Fixed-Roof Storage Tanks, T-A3-46, T-A3-29, AD/WW Tanks (T-O-87, T-O-88, T-O-126, and T-O-127) except for the period when AD/WW Tanks are vented to the LP Flares (EPN: UER044 and UER046), and Oxygen Analyzer Vent shall vent through a carbon adsorption system (CAS) consisting of at least two activated carbon canisters that are connected in series.
- A. The CAS shall be sampled daily or at intervals no greater than 20 percent of the design carbon replacement interval, whichever is the greater interval, to determine breakthrough of VOC. The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sampling shall be done during tank filling which maximum emission is expected to occur.
 - B. The VOC sampling and analysis shall be performed using an instrument with a flame ionization detector (FID), or a TCEQ-approved alternative detector. The instrument/FID must meet all requirements specified in Section 8.1 of EPA Method 21 (40 CFR 60, Appendix A). Sampling and analysis for VOC breakthrough shall be performed as follows:
 - (1) Immediately prior to performing sampling, the instrument/FID shall be calibrated with zero and span calibration gas mixtures. Zero gas shall be certified to contain less than 0.1 ppmv total hydrocarbons. Span calibration gas shall be methane at a concentration within ± 10 percent of 100 ppmv and certified by the manufacturer to be ± 2 percent accurate. Calibration error for the zero and span calibration gas checks must be less than ± 5 percent of the span calibration gas value before sampling may be conducted.
 - (2) The sampling point shall be at the outlet of the initial canister but before the inlet to the second or final polishing canister. Sample ports or connections must be designed such that air leakage into the sample port does not occur during sampling.

- (3) During sampling, data recording shall not begin until after two times the instrument response time. The VOC concentration shall be monitored for at least 5 minutes, recording 1-minute averages, during tank filling.
- C. Breakthrough shall be defined as the highest 1 minute average measured VOC concentration at or exceeding 100 ppmv. When the condition of breakthrough of VOC from the initial saturation canister occurs, the waste gas flow shall be switched to the second canister and a fresh canister shall be placed as the new final polishing canister within twenty-four hours. Sufficient new activated carbon canisters shall be maintained at the site to replace spent carbon canisters such that replacements can be done in the above specified time frame.
- D. Records of the CAS monitoring maintained at the plant site, shall include (but are not limited to) the following:
 - (1) Sample time and date.
 - (2) Monitoring results (ppmv).
 - (3) Corrective action taken including the time and date of that action.
 - (4) Process operations occurring at the time of sampling.
- E. Alternate monitoring or sampling requirements that are equivalent or better may be approved by the TCEQ Regional Manager or the TCEQ Regulatory Compliance Section Manager. Alternate requirements must be approved in writing before they can be used for compliance purposes.
- F. The holder of this permit may request a change in frequency of breakthrough sampling after completing at least three months of sampling as specified above. The request shall include a copy of the CAS monitoring records specified in paragraph D of this condition and shall be submitted to the TCEQ Office of Air, Air Permits Division, Air Permits Division in Austin for review and response. The permit holder may not change the sampling frequency until written approval is received from the Executive Director of the TCEQ.

Cooling Tower and Heat Exchanger System

17. The holder of this permit shall perform sampling and make repairs as necessary to demonstrate ongoing compliance with the emission limits for the Cooling Tower (EPN CT-4). The results of all monitoring and maintenance efforts affecting the cooling tower and heat exchanger system shall be recorded and such records shall be maintained for a period of five years. The records shall be made available to TCEQ personnel upon request.

This permit does not authorize any emission rates from the cooling tower(s) other than those listed on the attached MAERT. This permit does not authorize emissions not listed on the MAERT during repair or delay of repair, paragraphs C and D below.

- A. The VOC emissions associated with cooling tower water shall be monitored weekly with an approved method. The sampling method shall be the air stripping method known as the "El Paso" method which is described in the TCEQ Publication, "Air Quality Permit Technical Guidance for Chemical Sources: Cooling Towers," TCEQ Publication No. RG-108, May 1997 (Revised). The sample port shall be located on the top of the above ground horizontal section of the water line returning to the cooling tower.

The minimum detection level of the overall testing system shall be 0.030 part per million by weight (ppmw) VOC (concentration VOC in water entering the cooling tower). The minimum detection limit for the air stripped VOC shall be 0.500 ppmv (concentration VOC in the stripping air).

Calibration standards shall include at least zero ppmv and 10 ppmv VOC in air (as methane). The concentration of VOC in the stripped air may also be determined by the EPA Methods TO14 and TO15. The testing, analysis, and recordkeeping shall include the air contaminant speciation, physical characteristics, and instrumentation response factors used to convert from the air contaminant concentration in the stripping air (ppmv) to air contaminant concentration in the cooling water (ppmw).

Alternate methods may be approved by the TCEQ Regional Office.

- B. If a heat exchanger leak greater than or equal to 0.050 ppmw VOC (net concentration of strippable air contaminant in the water) is detected, the permittee shall comply with the leak repair requirements of paragraph C below except as provided in paragraph D.
- C. Leaks associated with the cooling tower(s), as defined by paragraph B, shall be repaired as soon as practical but not later than 45 calendar days after the permittee receives results of the monitoring tests indicating a leak. The leak shall be repaired unless the permittee demonstrates that the results are due to a condition other than a leak.
- D. Documentation of a decision to delay repair shall state the reasons repair was delayed and shall specify a schedule for completing the repair as soon as practical. For the purpose of this permit condition, delay of repair means not performing the repairs within 45 calendar days after the owner or operator receives results of monitoring tests indicating a leak. Delay of repair beyond the limits specified in subparagraphs (1) through (5) requires approval of the TCEQ Beaumont Regional Office. All documentation of a decision to delay repair shall be submitted in writing to the TCEQ Beaumont Regional Office at least ten days prior to the deadline. If approval from the TCEQ is not received within ten days after a properly submitted notification, approval will automatically be granted unless notified otherwise. If ten days notice cannot be given due to some unscheduled occurrence, then a telephone notice shall be given immediately, followed by a written request including the reason a ten-day notice could not be given. In this case, extension of the deadline will be assumed until a response is received from the TCEQ or until automatic approval after ten days.
 - (1) Delay of repair of heat exchange systems for which leaks have been detected is allowed if the leaking equipment is isolated from the cooling tower system. Notice to the TCEQ Beaumont Regional Office shall include a description of how the exchanger is blocked and a schedule for repair.
 - (2) Delay of repair of heat exchange systems for which leaks have been detected is allowed if the pressure of the cooling water throughout the leaking exchanger is increased to a pressure greater than the process side of the exchanger, thus reversing the direction of the leak. Notice to the TCEQ Beaumont Regional Office shall include a description of how the water pressure was increased and a schedule for repair.
 - (3) Delay of repair may be allowed if repair is technically infeasible without a total unit shutdown or a partial unit shutdown and a shutdown is expected within the next two months. Notice to the TCEQ Beaumont Regional Office shall include a description of why repair of the exchanger is technically infeasible prior to shutdown and a schedule for shutdown and repair.

- (4) Delay of repair may be allowed for up to 120 calendar days if necessary parts are not available. Notice to the TCEQ Beaumont Regional Office shall include the basis of the reason for delay, the expected emissions during the delay, and a schedule for repair.
 - (5) Delay of repair may be allowed if repair is technically infeasible without a shutdown and the shutdown would cause greater emissions than the potential emissions from delaying repair. The permit holder may delay repair until the next shutdown of the process equipment associated with the leaking heat exchanger. Notice to the TCEQ Beaumont Regional Office shall include the basis for the determination that a shutdown for repair would cause greater emissions than the emissions likely to result from delaying repair. If the delay will exceed two years and the projected emissions due to this leak will exceed the rates as listed in the MAERT for this source, then the permit holder shall submit a permit amendment or permit by rule application to seek authorization for any increase in VOC and/or benzene emissions.
- 18. Except during periods when the A-3 Unit is processing refinery grade propylene (which does not contain benzene) only, the permit holder is required to monitor for leaks of benzene from the cooling tower and heat exchanger system in VOC service in addition to the requirements of Special Condition No. 17. The benzene emissions shall be monitored daily at a minimum detection limit of 0.003 ppmw (concentration of benzene in the water). Alternate methods may be approved by the Director of the TCEQ Regional Office. If a heat exchanger leak greater than or equal to 0.030 ppmw benzene is detected, the permittee shall comply with the leak repair requirements of Special Condition No. 17, paragraph C, except as provided in paragraph D.
- 19. The cooling tower (EPN CT-4) shall be operated and monitored in accordance with the following:
 - A. Cooling towers shall each be equipped with drift eliminators having manufacturer's design assurance of 0.001% drift or less. Drift eliminators shall be maintained and inspected at least annually. The permit holder shall maintain records of all inspections and repairs.
 - B. Total dissolved solids (TDS) shall not exceed 1700 parts per million by weight (ppmw). Dissolved solids in the cooling water drift are considered to be emitted as PM, PM₁₀, and PM_{2.5} as represented in the permit application calculations.
 - C. Cooling towers shall be analyzed for particulate emissions using one of the following methods:
 - (1) Cooling water shall be sampled at least once per day for total dissolved solids (TDS); or
 - (2) TDS monitoring may be reduced to weekly if conductivity is monitored daily and TDS is calculated using a ratio of TDS-to-conductivity (in ppmw per µmho/cm or ppmw/siemens). The ratio of TDS-to-conductivity shall be determined by concurrently monitoring TDS and conductivity on a weekly basis. The permit holder may use the average of two consecutive TDS-to-conductivity ratios to calculate daily TDS; or
 - (3) TDS monitoring may be reduced to quarterly if conductivity is monitored daily and TDS is calculated using a correlation factor established for each cooling tower. The correlation factor shall be the average of nine consecutive weekly TDS-to-conductivity ratios determined using C(2) above provided the highest ratio is not more than 10% larger than the smallest ratio.
 - (4) The permit holder shall validate the TDS-to-conductivity correlation factor once each calendar quarter. If the ratio of concurrently sampled TDS and conductivity is more

than 10% higher or lower than the established factor, the permit holder shall increase TDS monitoring to weekly until a new correlation factor can be established.

- D. Cooling water sampling shall be representative of the cooling tower feed water and shall be conducted using approved methods.
- (1) The analysis method for TDS shall be EPA Method 160.1, ASTM D5907, or SM 2540 C [SM - 19th edition of Standard Methods for Examination of Water]. Water samples should be capped upon collection, and transferred to a laboratory area for analysis.
 - (2) The analysis method for conductivity shall be either ASTM D1125-95A (field or routine laboratory testing) or ASTM D1125-95B (continuous monitor). The analysis may be conducted at the sample site or with a calibrated process conductivity meter. If a conductivity meter is used, it shall be calibrated at least annually. Documentation of the method and any associated calibration records shall be maintained.
 - (3) Alternate sampling and analysis methods may be used to comply with D(1) and D(2) with written approval from the TCEQ Regional Director.
 - (4) Records of all instrument calibrations and test results and process measurements used for the emission calculations shall be retained.
- E. Emission rates of PM, PM₁₀ and PM_{2.5} shall be calculated using the measured TDS and the ratio or correlation of TDS to conductivity measurements, the design drift rate and the daily maximum and average actual cooling water circulation rate for the short term and annual average rates. Alternately, the design maximum circulation rate may be used for all calculations. Emission records shall be updated monthly.

Piping, Valves, Connectors, Pumps, Agitators and Compressors in contact with VOC – Intensive Directed Maintenance - 28MID

20. Except as may be provided for in the Special Conditions of this permit, the following requirements apply to the above-referenced equipment:
- A. The requirements of paragraphs F and G shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made available upon request.

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

- (1) piping and instrumentation diagram (PID);
 - (2) a written or electronic database or electronic file;
 - (3) color coding;
 - (4) a form of weatherproof identification; or
 - (5) designation of exempted process unit boundaries.
- B. Construction of new and reworked piping, valves, pump systems, agitators, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American

Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.

- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical. New and reworked buried connectors shall be welded.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Difficult-to-monitor and unsafe-to-monitor valves, as defined by Title 30 Texas Administrative Code Chapter 115 (30 TAC Chapter 115), shall be identified in a list to be made available upon request. The difficult-to-monitor and unsafe-to-monitor valves may be identified by one or more of the methods described in subparagraph A above.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 15 days of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, both valves shall be closed. If the isolation of equipment for hot work or the removal of a component for repair or replacement results in an open ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 72 hours. If the repair or replacement is not completed within 72 hours, the permit holder must complete either of the following actions within that time period;

- (1) a cap, blind flange, plug, or second valve must be installed on the line or valve; or
 - (2) the open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve.
- F. Accessible valves shall be monitored by leak checking for fugitive emissions at least quarterly using an approved gas analyzer with a directed maintenance program. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed at least quarterly and recorded in the unit log or equivalent. Pressure-sensing

devices that are continuously monitored with alarms are exempt from recordkeeping requirements specified in this paragraph.

An approved gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. A calculated average is not required when all of the compounds in the mixture have a response factor less than 10 using methane. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

A directed maintenance program shall consist of the repair and maintenance of components assisted simultaneously by the use of an approved gas analyzer such that a minimum concentration of leaking VOC is obtained for each component being maintained. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained. Replaced components shall be re-monitored within 15 days of being placed back into VOC service.

- G. All new and replacement pumps, compressors, and agitators shall be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. These seal systems need not be monitored and may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.

All other pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly.

- H. Damaged or leaking valves, connectors, compressor seals, pump seals, and agitator seals found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A leaking component shall be repaired as soon as practicable, but no later than 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit

shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

- I. In lieu of the monitoring frequency specified in paragraph F, valves in gas and light liquid service may be monitored on a semiannual basis if the percent of valves leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.

Valves in gas and light liquid service may be monitored on an annual basis if the percent of valves leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.

If the percent of valves leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph.

- J. The percent of valves leaking used in paragraph I shall be determined using the following formula:

$$((V_l + V_s) / V_t) \times 100 = V_p$$

Where:

V_l = the number of valves found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

V_s = the number of valves for which repair has been delayed and are listed on the facility shutdown log.

V_t = the total number of valves in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe to-monitor valves.

V_p = the percentage of leaking valves for the monitoring period.

- K. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95% of the instrument readings recorded. Records of physical inspections shall be noted in the operator's log or equivalent.
- L. Compliance with the requirements of this condition does not assure compliance with requirements of 30 TAC Chapter 115, an applicable New Source Performance Standard, or an applicable National Emission Standard for Hazardous Air Pollutants and does not constitute approval of alternative standards for these regulations.

28CNTQ (Connectors Inspected Quarterly)

21. In addition to the weekly physical inspection required by Item E of Special Condition No. 20, all accessible connectors in gas/vapor and light liquid service shall be monitored quarterly with an

approved gas analyzer in accordance with Items F through J of Special Condition No. 20 (28CNTQ).

- A. Allowance for reduced monitoring frequencies.
- (1) The frequency of monitoring may be reduced from quarterly to semiannually if the percent of connectors leaking for two consecutive quarterly monitoring periods is less than 0.5 percent.
 - (2) The frequency of monitoring may be reduced from semiannually to annually if the percent of connectors leaking for two consecutive semiannual monitoring periods is less than 0.5 percent.
- B. If the percent of connectors leaking for any semiannual or annual monitoring period is 0.5 percent or greater, the facility shall revert to quarterly monitoring until the facility again qualifies for the alternative monitoring schedules previously outlined in this paragraph. The percent of connectors leaking used in paragraph A shall be determined using the following formula:

$$(C_l + C_s) / C_t \times 100 = C_p$$

Where:

Cl = the number of connectors found leaking by the end of the monitoring period, either by Method 21 or sight, sound, and smell.

Cs = the number of connectors for which repair has been delayed and are listed on the facility shutdown log.

Ct = the total number of connectors in the facility subject to the monitoring requirements, as of the last day of the monitoring period, not including nonaccessible and unsafe-to-monitor connectors.

Cp = the percentage of leaking connectors for the monitoring period.

Initial Determination of Compliance

22. The permit holder shall perform stack sampling and other testing as required to establish the actual pattern and quantities of air contaminants being emitted into the atmosphere from the waste heat boiler exhaust, the cracking furnaces, and the Spray Drum (FA350). The permit holder is responsible for providing sampling and testing facilities and conducting the sampling and testing operations at his expense. Sampling shall be conducted in accordance with the appropriate procedures of the TCEQ Sampling Procedures Manual and with the EPA Reference Method 8 for sulfur dioxide (SO₂), Reference Method 9 for opacity, Reference Method 10 for the concentration of CO, and Reference Method 20 for the concentrations of NO_x and O₂ or equivalent methods. Fuel sampling using the methods and procedures of 40 CFR § 60.335(d) may be conducted in lieu of stack sampling for SO₂. If fuel sampling is used, compliance with SO₂ limits shall be based on 100 percent conversion of the sulfur in the fuel to SO₂.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Air, Air Permits Division. Test waivers and alternate/equivalent procedure

proposals for Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60) testing which must have EPA approval shall be submitted to the TCEQ Regional Director.

- A. The appropriate TCEQ Regional Office shall be notified not less than 45 days prior to sampling. The notice shall include:
- (1) Proposed date for pretest meeting.
 - (2) Date sampling will occur.
 - (3) Name of firm conducting sampling.
 - (4) Type of sampling equipment to be used.
 - (5) Method or procedure to be used in sampling.
 - (6) Description of any proposed deviation from the sampling procedures specified in this permit or TCEQ/EPA sampling procedures.
 - (7) Method for determining turbine load both before and after sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

- B. Air contaminants emitted from the waste heat boiler exhaust to be tested for while the duct burner and turbine are being fired at full load include (but are not limited to) NO_x, O₂, CO, and opacity.
- C. The NO_x and CO concentrations shall be corrected and reported according to Special Condition No. 13. This testing will be used to demonstrate initial compliance with Special Condition No. 13 and the MAERT.
- D. Sampling of the waste heat boiler shall occur as required by the TCEQ.
- E. Air contaminants emitted from the cracking furnaces to be tested for while the furnaces are fired at full load include (but are not limited to) NO_x, O₂, and CO.
- F. Sampling of the Cracking Furnaces (EPNs A3HA31, A-H, and J) to ensure compliance with the emission caps shall occur within 180 days of initial operation of the cracking furnace Low-NO_x burners. Additional sampling shall occur as may be required by the TCEQ.

Sampling of one cracking furnace may be considered representative of each cracking furnace in the group HA31, A-H, and J, upon the approval of TCEQ Beaumont Regional Office, at the time of the pretest meeting.

- G. Air contaminants emitted from the Spray Drum (FA350) shall be tested at full load. Testing shall include nickel, chromium, and particulate matter less than 10 microns in diameter. Testing shall occur within 180 days after start-up following approval of the March 2001 amendment to this permit.
- H. Copies of the final sampling report shall be forwarded to the offices below within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions entitled "Chapter 14, Contents of Sampling Reports" of the TCEQ Sampling Procedures Manual. The reports shall be distributed as follows:

One copy to the appropriate TCEQ Regional Office.

One copy to each local air pollution control program.

Demonstration of Compliance

23. The holder of this permit shall install, calibrate, maintain, and operate a continuous emission monitoring system (CEMS) to measure and record the concentrations of NO_x, CO, and O₂ in the waste heat boiler exhaust. If the turbine is operated without the waste heat boiler, the CEMS shall measure and record the concentration of NO_x, CO, and O₂ in the turbine exhaust. The NO_x and CO concentrations shall be corrected and reported according to Special Condition No. 13.

- A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 7, Title 40 Code of Federal Regulation Part 60 (40 CFR Part 60), Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division for requirements to be met.
- B. The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in 40 CFR Part 60, Appendix B or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

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

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

- C. The monitoring data shall be reduced to hourly average concentrations at least once each day, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable emission rates in pound per hour (lb/hr) at least once each day and cumulative tons per year on a 12-month rolling average at least once every month.
- D. All monitoring data and quality-assurance data shall be maintained by the source for a period of two years and shall be made available to the TCEQ Executive Director or designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. All cylinder gas audit exceedances of ± 15 percent accuracy and any CEMS downtime shall be reported to the TCEQ Beaumont Regional Director within three days of any downtime, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the TCEQ Beaumont Regional Director.

24. The custom fuel monitoring schedule (CFMS) approved by the EPA in March 1997 is recognized as enforceable conditions of this permit. The sampling and analysis frequency for fuel nitrogen and sulfur in the current phase of the CFMS is semiannually.

Wastewater Requirements

25. At all times when in service except as authorized under Special Condition No. 26, the wastewater shall be routed through a CAS consisting of at least two activated carbon beds (WWTP A-3 Carbon Beds) that are connected in series to remove organics from the wastewater stream.
- A. The CAS shall be sampled and the event recorded daily to determine breakthrough of benzene. The sampling point shall be after the outlet of the initial bed but before the inlet to the final bed.
 - B. The method of benzene sampling and analysis shall be by collection using the approach of 40 CFR § 61.355(c)(3)(i) Subpart FF, and water analysis by EPA SW-846, Method 8260 or another method approved by TCEQ Regional Office, at a minimum detection limit of 0.010 ppmw, with a turn-around-time sufficient to determine the benzene concentration in the water. The analytical system shall be calibrated each day that analyses are conducted. Facility owner or operator shall prepare and maintain on-site records of the monitoring and analysis plan.
 - C. Breakthrough shall be defined as a measured benzene concentration of 20 ppmw. When the condition of breakthrough from the initial bed occurs, the wastewater flow shall be switched to the second bed or a standby series of beds immediately. Within 24 hours of detection of breakthrough, a fresh bed shall be placed as the new final polishing bed. Sufficient new activated carbon shall be maintained at the site to replace spent carbon beds such that replacements can be done in the above specified time frames.
 - D. Records of the CAS monitoring and CAS operations shall be maintained at the plant site and include (but will not be limited to) the following:
 - (1) Sample time and date.
 - (2) Laboratory results (benzene, ppmw).
 - (3) Corrective action taken including the time and date of that action.
 - (4) Bed change out method, schedule, and frequency.

These records shall be made available to representatives of the TCEQ and local programs upon request and shall be retained for at least two years following the date that the data are obtained.
 - E. The holder of this permit may request a change in frequency of breakthrough sampling from the daily sampling only after completing at least three months of sampling as specified above. The request would then be to a frequency of either daily or at intervals no greater than 20 percent of the observed carbon replacement interval, whichever is the greater interval. The request or any other alternative frequency request shall include a copy of the CAS sampling/analysis records and CAS change out specified in paragraph D of this condition and shall be submitted to the TCEQ Office of Air, Air Permits Division, Air Permits Division in Austin for review and response. The permit holder may not change the sampling frequency until written approval is received from the Executive Director of the TCEQ. **(9/03)**

- F. The permit holder shall monitor and record the wastewater concentrations from the outlet of the second WWTP A-3 carbon bed for benzene, toluene, phenanthrene, and anthracene on a quarterly basis. The concentration of each of these air contaminants shall not exceed 0.02 ppmw, 0.03 ppmw, 1.76 ppmw, and 0.13 ppmw, respectively. The sampling and analytical method shall be in accordance with the requirements in 40 CFR Part 61, Subpart FF. Records of the sampling locations, sampling procedures, test methods, sample custody forms, analytical method, and analytical results shall be kept on-site.
26. During the period when the wastewater stripper is not operational, the wastewater shall be routed through a CAS consisting of at least two activated carbon beds (WWTP A-3 Carbon Beds) that are connected in series to remove organics from the wastewater stream.
- A. The CAS shall be sampled and the event recorded at least once every six hours to determine breakthrough of benzene. The sampling point shall be after the outlet of the initial bed but before the inlet to the final bed.
- B. The method of benzene sampling and analysis shall be by collection using the approach of 40 CFR § 61.355(c)(3)(i) Subpart FF, and water analysis by EPA SW-846, Method 8260 or another method approved by TCEQ Regional Office, at a minimum detection limit of 0.010 ppmw, with a turn-around-time sufficient to determine the benzene concentration in the water. The analytical system shall be calibrated each day that analyses are conducted. Facility owner or operator shall prepare and maintain on-site records of the monitoring and analysis plan.
- C. Breakthrough shall be defined as a measured benzene concentration of 0.5 ppmw. When the condition of breakthrough from the initial bed occurs, the wastewater flow shall be switched to the second bed or a standby series of beds immediately. Within 24 hours of detection of breakthrough, a fresh bed shall be placed as the new final polishing bed. Sufficient new activated carbon shall be maintained at the site to replace spent carbon beds such that replacements can be done in the above specified time frames.
- D. Records of the CAS monitoring and CAS operations shall be maintained at the plant site and include (but will not be limited to) the following:
- (1) Sample time and date.
 - (2) Laboratory results (benzene, ppmw).
 - (3) Corrective action taken including the time and date of that action.
 - (4) Bed change out method, schedule, and frequency.
- These records shall be made available to representatives of the TCEQ and local programs upon request and shall be retained for at least two years following the date that the data are obtained.
- E. The holder of this permit may request a change in frequency of breakthrough sampling from the daily sampling only after completing at least three months of sampling as specified above. The request would then be to a frequency of either daily or at intervals no greater than 20 percent of the observed carbon replacement interval, whichever is the greater interval. The request or any other alternative frequency request shall include a copy of the CAS sampling/analysis records and CAS change out specified in paragraph D of this condition and shall be submitted to the TCEQ Office of Air, Air Permits Division, Air Permits Division in

Austin for review and response. The permit holder may not change the sampling frequency until written approval is received from the Executive Director of the TCEQ.

- F. The permit holder shall monitor and record the wastewater concentrations from the outlet of the second WWTP A-3 carbon bed for benzene, toluene, phenanthrene, and anthracene on a weekly basis. The concentration of each of these air contaminants shall not exceed 0.02 ppmw, 0.03 ppmw, 1.76 ppmw, and 0.13 ppmw, respectively. The sampling and analytical method shall be in accordance with the requirements in 40 CFR Part 61, Subpart FF. Records of the sampling locations, sampling procedures, test methods, sample custody forms, analytical method, and analytical results shall be kept on-site.

Periodic Maintenance

27. The permit holder may conduct water washings utilizing a soap solution on Gas Turbine C-A3-1-1 a maximum of six times per calendar week. Each wash period shall not exceed 30 minutes. During these wash periods, the NO_x and CO concentrations required in Special Condition No. 13 and recorded by the CEMS emission monitors shall be temporarily suspended for the wash period. The limits specified on the MAERT apply during these periods. Periods of turbine washings shall be logged and documented to show compliance on the semiannual excess emissions reports.

Recordkeeping and Reporting Requirements

28. The records required by this special condition shall be maintained in hard copy or electronic format and shall be maintained for at least five years rather than the two-year period specified in General Condition No. 7. These records shall be made immediately available at the request of personnel from the TCEQ or any air pollution control agency with jurisdiction.
29. The holder of this permit shall submit to the EPA Region 6 Office in Dallas and the TCEQ Regional Office semiannual reports as described in 40 CFR § 60.7. Such reports are required for each emission unit which is required to be continuously monitored pursuant to Special Condition Nos. 22 and 23. In addition to the information specified in 40 CFR § 60.7(c), each report shall contain:
- A. Hours of operation of the facility, a summary of the periods of noncomplying emissions, monitoring system percent reliability, and monitoring system downtimes by cause.
 - B. Times when span drift exceeds amounts established in 40 CFR Part 60, Appendices B and F, or as specified by the TCEQ.

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

30. For the purposes of reporting pursuant to Special Condition No. 23, noncomplying emissions or conditions are defined as follows:
- A. Each 1-hour period of turbine operation, except during wash periods (as defined in Special Condition No. 27), start-up or shutdown, not to exceed three hours, or during part load 7 operation, not to exceed 12 hours, during which the average emissions of NO_x or CO, as measured and recorded by the monitoring system, exceed the emission limitations of Special Condition No. 13 or the MAERT.

- B. Noncomplying annual emissions of NO_x and CO are defined as a rolling 12-month period during which the 12-month cumulative emissions of NO_x and CO exceed the annual limits in the MAERT.
- C. Noncomplying emissions of SO₂ are defined as any sample of fuel which is found to contain sulfur which indicated exceedance of the requirements of Special Condition No. 11, based on 100 percent conversion of the sulfur in the fuel to SO₂.

Emission Reductions

31. This permit is conditioned on the completion of all emission reduction projects represented on the netting calculations, Table 2N, performed for permit amendment application for Permit Number 19823, Form PI-1 received January 7, 2002.

The reduction of emissions shall occur not later than any increase in production from these permitted facilities. The holder of this permit shall maintain records of these emission reductions and provide access and/or copies upon request to the TCEQ Executive Director, representatives, or any local air pollution control program having jurisdiction. Construction of these facilities must commence as defined in 40 CFR § 52.21(b)(9) (prevention of significant deterioration) or 40 CFR § 51.165(a)(1)(xvi) (nonattainment) no later than five years after the reductions are actually accomplished, or the above reductions are no longer creditable, and the permits are automatically void.

Permit by Rule

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

Authorization	Source or Activity
PBR Registration No. 91994	Increase in cooling tower emissions
PBR Registration No. 109215	Increase in fugitive emissions
PBR Registration No. 139463	Increase in fugitive and flare emissions

Date: May 28, 2019

Permit Renewal & Amendment

Source Analysis & Technical Review

Company	Huntsman Petrochemical LLC	Permit Number	19823
City	Port Neches	Project Numbers	245236 and 242850
County	Jefferson	Account Number	JE-0052-V
Project Types	Renewal and Amend	Regulated Entity Number	RN100219252
Project Reviewer	Cara Hill	Customer Reference Number	CN603839317
Site Name	Huntsman Port Neches		

Project Overview

Huntsman Petrochemical, LLC (Huntsman) owns and operates the A3 Olefins Unit which produces ethylene and propylene in Port Neches, Jefferson County, Texas. Huntsman submitted a renewal application with a concurrent amendment. Huntsman requested an increase in emissions resulting from updated flare calculations and an increase in the number of hydrogenation reactor regeneration cycles. Permit by Rule (PBR) Registration Nos. 91994, 109215, and 139463 are being incorporated into the permit by reference. Maintenance, startup, and shutdown (MSS) emissions are authorized under Permit No. 83816.

Emission Summary

Air Contaminant	Current Allowable Emission Rates (tpy)	Proposed Allowable Emission Rates (tpy)*	Change in Allowable Emission Rates (tpy)	Project Changes at Major Sources (Baseline Actual to Allowable)**
PM	0.00	72.54	72.54	0.18
PM ₁₀	72.53	72.54	0.01	0.18
PM _{2.5}	0.00	72.54	72.54	0.18
VOC	142.83	143.27	0.44	9.44
NO _x	497.06	501.91	4.85	4.85
CO	338.58	374.06	35.48	40.04
SO ₂	69.05	69.25	0.20	0.98

* Emissions of PM and PM_{2.5} will be added to the MAERT upon issuance of this project. These emissions were previously quantified and authorized as PM₁₀, but were not speciated in the MAERT. These emissions will be speciated based on current guidance and policy to demonstrate compliance with current standards for PM, PM₁₀, and PM_{2.5}.

** The project changes were calculated by summing the proposed emissions increases (without considering decreases) and subtracting the baseline emissions. Baseline emissions for the flare (EPN UER044) exceeded the current allowable emissions for CO and NO_x, and the baseline emissions were reduced to the current allowable emissions for these pollutants. The project change does not exceed the major modification significance levels for any contaminant.

Compliance History Evaluation - 30 TAC Chapter 60 Rules

A compliance history report was reviewed on:	October 4, 2016
Site rating & classification:	18.24 / Satisfactory
Company rating & classification:	6.47 / Satisfactory
If the rating is 50<RATING<55, what was the outcome, if any, based on the findings in the formal report:	N/A
Has the permit changed on the basis of the compliance history or rating?	No

Permit Renewal & Amendment Source Analysis & Technical Review

Permit No. 19823
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Regulated Entity No. RN100219252

Public Notice Information - 30 TAC Chapter 39 Rules

Rule Citation	Requirement	Renewal	Amendment
39.403	Is Public Notice Required?	Yes	No
	If no, give reason:		A public notice is not required for amendments involving an increase in emissions below the thresholds in 30 TAC §39.402(a)(3)(B)
		N/A	
	Date Application Received:	November 30, 2015	N/A
	Date Administratively Complete:	December 16, 2015	N/A
	Small Business Source?		No
	Date Leg Letters mailed:	December 17, 2015	N/A
39.603	Date Published:	January 15, 2016	N/A
	Publication Name:	Beaumont Enterprise	N/A
	Pollutants:	Organic compounds, nitrogen oxides, sulfur dioxide, carbon monoxide, and particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less	N/A
	Date Affidavits/Copies Received:	January 29, 2016	N/A
	Is bilingual notice required?	Yes	N/A
	Language:	Spanish	N/A
	Date Published:	January 15, 2016	N/A
	Publication Name:	El Perico	N/A
	Date Affidavits/Copies Received:	February 22, 2016	N/A
	Date Certification of Sign Posting / Application Availability Received:	February 22, 2016	N/A
39.604	Public Comments Received?	No	N/A
	Hearing Requested?	No	N/A
	Meeting Request?	No	N/A
	Date Response to Comments sent to OCC:	N/A	N/A
	Consideration of Comments:	N/A	N/A

Permit Renewal & Amendment Source Analysis & Technical Review

Permit No. 19823
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Regulated Entity No. RN100219252

Rule Citation	Requirement	Renewal	Amendment
	Is 2nd Public Notice required?	No	N/A
39.419	If no, give reason:	A second notice is not required for permit renewals where there is no increase in emissions, no new contaminants, and the applicant has a satisfactory or better compliance history.	
			N/A

Renewal Requirements - 30 TAC Chapter 116 Rules

Rule Citation	Requirement	
116.315(a)	Date of permit expiration:	May 26, 2016
116.310	Date written notice of review was mailed:	September 22, 2015
116.315(a)	Date application for Renewal (PI-1R) received:	November 30, 2015
116.311(a)(1)	Do dockside vessel emissions associated with the facility comply with all regulations?	N/A
116.311(a)(2)	Is the facility being operated in accordance with all requirements and conditions of the existing permit, including representations in the application for permit to construct and subsequent amendments, and any previously granted renewal, unless otherwise authorized for a qualified facility?	Yes
	If no, explain:	N/A
116.311(a)(3)	Subject to NSPS?	Yes
	Subparts A, Kb, GG, VV, NNN, & RRR	
116.311(a)(4)	Subject to NESHAPS?	Yes
	Subparts A, J, & FF	
116.311(a)(5)	Subject to NESHAPS (MACT) for source categories?	Yes
	Subparts A, XX, & YY	
116.311(a)(6)	Does this project require case-by-case MACT?	No
116.311(b)	Was there a condition of air pollution that had to be addressed during this project review?	No
	If yes, explain:	N/A
116.314(a)	Does the facility meet all permit renewal requirements?	Yes
116.313	Permit Renewal Fee: \$ 10,000.00	Fee certification: M608321
	Applicable Outstanding Fees:	None

Amendment Requirements - 30 TAC Chapter 116 Rules

Rule Citation	Requirement	
116.111(a)(2)(G)	Is the facility expected to perform as represented in the application?	Yes
116.111(a)(2)(A)(i)	Are emissions from this facility expected to comply with all TCEQ air quality Rules & Regulations, and the intent of the Texas Clean Air Act?	Yes
116.111(a)(2)(B)	Emissions will be measured using the following method:	parametric monitoring, recordkeeping, and calculations

Permit Renewal & Amendment Source Analysis & Technical Review

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Regulated Entity No. RN100219252

Rule Citation	Requirement																								
	Comments on emission verification: None																								
116.111(a)(2)(D)	Subject to NSPS? Yes																								
	Subparts A, Kb, GG, VV, NNN, & RRR																								
116.111(a)(2)(E)	Subject to NESHAP? Yes																								
	Subparts A, J, & FF																								
116.111(a)(2)(F)	Subject to NESHAP (MACT) for source categories? Yes																								
	Subparts A, XX, & YY																								
116.111(a)(2)(H)	Nonattainment review applicability: The facility is a major source and is located in Jefferson County, which is classified as attainment for all criteria pollutants. Nonattainment review is not applicable.																								
116.111(a)(2)(I)	PSD review applicability: This site is a major source and is located in a county which is in attainment for all criteria pollutants. The project increases (tpy) were calculated by summing the proposed emissions increases (without considering decreases) and subtracting the baseline emissions. Baseline emissions for the flare (EPN UER044) exceeded the current allowable emissions for CO and NO _x , and the baseline emissions were reduced to the current allowable emissions for these pollutants. Project increases do not exceed major modification significance levels as shown in the table below. PSD review is not applicable. <table><tr><td></td><td>CO (tpy)</td><td>SO₂ (tpy)</td><td>NO_x (tpy)</td><td>VOC (tpy)</td><td>PM (tpy)</td><td>PM₁₀ (tpy)</td><td>PM_{2.5} (tpy)</td></tr><tr><td>Project increases</td><td>40.04</td><td>0.98</td><td>4.85</td><td>9.44</td><td>0.18</td><td>0.18</td><td>0.18</td></tr><tr><td>PSD significance level</td><td>100</td><td>40</td><td>40</td><td>40</td><td>25</td><td>15</td><td>10</td></tr></table>		CO (tpy)	SO ₂ (tpy)	NO _x (tpy)	VOC (tpy)	PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	Project increases	40.04	0.98	4.85	9.44	0.18	0.18	0.18	PSD significance level	100	40	40	40	25	15	10
	CO (tpy)	SO ₂ (tpy)	NO _x (tpy)	VOC (tpy)	PM (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)																		
Project increases	40.04	0.98	4.85	9.44	0.18	0.18	0.18																		
PSD significance level	100	40	40	40	25	15	10																		
116.111(a)(2)(L)	Is Mass Emissions Cap and Trade applicable to the new or modified facilities? No If yes, did the proposed facility, group of facilities, or account obtain allowances to operate: N/A																								
116.140 - 141	Permit Fee: \$ 900.00 Fee certification: M602142																								

Title V Applicability - 30 TAC Chapter 122 Rules

Rule Citation	Requirement
122.10(14)	Title V applicability: The site is subject to the Title V program because it is a major source. The facility currently operates under Site Operating Permit No. O-2288.
122.602	Periodic Monitoring (PM) applicability: PM is applicable because the site is a major source. The following provisions for monitoring are being included in the special conditions: • Monthly recordkeeping of the annual production of ethylene and propylene; • Monthly recordkeeping of the firing rate heat duty for the furnaces; • Continuous flow and composition monitoring of the waste gas stream to the flare; • Recordkeeping of tank emissions; • Weekly monitoring of cooling tower VOC emissions; • Daily/weekly monitoring of TDS in the cooling tower cooling water; • Implementation of the 28MID and 28CNTQ leak detection and repair (LDAR) program for VOC fugitive emissions; • Continuous emission monitoring system (CEMS) to measure and record the

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- concentrations of NO_x, CO, and O₂ in the waste heat boiler exhaust; and
- Daily monitoring of the carbon adsorption systems (CAS) VOC breakthrough.

122.604	Compliance Assurance Monitoring (CAM) applicability: CAM is not applicable because no facility has a pre-controlled potential to emit greater than the amount required for the site to be classified as a major source under 30 TAC § 122.
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Request for Comments

Received From	Program/Area Name	Reviewed By/Date	Comments
Region:	10	Ms. Judy Granger/ January 3, 2017	Missing PBR Registration No. 139463 in Special Conditions. Consider adding alternate flare names to MAERT. Check cooling tower EPN.
City:	Port Neches		
County:	Jefferson		
Comment resolution and/or unresolved issues:	PBR Registration No. 139463 is being added to SC 32. The applicant will use name listed in MAERT. Applicant confirmed cooling tower EPN on the MAERT is the correct number. The Region reviewer was given responses to the comments and had no objections to issuance.		

Process Description

A-3 Olefins Unit manufactures ethylene and propylene. Raw materials, primarily ethane and propane, and steam enter nine cracking furnaces. The cracked gas is then compressed and sent to the recovery section. In the recovery section, the material is processed in a series of distillation columns to separate the materials into the products, which ethylene, propylene, residue gas, C4s, and aromatic distillate. The residue gas is used as fuel gas for the furnaces, heaters, and boilers. The C4s are stored in tanks which are routed to the C4 facility for further processing. The aromatic distillate is separated and stored for further processing. Unreacted ethane and propane are recycled back to the cracking furnaces.

Project Description

Huntsman submitted a renewal application with a concurrent amendment. Huntsman requested an increase in emissions resulting from updated flare calculations resulting from increased fuel gas usage and an increase in the number of hydrogenation reactor regeneration cycles on an annual basis. Registration Nos. 91994, 109215, and 139463 are being incorporated into the permit by reference.

Special Condition No. 5.A relating to control projects that were required to be completed is being removed because all projects were completed in 2006. In addition to the changes discussed in the Pollution Prevention, Sources, Controls BACT section below, the following changes will be made to the Special Conditions upon issuance:

<u>Special Condition No.</u>	<u>Change</u>
6	Requirements relating to an expired schedule of compliance will be removed.
9	The condition allowing a period of time to come into compliance with the No _x /MMBtu requirement will be removed.
17	Recordkeeping requirements for the cooling tower VOC emissions will be increased from 2 to 5 years.
19	Conditions addressing PM emissions will be added.

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| 30 | Recordkeeping requirements will be increased from 2 to 5 years. |
| 32 | This condition identifying the PBRs being incorporated by reference will be added. |

In addition to the changes discussed in the Pollution Prevention, Sources, Controls section below, the following changes will be made to the MAERT upon issuance:

- Particulate matter will be speciated to include PM, PM₁₀, and PM_{2.5}, because PM and PM_{2.5} were not previously represented.
- PM emissions will be added to the cooling tower emissions
- Footnote 9 will be updated because these pollution control projects were completed.

Pollution Prevention, Sources, Controls BACT- [30 TAC 116.311(b)(2) & 30 TAC 116.111(a)(2)(C)]

Flares (EPN UER044 and EPN UER046)

Flare No. 1 and Flare No. 2 are existing flares that receive captured VOC vapors from several process streams and are designed to meet the requirements of 40 CFR § 60.18. Annual and hourly emissions from the flares are increasing as a result of updated calculations. The emission cap for the flares is being updated on the MAERT. Special Condition 10 is being updated to include continuous flow monitoring and a BTU analyzer. The flare is designed to achieve a VOC compound destruction efficiency of 99% for compounds with up to three carbons, and 98% for compounds with four or more carbon atoms. BACT is satisfied for the flare.

Spray Drum (EPN A3FA350)

The spray drum is an existing unit for decoking of the cracking furnaces and catalyst regeneration. Annual emissions are increasing as a result of the proposed increase in hydrogenation reactor regeneration cycles. Emissions are being updated on the MAERT. The number of hydrogenation reactor cycles is being updated from five cycles to ten cycles in Special Condition No. 7. The spray drum is operated with good combustion practices to the extent possible during decoking and hydrogenation cycles, and the decoking duration and frequency limited by maximizing furnace run time between furnace decoking. This is consistent with recent permit reviews for a similar process. BACT is satisfied for the spray drum.

Impacts Evaluation - 30 TAC 116.111(a)(2)(J)

Was modeling conducted?	Yes	Type of Modeling:	SCREEN3
Will GLC of any air contaminant cause violation of NAAQS?			No
Is this a sensitive location with respect to nuisance?			No
[§116.111(a)(2)(A)(ii)] Is the site within 3000 feet of any school?			No
Additional site/land use information: industrial			

Summary of Modeling Results

NAAQS and State Property Line Standard

Proposed emission increases of CO, NO₂, SO₂, PM₁₀, and PM_{2.5} were modeled using SCREEN3 dispersion modeling software to demonstrate that the emissions will not cause an exceedance of the NAAQS or the State Property Line Standard. PM₁₀ and PM_{2.5} hourly emissions are not increasing, and the 24-hour averaging time is not required to be evaluated. The maximum ground level concentrations (GLC_{max}) of all pollutants were below the significant impact level (SIL) for the NAAQS analysis. The GLC_{max} of SO₂ was below the SIL for the State Property Line Standard analysis. The results are shown in the tables below.

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Pollutant	Averaging Time	SIL	GLC _{max} (µg/m ³)
CO	1-hr	2,000	9.0
	8-hr	500	6.3
NO ₂	1-hr	7.5	1.00
	annual	1	0.017
PM ₁₀	annual	1	0.02
PM _{2.5}	annual	0.3	0.02
SO ₂ (NAAQS)	1-hr	7.8	0.0488
	3-hr	25	0.0439
	24-hr	5	0.0195
	annual	1	0.0233
SO ₂ (State Property Line)	30-min	20.4	0.0488

Because the EPA vacated the 24-hr and annual SILs for PM_{2.5}, an appropriate background concentration was subtracted from the NAAQS, yielding differences of 19.33 µg/m³ and 4.79 µg/m³, respectively. Because these values are greater than the corresponding SIL, the use of the SIL is justified.

Background concentrations for PM_{2.5} were obtained from the EPA AIRS Monitor No. 220190009 located at 2284 Paul Bellow Road, Vinton, Calcasieu Parish, Louisiana. The applicant used a three-year average 2013-2015 of the 98th percentile of the daily average concentrations for the 24-hr value (15.67 µg/m³) and a three-year average 2013-2015 of the annual concentrations for the annual value (7.21 µg/m³). The differences were less than the PM_{2.5} SIL values for both the 24-hour and annual averages. This monitor is reasonable based on a quantitative analysis of source emissions located within ten kilometers (km) of the project site and monitor location. Based on the modeled concentrations, this project is not expected to cause an exceedance of the NAAQS.

State Health Effects Review

The applicant provided a health effects analysis using the TCEQ Modeling and Effects Review Applicability (MERA) guidance document (APDG 5874) and SCREEN3 dispersion modeling software to evaluate potential off-site impacts. The constituents evaluated include benzene, 1,3-butadiene, butane, ethylene, pentane, propane, and propylene.

Propane and propylene are simple asphyxiates and do not require an effects review, which satisfies Step 2 of the MERA analysis. Based on the proposed emission increases, the annual effects screening level (ESL) is greater than or equal to 10% of the short-term ESL, and the short term emission rate increases are within the appropriate ranges to be considered a *de minimis* level increase in emissions for butane and pentane. This satisfies Step 4C of the MERA analysis and no further review of these constituents is required.

SCREEN3 modeling software was used to obtain the concentrations due to the emission increases of the remaining contaminants. The predicted concentrations of benzene, butadiene, and ethylene were below 10% of the short-term and long-term ESLs, which satisfies Step No. 5 of the MERA. No further review of these constituents is required.

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Pollutant	Short Term ESL ($\mu\text{g}/\text{m}^3$)	Long Term ESL ($\mu\text{g}/\text{m}^3$)	Short Term GLC _{max} ($\mu\text{g}/\text{m}^3$)	Long Term GLC _{max} ($\mu\text{g}/\text{m}^3$)
Benzene	170	4.5	0.002	0.0002
1,3-Butadiene	510	9.9	0.002	0.0002
Ethylene	1400	34	0.047	0.0038

Permit Concurrence and Related Authorization Actions

Is the applicant in agreement with special conditions?	Yes
Company representative(s):	Ms. Sarah Thom (Waid Environmental)
Contacted via:	Email
Date of contact:	February 7, 2017
Other permit(s) or permits by rule affected by this action:	None
List permit and/or PBR number(s) and actions required or taken:	N/A

Cara Hill

2/7/2017

[Signature]

2/9/17

Project Reviewer
Cara Hill

Date

Team Leader
Cheryl Covone

Date