FEDERAL OPERATING PERMIT

A FEDERAL OPERATING PERMIT IS HEREBY ISSUED TO
Formosa Plastics Corporation, Texas

AUTHORIZING THE OPERATION OF
Formosa Point Comfort Plant
PE3 Plant
Petrochemical Manufacturing

LOCATED AT
Calhoun County, Texas
Latitude 28° 41′ 20″ Longitude 96° 32′ 50″
Regulated Entity Number: RN100218973

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: O4166 Issuance Date: July 15, 2020

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, Subparts CC or FFFF as identified in the attached Applicable Requirements Summary table are subject to 30 TAC Chapter 113,

Subchapter C, §113.340 or §113.890, respectively, which incorporate the 40 CFR Part 63 Subparts 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 and constructed after January 31, 1972 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. 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.

C. 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)

4. 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)

5. 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.

6. For miscellaneous chemical process facilities subject to maintenance wastewater requirements as specified in 40 CFR § 63.2485, Table 7, the permit holder shall comply with the requirements of 40 CFR § 63.105 (relating to Maintenance Wastewater Requirements) (Title 30 TAC Chapter 113, Subchapter C, § 113.890 incorporated by reference).

7. The permit holder shall comply with certified registrations submitted to the TCEQ for purposes of establishing federally enforceable emission limits. A copy of the certified registration shall be maintained with the permit. Records sufficient to demonstrate compliance with the established limits shall be maintained. The certified registration and records demonstrating compliance shall be provided, on request, to representatives of the appropriate TCEQ regional office and any local air pollution control agency having jurisdiction over the site. The permit holder shall submit updated certified registrations when changes at the site require establishment of new emission limits. If changes result in emissions that do not remain below major source thresholds, the permit holder shall submit a revision application to codify the appropriate requirements in the permit.

Additional Monitoring Requirements

8. 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 or minimum frequency 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

9. 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

10. 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.

11. 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).

12. The permit holder shall comply with the following requirements for Air Quality Standard Permits:

    A. Registration requirements listed in 30 TAC § 116.611, unless otherwise provided for in an Air Quality Standard Permit

    B. General Conditions listed in 30 TAC § 116.615, unless otherwise provided for in an Air Quality Standard Permit

    C. Requirements of the non-rule Air Quality Standard Permit for Pollution Control Projects

Compliance Requirements

13. 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.

14. 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

15. 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

16. 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.

Alternative Requirements

17. The permit holder shall comply with the approved alternative means of control (AMOC); alternative monitoring, recordkeeping, or reporting requirements; or requirements determined to be equivalent to an otherwise applicable requirement contained in the Alternative Requirements attachment of this permit. Units complying with an approved alternative requirement have reference to the approval in the Applicable Requirements summary listing for the unit. The permit holder shall maintain the original documentation, from the TCEQ Executive Director, demonstrating the method or limitation utilized. Documentation shall be maintained and made available in accordance with 30 TAC § 122.144.

Permit Location

18. 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)

19. 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

Alternative Requirement

Applicable Requirements Summary

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
GRP-VENT	POLYMER MANUFACTURING PROCESSES	PE3-01, PE3-02A, PE3-02B, PE3-03, PE3-04, PE3-05, PE3-06, PE3-07, PE3-08A, PE3-08B, PE3-14	60DDD-2	40 CFR Part 60, Subpart DDD	Uncontrolled Annual Emissions = Uncontrolled annual emissions are less than 1.6 Mg/yr (1.76 tpy).
GRP-VENT	POLYMER MANUFACTURING PROCESSES	PE3-01, PE3-02A, PE3-02B, PE3-03, PE3-04, PE3-05, PE3-06, PE3-07, PE3-08A, PE3-08B, PE3-14	60DDD-3	40 CFR Part 60, Subpart DDD	Uncontrolled Annual Emissions = Uncontrolled annual emissions are 1.6 Mg/yr (1.76 tpy) or greater.
PE3 UNIT	CHEMICAL MANUFACTURING PROCESS	N/A	63FFFF-1	40 CFR Part 63, Subpart FFFF	No changing attributes.
PE3-10	FLARES	N/A	R1111-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
PE3-10	FLARES	N/A	60A-1	40 CFR Part 60, Subpart A	No changing attributes.
PE3-10	FLARES	N/A	63A-1	40 CFR Part 63, Subpart A	No changing attributes.
PE3-10	FLARES	N/A	63FFFF-4	40 CFR Part 63, Subpart CC	No changing attributes.
PE3-10	MISCELLANEOUS UNITS	N/A	63FFFF-4	40 CFR Part 63, Subpart FFFF	No changing attributes.
PE3-12	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	R1111-2	30 TAC Chapter 111, Visible Emissions	No changing attributes.
PE3-13	FUGITIVE EMISSION UNITS	N/A	60DDD-4	40 CFR Part 60, Subpart DDD	No changing attributes.
PE3-13	FUGITIVE EMISSION UNITS	N/A	63FFFF-3	40 CFR Part 63, Subpart FFFF	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
PE3-15	FLARES	N/A	R1111-1	30 TAC Chapter 111, Visible Emissions	No changing attributes.
PE3-15	FLARES	N/A	60A-1	40 CFR Part 60, Subpart A	No changing attributes.
PE3-15	FLARES	N/A	63A-1	40 CFR Part 63, Subpart A	No changing attributes.
PE3-15	FLARES	N/A	63FFFF-4	40 CFR Part 63, Subpart CC	No changing attributes.
PE3-15	MISCELLANEOUS UNITS	N/A	63FFFF-4	40 CFR Part 63, Subpart FFFF	No changing attributes.
VENTPE3-10	POLYMER MANUFACTURING PROCESSES	N/A	60DDD-1	40 CFR Part 60, Subpart DDD	No changing attributes.
VENTPE3-10	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	63FFFF-1	40 CFR Part 63, Subpart FFFF	No changing attributes.
VENTPE3-15	MISCELLANEOUS UNITS	N/A	60DDD-1	40 CFR Part 60, Subpart DDD	No changing attributes.
VENTPE3-15	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	63FFFF-1	40 CFR Part 63, Subpart FFFF	No changing attributes.
VNTHEX-02	MISCELLANEOUS UNITS	N/A	60DDD-1	40 CFR Part 60, Subpart DDD	No changing attributes.
VNTHEX-02	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	63FFFF-2	40 CFR Part 63, Subpart FFFF	No changing attributes.
VNTPE3-11A	POLYMER MANUFACTURING PROCESSES	N/A	60DDD-1	40 CFR Part 60, Subpart DDD	No changing attributes.
VNTPE3-11A	EMISSION POINTS/STATIONARY	N/A	63FFFF-2	40 CFR Part 63, Subpart FFFF	No changing attributes.

Unit Summary

Unit/Group/ Process ID No.	Unit Type	Group/Inclusive Units	SOP Index No.	Regulation	Requirement Driver
	VENTS/PROCESS VENTS				
VNTPE3-11B	POLYMER MANUFACTURING PROCESSES	N/A	60DDD-1	40 CFR Part 60, Subpart DDD	No changing attributes.
VNTPE3-11B	EMISSION POINTS/STATIONARY VENTS/PROCESS VENTS	N/A	63FFFF-2	40 CFR Part 63, Subpart FFFF	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)
GRP-VENT	EU	60DDD-2	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 60.560(g)	Vent streams emitting continuous emissions with uncontrolled annual emissions of < 1.6 Mg/yr (1.76 Tons/yr) or with weight % TOC of < 0.10 % from facilities as specified, exempted from §60.562-1(a)(1).	[G]§ 60.564(d)	§ 60.565(a) § 60.565(a)(10) § 60.565(h)	§ 60.565(a) § 60.565(a)(10) § 60.565(k) § 60.565(k)(6) § 60.565(k)(7)
GRP-VENT	EU	60DDD-3	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 60.560(g)	Vent streams emitting continuous emissions with uncontrolled annual emissions of < 1.6 Mg/yr (1.76 Tons/yr) or with weight % TOC of < 0.10 % from facilities as specified, exempted from §60.562-1(a)(1).	[G]§ 60.564(d)	§ 60.565(a) § 60.565(a)(10) § 60.565(h)	§ 60.565(a) § 60.565(a)(10) § 60.565(k) § 60.565(k)(6) § 60.565(k)(7)
PE3 UNIT	PRO	63FFFF-1	112(B) HAPS	40 CFR Part 63, Subpart FFFF	§ 63.2440(a) § 63.2450(a)(2) § 63.2450(c)(2) [G]§ 63.2450(e)(4) § 63.2450(l) § 63.2450(r) § 63.2450(u) [G]§ 63.2450(v)	This subpart applies to each miscellaneous organic chemical manufacturing affected source.	§ 63.2445(d) § 63.2450(g)(6) § 63.2450(g)(7) [G]§ 63.2450(v)	§ 63.2525 § 63.2525(a) [G]§ 63.2525(b) § 63.2525(j) [G]§ 63.2525(l) [G]§ 63.2525(m) § 63.2525(n) [G]§ 63.2525(p)	§ 63.2435(d) § 63.2445(c) § 63.2450(g)(5) § 63.2450(m) § 63.2450(m)(1) § 63.2450(m)(2) § 63.2515(a) § 63.2515(b)(2) § 63.2515(c) § 63.2520(a) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 [G]§ 63.2520(b) [G]§ 63.2520(c) [G]§ 63.2520(d) § 63.2520(e) § 63.2520(e)(1) [G]§ 63.2520(e)(10) [G]§ 63.2520(e)(14)

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)
									§ 63.2520(e)(2) § 63.2520(e)(3) § 63.2520(e)(4) § 63.2520(e)(5) § 63.2520(e)(5)(i) [G]§ 63.2520(e)(5)(ii) [G]§ 63.2520(e)(5)(iii) § 63.2520(e)(6) § 63.2520(e)(7) § 63.2520(e)(9) § 63.2520(f) § 63.2520(g)
PE3-10	CD	R1111-1	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
PE3-10	CD	60A-1	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)(iii) § 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) § 60.18(f)(5)	None	None
PE3-10	CD	63A-1	Opacity	40 CFR Part 63, Subpart A	§ 63.11(b)(4) § 63.11(b)(1) § 63.11(b)(2) § 63.11(b)(3) § 63.11(b)(5) § 63.11(b)(6)(ii) § 63.11(b)(7)(iii)	Flares shall be designed and operated with no visible emissions, except for periods of a total of 5 minutes or less during any 2 consecutive hrs. Test Method 22 in App. A of part 60 of this chapter shall be used.	§ 63.11(b)(4) § 63.11(b)(5) § 63.11(b)(7)(i)	None	None
PE3-10	CD	63FFFF-4	Opacity	40 CFR Part 63,	§ 63.670(c)	Visible emissions. The	§ 63.670(b)	[G]§ 63.670(h)	[G]§ 63.670(h)

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)
				Subpart CC	§ 63.670 § 63.670(b) § 63.670(d) § 63.670(d)(2) § 63.670(e) § 63.670(o) [G]§ 63.670(o)(1) [G]§ 63.670(o)(2) [G]§ 63.670(o)(3) [G]§ 63.670(o)(4) [G]§ 63.670(o)(5) § 63.670(o)(6) [G]§ 63.670(o)(7) [G]§ 63.671(c)	owner or operator shall specify the smokeless design capacity of each flare and operate with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare. The owner or operator shall monitor for visible emissions from the flare as specified in §63.670(h).	§ 63.670(c) § 63.670(d)(2) § 63.670(e) § 63.670(g) [G]§ 63.670(h) [G]§ 63.670(i) [G]§ 63.670(j) [G]§ 63.670(k) [G]§ 63.670(l) [G]§ 63.670(m) [G]§ 63.671(a) [G]§ 63.671(b) [G]§ 63.671(c) [G]§ 63.671(d) [G]§ 63.671(e)	[G]§ 63.670(i) [G]§ 63.670(j) [G]§ 63.670(o)(1) [G]§ 63.670(o)(5) § 63.670(o)(6) § 63.670(p) [G]§ 63.671(a) [G]§ 63.671(b)	[G]§ 63.670(j) [G]§ 63.670(l) [G]§ 63.670(o)(2) § 63.670(q)
PE3-10	EU	63FFFF-4	112(B) HAPS	40 CFR Part 63, Subpart FFFF	[G]§ 63.2450(e)(5) [G]§ 63.2450(k) [G]§ 63.670	For any flare that is used to reduce organic HAP emissions from an MCPU, comply with the requirements of §63.2450(e)(5).	[G]§ 63.2450(e)(5) § 63.2450(k)(8) [G]§ 63.670 [G]§ 63.671	§ 63.2450(e)(5)(xii) § 63.2450(k)(7) [G]§ 63.2525(m)	§ 63.2450(e)(5)(iv) § 63.2450(e)(5)(xi) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(d)(3) [G]§ 63.2520(e)(11)
PE3-12	EP	R1111-2	Opacity	30 TAC Chapter 111, Visible Emissions	§ 111.111(a)(1)(C) § 111.111(a)(1)(E)	Visible emissions from any stationary vent shall not exceed an opacity of 15% averaged over a six minute period for any source with a total flow rate of at least 100,000 acfm unless a CEMS is installed.	[G]§ 111.111(a)(1)(F) ** See Periodic Monitoring Summary	None	None
PE3-13	EU	60DDD-4	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 63.2535(h)	For equipment subject to 40 CFR Part 63, Subpart FFFF that is also subject to 40 CFR Part 60, Subpart DDD, the permit holder may elect to apply 40 CFR Part 63,	§ 63.2535(h)	§ 63.2535(h)	§ 63.2535(h)

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)
						Subpart FFFF to all such equipment. Compliance as described in §63.2535(h) will constitute compliance with 40 CFR Part 60, Subpart DDD.			
PE3-13	EU	63FFFF-3	VOC/TOC	40 CFR Part 63, Subpart FFFF	§ 63.2480(a)-Table 6.1.a.i [G]§ 63.2480(b) § 63.2480(e)(4)(i) § 63.2480(e)(4)(ii)	For all equipment that is in organic HAP service and that is part of any MCPU, comply with the requirements of subpart UU of this part and the requirements referenced therein, except as specified in §63.2480(b) and (d) through (f).	§ 63.2480(a) § 63.2480(a)-Table 6.1.a.ii [G]§ 63.2480(b)	§ 63.2480(a)-Table 6.1.a.ii § 63.2525(a)	§ 63.2520(a) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(e)
PE3-15	CD	R1111-1	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
PE3-15	CD	60A-1	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)(iii) § 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) § 60.18(f)(5)	None	None
PE3-15	CD	63A-1	Opacity	40 CFR Part 63, Subpart A	§ 63.11(b)(4) § 63.11(b)(1) § 63.11(b)(2) § 63.11(b)(3) § 63.11(b)(5) § 63.11(b)(6)(ii)	Flares shall be designed and operated with no visible emissions, except for periods of a total of 5 minutes or less during any 2 consecutive hrs. Test	§ 63.11(b)(4) § 63.11(b)(5) § 63.11(b)(7)(i)	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)
					§ 63.11(b)(7)(iii)	Method 22 in App. A of part 60 of this chapter shall be used.			
PE3-15	CD	63FFFF-4	Opacity	40 CFR Part 63, Subpart CC	§ 63.670(c) § 63.670 § 63.670(b) § 63.670(d) § 63.670(d)(2) § 63.670(e) § 63.670(o) [G]§ 63.670(o)(1) [G]§ 63.670(o)(2) [G]§ 63.670(o)(3) [G]§ 63.670(o)(4) [G]§ 63.670(o)(5) § 63.670(o)(6) [G]§ 63.670(o)(7) [G]§ 63.671(c)	Visible emissions. The owner or operator shall specify the smokeless design capacity of each flare and operate with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours, when regulated material is routed to the flare and the flare vent gas flow rate is less than the smokeless design capacity of the flare. The owner or operator shall monitor for visible emissions from the flare as specified in §63.670(h).	§ 63.670(b) § 63.670(c) § 63.670(d)(2) § 63.670(e) § 63.670(g) [G]§ 63.670(h) [G]§ 63.670(i) [G]§ 63.670(j) [G]§ 63.670(k) [G]§ 63.670(l) [G]§ 63.670(m) [G]§ 63.671(a) [G]§ 63.671(b) [G]§ 63.671(c) [G]§ 63.671(d) [G]§ 63.671(e)	[G]§ 63.670(h) [G]§ 63.670(i) [G]§ 63.670(j) [G]§ 63.670(o)(1) [G]§ 63.670(o)(5) § 63.670(o)(6) § 63.670(p) [G]§ 63.671(a) [G]§ 63.671(b)	[G]§ 63.670(h) [G]§ 63.670(j) [G]§ 63.670(l) [G]§ 63.670(o)(2) § 63.670(q)
PE3-15	EU	63FFFF-4	112(B) HAPS	40 CFR Part 63, Subpart FFFF	[G]§ 63.2450(e)(5) [G]§ 63.2450(k) [G]§ 63.670	For any flare that is used to reduce organic HAP emissions from an MCPU, comply with the requirements of §63.2450(e)(5).	[G]§ 63.2450(e)(5) § 63.2450(k)(8) [G]§ 63.670 [G]§ 63.671	§ 63.2450(e)(5)(xii) § 63.2450(k)(7) [G]§ 63.2525(m)	§ 63.2450(e)(5)(iv) § 63.2450(e)(5)(xi) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(d)(3) [G]§ 63.2520(e)(11)
VENTPE3-10	EU	60DDD-1	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 63.2535(h)	For equipment subject to 40 CFR Part 63, Subpart FFFF that is also subject to 40 CFR Part 60, Subpart DDD, the permit holder may elect to apply 40 CFR Part 63, Subpart FFFF to all such equipment. Compliance as described in §63.2535(h) will constitute compliance	§ 63.2535(h)	§ 63.2535(h)	§ 63.2535(h)

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)
						with 40 CFR Part 60, Subpart DDD.			
VENTPE3-10	EP	63FFFF-1	112(B) HAPS	40 CFR Part 63, Subpart FFFF	§ 63.2455(a)-Table 1.1.a.ii § 63.11(b) § 63.2450(b) [G]§ 63.2450(e)(5) [G]§ 63.2450(e)(6) § 63.2450(k)(8) § 63.2455(a) § 63.2455(b) § 63.2455(b)(1) [G]§ 63.670 § 63.982(b) § 63.983(a)(1) § 63.983(a)(2) § 63.983(d)(1) § 63.983(d)(1)(i) [G]§ 63.983(d)(2) § 63.983(d)(3) § 63.987(a) § 63.987(b)(1) § 63.987(b)(3) [G]§ 63.997(c)(1) § 63.997(c)(3)	For each Group 1continuous process vent, the owner or operator must reduce emissions of total organic HAP by venting emissions through a closed vent system to a flare.	[G]§ 63.115(d)(2)(v) § 63.115(d)(3)(iii) [G]§ 63.2450(e)(5) [G]§ 63.2450(e)(6) § 63.2450(k)(8) [G]§ 63.670 [G]§ 63.671 § 63.983(b) [G]§ 63.983(b)(1) [G]§ 63.983(b)(2) [G]§ 63.983(b)(3) [G]§ 63.983(c)(1) § 63.983(c)(2) § 63.983(c)(3) § 63.983(d)(1) § 63.983(d)(1)(ii) [G]§ 63.987(b)(3)(i) § 63.987(b)(3)(ii) § 63.987(b)(3)(iii) § 63.987(b)(3)(iv) § 63.987(c) § 63.997(a) [G]§ 63.997(c)(1) § 63.997(c)(2) § 63.997(c)(3) § 63.997(c)(3)(i) § 63.997(c)(3)(ii)	§ 63.2450(e)(5)(xii) § 63.2450(f)(2) § 63.2450(f)(2)(i) § 63.2450(f)(2)(ii) § 63.2450(k)(7) [G]§ 63.2525(m) § 63.2525(n) § 63.983(b) [G]§ 63.983(d)(2) § 63.987(b)(1) § 63.987(c) § 63.998(a)(1) [G]§ 63.998(a)(1)(i) § 63.998(a)(1)(ii) § 63.998(a)(1)(iii)(A) § 63.998(a)(1)(iii)(B) [G]§ 63.998(b)(1) [G]§ 63.998(b)(2) [G]§ 63.998(b)(3) [G]§ 63.998(b)(5) [G]§ 63.998(d)(1) § 63.998(d)(3)(i) § 63.998(d)(3)(ii) § 63.998(d)(5)	§ 63.2450(e)(5)(iv) § 63.2450(e)(5)(xi) § 63.2450(f)(2)(ii) § 63.2450(q) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(d)(3) [G]§ 63.2520(e)(11) § 63.2520(e)(12) § 63.987(b)(1) § 63.997(c)(3) § 63.998(a)(1)(iii)(A) [G]§ 63.998(b)(3) [G]§ 63.999(a)(1) [G]§ 63.999(a)(2) § 63.999(b)(5) § 63.999(c)(1) § 63.999(c)(2)(i) § 63.999(c)(3) § 63.999(c)(6) [G]§ 63.999(c)(6)(i) § 63.999(c)(6)(iv) [G]§ 63.999(d)(1) [G]§ 63.999(d)(2)
VENTPE3-15	EU	60DDD-1	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 63.2535(h)	For equipment subject to 40 CFR Part 63, Subpart FFFF that is also subject to 40 CFR Part 60, Subpart DDD, the permit holder may elect to apply 40 CFR Part 63, Subpart FFFF to all such equipment. Compliance as described in §63.2535(h)	§ 63.2535(h)	§ 63.2535(h)	§ 63.2535(h)

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)
						will constitute compliance with 40 CFR Part 60, Subpart DDD.			
VENTPE3-15	EP	63FFFF-1	112(B) HAPS	40 CFR Part 63, Subpart FFFF	§ 63.2455(a)-Table 1.1.a.ii § 63.11(b) § 63.2450(b) [G]§ 63.2450(e)(5) [G]§ 63.2450(e)(6) § 63.2450(k)(8) § 63.2455(a) § 63.2455(b) § 63.2455(b)(1) [G]§ 63.670 § 63.982(b) § 63.983(a)(1) § 63.983(a)(2) § 63.983(d)(1) § 63.983(d)(1)(i) [G]§ 63.983(d)(2) § 63.983(d)(3) § 63.987(a) § 63.987(b)(1) § 63.987(b)(3) [G]§ 63.997(c)(1) § 63.997(c)(3)	For each Group 1 continuous process vent, the owner or operator must reduce emissions of total organic HAP by venting emissions through a closed vent system to a flare.	[G]§ 63.115(d)(2)(v) § 63.115(d)(3)(iii) [G]§ 63.2450(e)(5) [G]§ 63.2450(e)(6) § 63.2450(k)(8) [G]§ 63.670 [G]§ 63.671 § 63.983(b) [G]§ 63.983(b)(1) [G]§ 63.983(b)(2) [G]§ 63.983(b)(3) [G]§ 63.983(c)(1) § 63.983(c)(2) § 63.983(c)(3) § 63.983(d)(1) § 63.983(d)(1)(ii) [G]§ 63.987(b)(3)(i) § 63.987(b)(3)(ii) § 63.987(b)(3)(iii) § 63.987(b)(3)(iv) § 63.987(c) § 63.997(a) [G]§ 63.997(c)(1) § 63.997(c)(2) § 63.997(c)(3) § 63.997(c)(3)(i) § 63.997(c)(3)(ii)	§ 63.2450(e)(5)(xii) § 63.2450(f)(2) § 63.2450(f)(2)(i) § 63.2450(f)(2)(ii) § 63.2450(k)(7) [G]§ 63.2525(m) § 63.2525(n) § 63.983(b) [G]§ 63.983(d)(2) § 63.987(b)(1) § 63.987(c) § 63.998(a)(1) [G]§ 63.998(a)(1)(i) § 63.998(a)(1)(ii) § 63.998(a)(1)(iii)(A) § 63.998(a)(1)(iii)(B) [G]§ 63.998(b)(1) [G]§ 63.998(b)(2) [G]§ 63.998(b)(3) [G]§ 63.998(b)(5) [G]§ 63.998(d)(1) § 63.998(d)(3)(i) § 63.998(d)(3)(ii) § 63.998(d)(5)	§ 63.2450(e)(5)(iv) § 63.2450(e)(5)(xi) § 63.2450(f)(2)(ii) § 63.2450(q) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(d)(3) [G]§ 63.2520(e)(11) § 63.2520(e)(12) § 63.987(b)(1) § 63.997(c)(3) § 63.998(a)(1)(iii)(A) [G]§ 63.998(b)(3) [G]§ 63.999(a)(1) [G]§ 63.999(a)(2) § 63.999(b)(5) § 63.999(c)(1) § 63.999(c)(2)(i) § 63.999(c)(3) § 63.999(c)(6) [G]§ 63.999(c)(6)(i) § 63.999(c)(6)(iv) [G]§ 63.999(d)(1) [G]§ 63.999(d)(2)
VNTHEX-02	EU	60DDD-1	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 63.2535(h)	For equipment subject to 40 CFR Part 63, Subpart FFFF that is also subject to 40 CFR Part 60, Subpart DDD, the permit holder may elect to apply 40 CFR Part 63, Subpart FFFF to all such equipment. Compliance as	§ 63.2535(h)	§ 63.2535(h)	§ 63.2535(h)

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)
						described in §63.2535(h) will constitute compliance with 40 CFR Part 60, Subpart DDD.			
VNTHEX-02	EP	63FFFF-2	112(B) HAPS	40 CFR Part 63, Subpart FFFF	§ 63.2455(a)-Table 1.1.a.i § 63.2450(b) [G]§ 63.2450(e)(6) § 63.2450(i)(1) § 63.2450(i)(2) § 63.2455(a) § 63.2455(b) § 63.2455(b)(1) § 63.982(c) § 63.982(c)(2) § 63.983(a)(1) § 63.983(a)(2) § 63.983(d)(1) § 63.983(d)(1)(i) [G]§ 63.983(d)(2) § 63.983(d)(3) § 63.988(a)(1) § 63.988(a)(2) § 63.996(c)(1) § 63.996(c)(2) § 63.996(c)(2)(i) § 63.996(c)(3) § 63.996(c)(4) § 63.996(c)(5) § 63.996(c)(6) [G]§ 63.997(c)(1) § 63.997(c)(3) [G]§ 63.997(d)	For each Group 1 continuous process vent, the owner or operator must reduce emissions to an outlet process concentration less than or equal to 20 ppmv as organic HAP or TOC by venting emissions through a closed-vent system to any combination of control devices (except flare).	[G]§ 63.115(d)(2)(v) § 63.115(d)(3)(iii) [G]§ 63.2450(e)(6) § 63.2450(g) § 63.2450(g)(1) § 63.2450(g)(2) [G]§ 63.2450(g)(3) § 63.2450(g)(4) § 63.2450(k)(6) § 63.983(b) [G]§ 63.983(b)(1) [G]§ 63.983(b)(2) [G]§ 63.983(b)(3) [G]§ 63.983(c)(1) § 63.983(c)(2) § 63.983(c)(3) § 63.983(d)(1) § 63.983(d)(1)(ii) § 63.988(b)(1) § 63.988(c)(1) § 63.996(b)(1) § 63.996(b)(1)(i) § 63.996(b)(2) § 63.997(a) [G]§ 63.997(c)(1) § 63.997(c)(2) § 63.997(c)(3) § 63.997(c)(3)(iii) [G]§ 63.997(d) § 63.997(e) § 63.997(e)(1)(i) [G]§ 63.997(e)(1)(iv) [G]§ 63.997(e)(1)(v) § 63.997(e)(2)	§ 63.2450(k)(6) § 63.2525(g) § 63.2525(h) § 63.2525(n) § 63.983(b) [G]§ 63.983(d)(2) § 63.988(b)(1) § 63.996(c)(2)(ii) § 63.998(a)(2)(i) § 63.998(a)(2)(ii)(A) § 63.998(a)(2)(ii)(B)(1) § 63.998(a)(2)(ii)(B)(4) [G]§ 63.998(b)(1) [G]§ 63.998(b)(2) [G]§ 63.998(b)(3) [G]§ 63.998(b)(5) [G]§ 63.998(c)(1) § 63.998(c)(2)(iii) § 63.998(c)(3)(iii) [G]§ 63.998(d)(1) § 63.998(d)(3)(i) § 63.998(d)(3)(ii) § 63.998(d)(5)	§ 63.2450(q) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(e)(12) § 63.988(b)(1) § 63.996(b)(2) § 63.996(c)(6) § 63.997(c)(3) § 63.998(a)(2)(ii)(A) [G]§ 63.998(b)(3) [G]§ 63.999(a)(1) [G]§ 63.999(a)(2) [G]§ 63.999(b)(3) § 63.999(b)(5) § 63.999(c)(1) § 63.999(c)(2)(i) § 63.999(c)(6) [G]§ 63.999(c)(6)(i) § 63.999(c)(6)(iv)

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)
							§ 63.997(e)(2)(i) § 63.997(e)(2)(i)(B) § 63.997(e)(2)(ii) § 63.997(e)(2)(iii) § 63.997(e)(2)(iii)(A) [G]§ 63.997(e)(2)(iii)(B) [G]§ 63.997(e)(2)(iii)(C) [G]§ 63.997(e)(2)(iii)(D) [G]§ 63.997(e)(2)(iii)(E)		
VNTPE3-11A	EU	60DDD-1	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 63.2535(h)	For equipment subject to 40 CFR Part 63, Subpart FFFF that is also subject to 40 CFR Part 60, Subpart DDD, the permit holder may elect to apply 40 CFR Part 63, Subpart FFFF to all such equipment. Compliance as described in §63.2535(h) will constitute compliance with 40 CFR Part 60, Subpart DDD.	§ 63.2535(h)	§ 63.2535(h)	§ 63.2535(h)
VNTPE3-11A	EU	63FFFF-2	112(B) HAPS	40 CFR Part 63, Subpart FFFF	§ 63.2455(a)-Table 1.1.a.i § 63.2450(b) [G]§ 63.2450(e)(6) § 63.2450(i)(1) § 63.2450(i)(2) § 63.2455(a) § 63.2455(b) § 63.2455(b)(1) § 63.982(c) § 63.982(c)(2) § 63.983(a)(1) § 63.983(a)(2)	For each Group 1 continuous process vent, the owner or operator must reduce emissions to an outlet process concentration less than or equal to 20 ppmv as organic HAP or TOC by venting emissions through a closed-vent system to any combination of control devices (except flare).	[G]§ 63.115(d)(2)(v) § 63.115(d)(3)(iii) [G]§ 63.2450(e)(6) § 63.2450(g) § 63.2450(g)(1) § 63.2450(g)(2) [G]§ 63.2450(g)(3) § 63.2450(g)(4) § 63.2450(k)(6) § 63.983(b) [G]§ 63.983(b)(1) [G]§ 63.983(b)(2) [G]§ 63.983(b)(3)	§ 63.2450(k)(6) § 63.2525(g) § 63.2525(h) § 63.2525(n) § 63.983(b) [G]§ 63.983(d)(2) § 63.988(b)(1) § 63.996(c)(2)(ii) § 63.998(a)(2)(i) § 63.998(a)(2)(ii)(A) § 63.998(a)(2)(ii)(B)(1) § 63.998(a)(2)(ii)(B)(4) [G]§ 63.998(b)(1)	§ 63.2450(q) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(e)(12) § 63.988(b)(1) § 63.996(b)(2) § 63.996(c)(6) § 63.997(c)(3) § 63.998(a)(2)(ii)(A) [G]§ 63.998(b)(3) [G]§ 63.999(a)(1) [G]§ 63.999(a)(2)

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)
					§ 63.983(d)(1) § 63.983(d)(1)(i) [G]§ 63.983(d)(2) § 63.983(d)(3) § 63.988(a)(1) § 63.988(a)(2) § 63.996(c)(1) § 63.996(c)(2) § 63.996(c)(2)(i) § 63.996(c)(3) § 63.996(c)(4) § 63.996(c)(5) § 63.996(c)(6) [G]§ 63.997(c)(1) § 63.997(c)(3) [G]§ 63.997(d)		[G]§ 63.983(c)(1) § 63.983(c)(2) § 63.983(c)(3) § 63.983(d)(1) § 63.983(d)(1)(ii) § 63.988(b)(1) § 63.988(c)(1) § 63.996(b)(1) § 63.996(b)(1)(i) § 63.996(b)(2) § 63.997(a) [G]§ 63.997(c)(1) § 63.997(c)(2) § 63.997(c)(3) § 63.997(c)(3)(iii) [G]§ 63.997(d) § 63.997(e) § 63.997(e)(1)(i) [G]§ 63.997(e)(1)(iv) [G]§ 63.997(e)(1)(v) § 63.997(e)(2) § 63.997(e)(2)(i) § 63.997(e)(2)(i)(B) § 63.997(e)(2)(ii) § 63.997(e)(2)(iii) § 63.997(e)(2)(iii)(A) [G]§ 63.997(e)(2)(iii)(B) [G]§ 63.997(e)(2)(iii)(C) [G]§ 63.997(e)(2)(iii)(D) [G]§ 63.997(e)(2)(iii)(E)	[G]§ 63.998(b)(2) [G]§ 63.998(b)(3) [G]§ 63.998(b)(5) [G]§ 63.998(c)(1) § 63.998(c)(2)(iii) § 63.998(c)(3)(iii) [G]§ 63.998(d)(1) § 63.998(d)(3)(i) § 63.998(d)(3)(ii) § 63.998(d)(5)	[G]§ 63.999(b)(3) § 63.999(b)(5) § 63.999(c)(1) § 63.999(c)(2)(i) § 63.999(c)(6) [G]§ 63.999(c)(6)(i) § 63.999(c)(6)(iv)
VNTPE3-11B	EU	60DDD-1	VOC/TOC	40 CFR Part 60, Subpart DDD	§ 63.2535(h)	For equipment subject to 40 CFR Part 63, Subpart FFFF that is also subject to 40 CFR Part 60, Subpart DDD,	§ 63.2535(h)	§ 63.2535(h)	§ 63.2535(h)

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)
						the permit holder may elect to apply 40 CFR Part 63, Subpart FFFF to all such equipment. Compliance as described in §63.2535(h) will constitute compliance with 40 CFR Part 60, Subpart DDD.			
VNTPE3-11B	EU	63FFFF-2	112(B) HAPS	40 CFR Part 63, Subpart FFFF	§ 63.2455(a)-Table 1.1.a.i § 63.2450(b) [G]§ 63.2450(e)(6) § 63.2450(i)(1) § 63.2450(i)(2) § 63.2455(a) § 63.2455(b) § 63.2455(b)(1) § 63.982(c) § 63.982(c)(2) § 63.983(a)(1) § 63.983(a)(2) § 63.983(d)(1) § 63.983(d)(1)(i) [G]§ 63.983(d)(2) § 63.983(d)(3) § 63.988(a)(1) § 63.988(a)(2) § 63.996(c)(1) § 63.996(c)(2) § 63.996(c)(2)(i) § 63.996(c)(3) § 63.996(c)(4) § 63.996(c)(5) § 63.996(c)(6) [G]§ 63.997(c)(1) § 63.997(c)(3) [G]§ 63.997(d)	For each Group 1 continuous process vent, the owner or operator must reduce emissions to an outlet process concentration less than or equal to 20 ppmv as organic HAP or TOC by venting emissions through a closed-vent system to any combination of control devices (except flare).	[G]§ 63.115(d)(2)(v) § 63.115(d)(3)(iii) [G]§ 63.2450(e)(6) § 63.2450(g) § 63.2450(g)(1) § 63.2450(g)(2) [G]§ 63.2450(g)(3) § 63.2450(g)(4) § 63.2450(k)(6) § 63.983(b) [G]§ 63.983(b)(1) [G]§ 63.983(b)(2) [G]§ 63.983(b)(3) [G]§ 63.983(c)(1) § 63.983(c)(2) § 63.983(c)(3) § 63.983(d)(1) § 63.983(d)(1)(ii) § 63.988(b)(1) § 63.988(c)(1) § 63.996(b)(1) § 63.996(b)(1)(i) § 63.996(b)(2) § 63.997(a) [G]§ 63.997(c)(1) § 63.997(c)(2) § 63.997(c)(3) § 63.997(c)(3)(iii) [G]§ 63.997(d) § 63.997(e) § 63.997(e)(1)(i)	§ 63.2450(k)(6) § 63.2525(g) § 63.2525(h) § 63.2525(n) § 63.983(b) [G]§ 63.983(d)(2) § 63.988(b)(1) § 63.996(c)(2)(ii) § 63.998(a)(2)(i) § 63.998(a)(2)(ii)(A) § 63.998(a)(2)(ii)(B)(1) § 63.998(a)(2)(ii)(B)(4) [G]§ 63.998(b)(1) [G]§ 63.998(b)(2) [G]§ 63.998(b)(3) [G]§ 63.998(b)(5) [G]§ 63.998(c)(1) § 63.998(c)(2)(iii) § 63.998(c)(3)(iii) [G]§ 63.998(d)(1) § 63.998(d)(3)(i) § 63.998(d)(3)(ii) § 63.998(d)(5)	§ 63.2450(q) § 63.2520(a)-Table 11.1 § 63.2520(a)-Table 11.2 § 63.2520(a)-Table 11.3 § 63.2520(e)(12) § 63.988(b)(1) § 63.996(b)(2) § 63.996(c)(6) § 63.997(c)(3) § 63.998(a)(2)(ii)(A) [G]§ 63.998(b)(3) [G]§ 63.999(a)(1) [G]§ 63.999(a)(2) [G]§ 63.999(b)(3) § 63.999(b)(5) § 63.999(c)(1) § 63.999(c)(2)(i) § 63.999(c)(6) [G]§ 63.999(c)(6)(i) § 63.999(c)(6)(iv)

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]§ 63.997(e)(1)(iv) [G]§ 63.997(e)(1)(v) § 63.997(e)(2) § 63.997(e)(2)(i) § 63.997(e)(2)(i)(B) § 63.997(e)(2)(ii) § 63.997(e)(2)(iii) § 63.997(e)(2)(iii)(A) [G]§ 63.997(e)(2)(iii)(B) [G]§ 63.997(e)(2)(iii)(C) [G]§ 63.997(e)(2)(iii)(D) [G]§ 63.997(e)(2)(iii)(E)		

Additional Monitoring Requirements

Periodic Monitoring Summary

Unit/Group/Process Information	
ID No.: PE3-12	
Control Device ID No.: N/A	Control Device Type: N/A
Applicable Regulatory Requirement	
Name: 30 TAC Chapter 111, Visible Emissions	SOP Index No.: R1111-2
Pollutant: Opacity	Main Standard: § 111.111(a)(1)(C)
Monitoring Information	
Indicator: Visible Emissions	
Minimum Frequency: Once per year	
Averaging Period: N/A	
Deviation Limit: Opacity shall not exceed 15% averaged over a six-minute period for any source having a total flow rate greater than or equal to 100,000 acfm.	
Periodic Monitoring Text: Visible emissions observations shall be made and recorded. Note that to properly determine the presence of visible emissions, all sources must be in clear view of the observer. The observer shall be at least 15 feet, but not more than 0.25 miles, away from the emission source during the observation. The observer shall select a position where the sun is not directly in the observer's eyes. If the observations cannot be conducted due to weather conditions, the date, time, and specific weather conditions shall be recorded. 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. If visible emissions are observed, the permit holder shall report a deviation. As an alternative, the permit holder may determine the opacity consistent with Test Method 9, as soon as practicable, but no later than 24 hours after observing visible emissions. If the result of the Test Method 9 is opacity above the opacity limit in the applicable requirement, the permit holder shall report a deviation.	

Permit Shield

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
GRP-VENT	PE3-01, PE3-02A, PE3-02B, PE3-03, PE3-04, PE3-05, PE3-06, PE3-07, PE3-08A, PE3-08B, PE3-14	30 TAC Chapter 115, Vent Gas Controls	Jackson county is not a listed county in 30 TAC 115.122 control requirements for vent gas control. Jackson county is not subject to vent gas control requirements for VOC.
PE3 HTXCHG	N/A	40 CFR Part 63, Subpart FFFF	Heat exchange systems (cooling water system) are not in organic HAP service, as defined in § 63.2550, as they are used to cool process fluids that contain less than 5 percent by weight of total organic HAP.
PE3 WSTWTR	N/A	40 CFR Part 63, Subpart FFFF	Wastewater stream do not meet the definition of wastewater per §63.2550(i) because concentrations of Tables 8 & 9 compounds are below listed concentration.
PE3-10	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson county is not a listed county in 30 TAC 115.122 control requirements for vent gas control. Jackson county is not subject to vent gas control requirements for VOC.
PE3-11A	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson county is not a listed county in 30 TAC 115.122 control requirements for vent gas controls. Jackson county is not subject to vent gas controls requirements for VOC.
PE3-11B	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson county is not a listed county in 30 TAC 115.122 control requirements for vent gas controls. Jackson county is not subject to vent gas controls requirements for VOC.
PE3-15	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson County is not a listed county in 30 TAC 115.122 control requirements for vent gas control. Jackson County is not subject to vent gas control requirements for VOC.

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
PE3-SVD	N/A	40 CFR Part 63, Subpart FFFF	Storage vessel degassing requirements do not apply because there are no Group 1 storage tanks, as defined in § 63.2550 and specified in MON Table 4 Item 1.
VENTPE3-10	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson County is not a listed county in 30 TAC 115.122 control requirements for vent gas control. Jackson County is not subject to vent gas control requirements for VOC.
VENTPE3-15	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson County is not a listed county in 30 TAC 115.122 control requirements for vent gas control. Jackson County is not subject to vent gas control requirements for VOC.
VNTHEX-02	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson County is not a listed county in 30 TAC 115.122 control requirements for vent gas control. Jackson County is not subject to vent gas control requirements for VOC.
VNTPE3-11A	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson county is not a listed county in 30 TAC 115.122 control requirements for vent gas controls. Jackson county is not subject to vent gas controls requirements for VOC.
VNTPE3-11B	N/A	30 TAC Chapter 115, Vent Gas Controls	Jackson county is not a listed county in 30 TAC 115.122 control requirements for vent gas controls. Jackson county is not subject to vent gas controls requirements for VOC.

New Source Review Authorization References

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.: PSDTX1588M1	Issuance Date: 09/22/2023
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.: 127838	Issuance Date: 09/22/2023
Authorization No.: 172616	Issuance Date: 05/18/2023

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**
PE3 HTXCHG	HEAT EXCHANGE SYSTEMS (COOLING WATER SYSTEM)	127838, PSDTX1588M1
PE3 UNIT	MCPU PE3 PROCESS	127838, PSDTX1588M1
PE3 WSTWTR	MCPU WASTEWATER	127838, PSDTX1588M1
PE3-01	DRY CATALYST FILTER	127838, PSDTX1588M1
PE3-02A	ELUTRIATOR CYCLONE A	127838, PSDTX1588M1
PE3-02B	ELUTRIATOR CYCLONE B	127838, PSDTX1588M1
PE3-03	POWDER SURGE HOPPER FILTER	127838, PSDTX1588M1
PE3-04	POWDER FEEDER FILTER	127838, PSDTX1588M1
PE3-05	ADDITIVE HOPPER FILTER	127838, PSDTX1588M1
PE3-06	ADDITIVE FEEDER FILTER	127838, PSDTX1588M1
PE3-07	PELLET DRYER CYCLONE	127838, PSDTX1588M1
PE3-08A	PRODUCT SILO A FILTER	127838, PSDTX1588M1
PE3-08B	PRODUCT SILO B FILTER	127838, PSDTX1588M1
PE3-10	FLARE	127838, PSDTX1588M1
PE3-11A	THERMAL OXIDIZER A	127838, PSDTX1588M1
PE3-11B	THERMAL OXIDIZER B	127838, PSDTX1588M1
PE3-12	COOLING TOWER	127838, PSDTX1588M1
PE3-13	FUGITIVES	127838, PSDTX1588M1
PE3-14	EXTRUDER FEED HOPPER FILTER	127838, PSDTX1588M1
PE3-15	ENCLOSED GROUND FLARE	127838, PSDTX1588M1
PE3-SVD	STORAGE VESSEL DEGASSING (SVD) REQUIREMENTS	127838, PSDTX1588M1

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**
VENTPE3-10	VENT TO FLARE	127838, PSDTX1588M1
VENTPE3-15	VENT TO ENCLOSED GROUND FLARE	127838, PSDTX1588M1
VNTHEX-02	VENT TO HEXENE PLANT THERMAL OXIDIZER	127838, PSDTX1588M1
VNTPE3-11A	VENT TO THERMAL OXIDIZER A	127838, PSDTX1588M1
VNTPE3-11B	VENT TO THERMAL OXIDIZER B	127838, PSDTX1588M1

Alternative Requirement

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

December 14, 2016

MR RICK CRABTREE
ASSISTANT GENERAL MANAGER
FORMOSA PLASTICS CORPORATION TEXAS
PO BOX 700
POINT COMFORT TX 77978-0700

Re: Alternative Method of Compliance (AMOC) No. 66
Alternative Monitoring For Cooling Towers
Formosa Point Comfort Plant
Regulated Entity Number: RN100218973
Customer Reference Number: CN600130017
Associated Permit Numbers: 7699, 19166, 19167, 19168, 19198, 19199, 19200, 19201, 20203, 40157, 76044, 76305, 91780, 107518, 107520, 127838, 128752, HAP10, PSDTX1053, PSDTX1058, PSDTX1222, PSDTX1224, PSDTX1226, PSDTX1232, PSDTX1234, PSDTX1237, PSDTX1238, PSDTX1240, PSDTX1383, PSDTX1384, PSDTX226M7, PSDTX760M9, O1484, O1951, O1953, O1954, O1956, O1957, O1958, O3409, and O3421

Dear Mr. Crabtree:

This correspondence is in response to Formosa Plastics Corporation, Texas's (Formosa's) request for Alternative Monitoring for all cooling towers (CT) at the Formosa Point Comfort Plant. The AMOC is used to comply with requirements for sampling and analysis of VOCs in cooling tower feed water and makeup water.

We understand that Formosa is requesting **clarification and confirmation of the alternative VOC sampling procedure for all authorized CT at the site installed on similar product processes (see Attachment 1). This alternative method was previously approved for Formosa on** December 2, 1992, January 11, 1996, and August 1997.

The alternative VOC sampling (referenced in historical correspondence as FPC TX VOC IN WATER AND WASTEWATER) is equivalent to Test Method 8020A. The method is detailed in Attachment 2 and should provide representative concentrations of non-methane hydrocarbons to comply with the above-referenced permits. This alternative method does not apply to any requirements that may in 40 Code of Federal Regulations Part 60, New Source Performance Standards (NSPS), 40 Code of Federal Regulations Part 61, National Emission Standards for Hazardous Air Pollutants (NESHAP), or 40 Code of Federal Regulations Part 63, Maximum Achievable Control Technology (MACT) Standards for Hazardous Air Pollutants.

Re: AMOC #66

The Texas Commission on Environmental Quality (TCEQ) Executive Director has made a final decision to approve your AMOC request. You are reminded that approval of any AMOC shall not abrogate the Executive Director or Administrator's authority under the Act or in any way prohibit later canceling the AMOC.

This AMOC approval may supersede certain requirements or representations in Permit Nos. 7699, 19166, 19167, 19168, 19198, 19199, 19200, 19201, 20203, 40157, 76044, 76305, 91780, 107518, 107520, 127838, 128752, HAP10, PSDTX1053, PSDTX1058, PSDTX1222, PSDTX1224, PSDTX1226, PSDTX1232, PSDTX1234, PSDTX1237, PSDTX1238, PSDTX1240, PSDTX1383, PSDTX1384, PSDTX226M7, and PSDTX760M9. To ensure effective and consistent enforceability, we request that Formosa incorporate this AMOC into the permit(s) through submittal of alteration(s) no later than 90 days after this approval, if not already included.

This approval may also change applicable requirements for the site, which are identified in the site operating permits (SOP) O1484, O1951, O1953, O1954, O1956, O1957, O1958, O3409, and O3421. The TCEQ recommends the submittal of a SOP administrative revision if any changes are necessary. Changes meeting the criteria for an administrative revision can be operated before issuance of the revision if a complete application is submitted to the TCEQ and this information is maintained with the SOP records at the site.

If you need further information or have any questions, please contact Ms. Anne Inman, P.E. at (512) 239-1276 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Michael Wilson, P.E., Director
Air Permits Division
Office of Air
Texas Commission on Environmental Quality

cc: Air Permits Section Chief, New Source Review Section (6PD-R), U.S. Environmental Protection Agency, Region 6, Dallas

Project Number: 255806

bcc: Air Section Manager, Region 14 - Corpus Christi
Rebecca Partee, Manager, Chemical Section, Air Permits Division, OA: MC-163

Attachment 1 – Summary of Cooling Towers and Authorizations				
Permit Nos.	**Type of Process**	**Plant**	**EPNs**	**Previous Approval**
19166, HAP10, PSDTX760M9, O1951	Inorganic	Utilities Plant	Not identified on MAERT	12/2/1992
19167, O1953	Inorganic	Caustic Chlorine Plant	Not identified on MAERT (shares with EDC-CT)	1/11/1996
76044, PSDTX1053, O3421	Inorganic	Pet Coke / Coal Fired Generation	CT-1 through CT-12	N/A
19168, PSDTX1226, O1958	Organic Olefins	Olefins I Olefins II GHU PPU FRACII	1010 1064 8801U FRACII-CT	N/A
107518, PSDTX1383 SOP PENDING	Organic Olefins	Olefins III PDH	OL3-CTWR PDH-CWTR	N/A
19201, PSDTX1232 O1957	Organic Polyolefins	HDPE I	PO-CT	1/11/1996
40157, PSDTX1222 O1957	Organic Polyolefins	HDPE II	PP2-CT	N/A
20203, PSDTX1224 O1957	Organic Polyolefins	LLDPE	LL-CT	12/2/1992
107520, PSDTX1384 SOP PENDING	Organic Polyolefins	LDPE	LD-CT	N/A
19200, PSDTX1237, O1956	Organic Polyolefins	Polypropylene I Plant (PP I)	PO-CT PP1-CT	1/11/1996
91780, PSDTX1240 O1956	Organic Polyolefins	PP II	PP20CT	N/A
127838 SOP PENDING	Organic Polyolefins	HDPE 3	PE3-12	N/A
19199, PSDTX1238 O1953	Organic Other	Ethylene Dichloride (EDC)	2C-C1 2C-C2 EDC-CT	
7699, PSDTX226M7 O1954	Organic Other	EDC Cracking, VCM, PVC	999 VW-C02 VW-C11	12/2/1992
19198, PSDTX1234 O1484	Organic Other	Ethylene Glycol (EG)	EG-CT	8/1997
128752 SOP PENDING	Organic Other	EG 2	EG2-CT	N/A
76305, PSDTX1058 O3409	Organic Other	Specialty PVC	CT-01	N/A

Mr. Wilson
June 11, 2015

Attachment 2

VOC in Water and Wastewater by TACB-VOC Method Procedure

LABORATORY STANDARD OPERATING PROCEDURES

VOC IN WATER AND WASTEWATER BY TACB-VOC METHOD

Revision Number 5

1.0 PURPOSE *

In an effort to maintain Quality, Efficiency, Safety, and Environmental Responsibility, this procedure has been developed for L.S. & Q.A. Department Operation.

2.0 SCOPE *

This method is for the analysis of water and wastewater samples containing volatile organic compounds (VOC) and non-methane hydrocarbons (NMHC). It is intended for analyzing treated and un-treated water and wastewater streams permitted in FPC expansion complex.
This method can be used to quantitate volatile organic compounds that have boiling points less than 200°C and are insoluble or slightly soluble in water.

3.0 ORGANIZATIONS AFFECTED

This procedure affects operation within the L.S. & Q.A. Department and any other department that may request this analysis.

4.0 RESPONSIBILITIES

Personnel	Responsibility
Management/Supervision	Responsible for development and implementation of the procedure, training material, and training of subordinates
QA/QC	Responsible for auditing the performance of the procedure.
Lab Technician	Responsible for knowing and performing analysis per procedure.

5.0 DEFINITIONS

VOC — *Volatile Organic Compounds (VOC)* are organic compounds that have boiling points approximately less than 200°C.

6.0 KEY POINTS

Not applicable.

7.0 POLICIES *

This procedure has been developed to insure adherence to FPC Quality, Environmental, Health, and Safety Policies, FPC Corporate Total Quality Management Policies, L.S. & Q.A. Department Quality Management Plan and L.S. & Q.A. Department Quality Assurance Project Plan.

8.0 GUIDELINES

Summary

Volatile organic compounds (VOC) are extracted from sample by purge and trap techniques. Stripped sample components are swept to the gas chromatograph inlet where the individual components are detected using a flame ionization detector. The resultant peaks are summed and quantitated against external calibration curve constructed using benzene as a standard.

GC FID

Interferences

Major contaminate peaks are volatile materials in the laboratory and impurities in the inert purging or carrier gas. A trip blank prepared from organic-free reagent water and carried through the sampling and handling protocol can serve as a check for any possible contamination of sample.

Safety Considerations

The use of proper gloves, safety glasses, and PRC should be exercised when using reagents. Exercise caution when working with glassware. Wipe any spills, clean area immediately and dispose of properly. Avoid skin or eye contact, inhalation or ingestion. Do not operate instrument without all protective equipment in place.

Sample Collection and Storage

- Water sample are collected in 40mL vial with a Teflon-lined septum and an open top screw-cap. Two vials per sampling event must be collected at a minimum per sample point. The containers must be filled in such manner that no air bubbles pass through the sample as the container is being filled. Should bubbling occur, the sample must be poured out and the vial refilled. Seal the vial so that no air bubbles are entrapped in it.
- Due to differing solubility and diffusion properties of gases in liquid matrices at different temperatures, it is possible for the sample to generate some headspace during storage. This headspace will appear in the form of micro-bubbles, and should not invalidate a sample for volatile analysis.
- The presence of a macro-bubble , generally indicates either improper sampling technique or a source of gas evolution within the sample, Studies conducted by the USEPA (EMSL-Ci, unpublished data) indicate that "pea-sized" bubbles (i.e. diameter < ¼ in.) did not adversely affect volatiles data. These bubbles were generally encountered in wastewater samples, which are more susceptible to variations in gas solubility than are groundwater samples.

LABORATORY STANDARD OPERATING PROCEDURES

VOC IN WATER AND WASTEWATER BY TACB-VOC METHOD

Sample Collection, Preservation, Containers, and Holding Times

Container❶	Minimum Sample Size (mL)	Sample Type❷	Preservation❸	Maximum Storage; Recommended/Regulatory❹
G-TLC	40	G,C	Refrigerated at 4°C	7 days

❶ G-TLC = glass with Teflon-lined cap.
❷ G = grab; C = composite.
❸ Refrigerate = Storage at 4°C, in the dark
❹ Reference 4

Apparatus and Equipment

1. Gas Chromatograph/Detector/Data System
   a. Gas Chromatograph - Agilent model 6890 or model 5890 (as back up)
   b. The GC must be equipped with a Agilent flame ionization detector (FID) or equivalent
   c. The recommended data system is a Agilent Chemstation (or equivalent)
   d. The GC column used for this determination is a J&W DB-5 column. The dimensions of the column are 30 m x 0.53 mm ID x 1.50 um film thickness.

2. Purge-and-Trap - An OI Analytical 4560 purge-and-trap or equivalent is recommended. The trap will be constructed of stainless tubing and filled with 2,6-diphenylene oxide polymer (Tenax GC or equivalent), methyl silicon packing, silica gel, and coconut charcoal. Alternatively, hydrophobic carbon molecular sieve and graphitized carbon black materials may be substituted if equivalent or increased method sensitivity can be demonstrated.
   An OI 4551A autosampler is configured to the purge-and-trap to allow for automated analysis.

4. Gas-Tight Microsyringes; 10, 25, 100, 250, 1000 uL sizes

5. 40 mL VOA (volatile organic analysis) vials with Teflon faced septa

Reagents

1. Organic-free reagent water (18.2 ohm-cm Millipore water)
2. Certified 2.0 mg/ml benzene standard in methanol solvent for initial calibration verification. Accustandard stock number M502-01-10X
3. Methanol, Pesticide quality or equivalent
4. Certified 1.0 mg/ml Benzene Standard in methanol solvent for calibration. Accustandard stock number AS-E0004

QC Requirements

QC	DESCRIPTION	FREQUENCY	CRITERIA	CORRECTIVE ACTION
MB	Method blank; Organic-free reagent water	1/10 sample	< 20 ppb Which is the amount of the lowest std.	Investigate system contamination; correct the problem and reanalyze the samples.
ICV	Initial Calibration verification. Benzene: 100 ppb.	1/10 sample	20% deviation from actual value. (80 ppb-120 ppb)	Check instrument malfunction. Correct the instrument problem and reanalyze. Perform initial calibration after the third failure.

Calculations

Deviation(%)

$$D = \frac{|X - T|}{T} \times 100$$

Where, D = percent deviation
X = the observed value for the measurement
T = "actual" value for the measurement

Precision and Accuracy

None

Reporting

1. Analytical reporting limit is 20 ppb (ug/L).
2. All verified results must be entered in LIMS and/or the appropriate non-routine log sheet upon completion.
3. For the purpose of reporting to applicable agencies, preliminary results from LIMS may be used to prevent greater than 48hr delay in reporting time.

9.0 PROCEDURES*

9.1 *Standard Preparation*

9.1.2 Calibration Standards

Fill 40 mL VOA vials with reagent water, taking care not to trap any air in the vial. Add the Calibration Standard (AS-B0004) to the vial using a clean microsyringe heating on following list to prepare the calibration standards:

	Stock solution
Blank	0.0 uL
20 ppb	0.8 uL
50 ppb	2.0 uL
100 ppb	4.0 uL
250 ppb	10.0 uL
500 ppb	20.0 uL
1000 ppb	40.0 uL

9.1.3 Initial Calibration Verification Standard: Upon opening the certified benzene standard (e.g. M502-01-10X), transfer to a 1 mL reaction vial and cap with a syringe valve. This standard may be good up to 6 months, but should be replaced if ICV fails. Fill a 40 mL VOA vial with Reagent water, taking care not to trap any air in the vial. Add 2.0 uL to the vial using a clean microsyringe for a 100 ppb std.

9.1.4 All standard preparation activities must be logged in the standards logbook.

9.2 *Instrument Setup*

9.2.1 GC/FID is configured as follows:

Inlet

Mode: split	Gas: Helium
Heater:	250 °C
Pressure:	6.9 psi
Total Flow:	102 mL/min
Split ratio:	9:1
Split Flow:	90 mL/min

Column

Mode:	Const Pressure
Pressure:	6.9 psi
Flow:	10.0 mL/min
Average Velocity:	66 cm/sec.

Oven:
Setpoint: 50 °C

Oven Maximum: 300 °C
Equilibration: 0.5 min

Oven Ramp	°C/min	Next °C	Hold min	Run time
Initial		50	2.00	2.00
Ramp 1	20.00	250	9.00	16.00
Post Run		50	0	16.00

Detector:

Heater:	280 °C
H2 flow	40.0 mL/min
Air Flow	450 ml/min
Makeup Flow (He):	25.0 mL/min
Flame:	On

9.2.2 Purge-and-Trap (OI 4560):

Purge flow	35 mL/min
Purge	11 min at 25 °C
Desorb	2 min at 180 °C
Bake	10 min at 185 °C
Transfer line	100 °C
Valve	100 °C
Sample size	5 mL
Drypurge	1 min

9.3 ***Re- Calibration***

9.3.1 Recalibration is recommended once a year or when new ICV fails 20% recovery. Prior to re-calibration, GC and sampler must be baked out. Raise the GC oven temp to 250°C and bake for at least 30 min. It is also necessary to cycle the purge-and-trap through one bake cycle to ensure that there are no contaminates present in the trap. After 30 min lower GC temp to 50°C.

9.3.2 Prepare the calibration standards as outlined in 9.1.2 just prior to analysis. Load the standard vials in the correct slots of the autosampler and prepare following re-calibration sequence in the **Method and Run control window** of the Chemstation Software. Start the sequence by following steps from 9.4.4 to 9.4.9.

Re-calibration sequence:

Line	Vial	Sample Name	Method Name	Inj/Vial	Sample Type	Cal Level	Update RF	Update RT
1	1	MB (Blank)	TACB-VOC	1	Sample			
2	1	20 ppb	TACB-VOC	1	Calibration	1	Replace	No Update
3	1	50 ppb	TACB-VOC	1	Calibration	2	Replace	No Update
4	1	100 ppb	TACB-VOC	1	Calibration	3	Replace	Replace
5	1	250 ppb	TACB-VOC	1	Calibration	4	Replace	No Update
6	1	500 ppb	TACB-VOC	1	Calibration	5	Replace	No Update
6	1	1000 ppb	TACB-VOC	1	Calibration	6	Replace	No Update

9.3.3 In the **data analysis window** of the Chemstation Software, load the chromatogram for the blank (reagent water). Check to see that there are no contamination peaks. For some low level analysis, a small peak will show at the beginning of the run. This is due to a pressure change on column when the sampler injects. If a calibration exists, the run should read less than two times the lower analytical limit for the analysis.

9.3.4 Open the calibration file and check to see that there are only two significant peaks. The first peak will be the solvent or methanol peak. The peaks should be sharp with minimum tailing. If there are more than two peaks, the calibration stock or reagent water is contaminated. Correct this condition and begin the calibration again.

9.3.5 Once the calibration files are integrated, the results must be assembled in a linear calibration curve. Display the calibration curve and check that the fit is at least $R^2 > 0.990$. Calculate a new area reject from the Calibration curve plot "AREA= number value x amount + 0" (the number value is the slope of the calibration curve. The amount is 20). Enter this new area into the integration events table in the value line for area reject.

9.3.6 Calibration should be set to calculate uncalibrated peaks using compound benzene. The parameters should sum all the individual peak areas of chromatogram.

9.4 *Sample Analysis*

9.4.1 *Composite Sample*: A volumetric composite is performed by combining the chilled (4°C) samples collected during a weeklong sampling event in a chilled jar that is surrounded by ice. This must be performed quickly to prevent loss of volatile component. The sample is mixed and transferred to 40mL VOA.

Note: The volumetric composite may not reflect the true emissions over a week long period due to fluctuations in flow rate of the stream to be tested.

9.4.2 For grab samples, directly use the vial that the sample was received in.

9.4.3 Load the samples in the autosampler racks noting their positions.

9.4.4 Bring up the window **P & T 6890C (online): Method & Run control** by Click **Start / Program/HP Chemstation /instrument online** if it is not opened on the computer monitor.

9.4.5 Click **Sequence/Load Sequence** to load an existing sequence.

9.4.6 Click **Sequence/Sequence Parameter** to change the **Subdirectory** to today's date.

9.4.7 Click **Sequence/Sequence Table** to edit the sequence at the data station.
Enter the sample information in a sequence file located in the data station. Be sure that the vial positions correspond with vial locations and the correct method is chosen for the analysis

Following sequence table is an example:

Line	Vial	Sample Name	Method Name	Inj/Vial	Sample Type
1	1	MB(Blank)	TACB-VOC	1	Sample
2	1	ICV	TACB-VOC	1	Sample
3	1	OL1 CWR 2/5	TACB-VOC	1	Sample
4	1	OL1 CWR 2/5	TACB-VOC	1	Sample
5	1	OL2 CWR 2/08	TACB-VOC	1	Sample
6	1	OL2 CWR 2/08	TACB-VOC	1	Sample
7	1	OHU CWR 2/5	TACB-VOC	1	Sample
8	1	OHU CWR 2/5	TACB-VOC	1	Sample
9	1	T971 2/1-2/7	TACB-VOC	1	Sample
10	1	3T971 2/1-2/7	TACB-VOC	1	Sample
11	1	CWTP 2/1-2/7	TACB-VOC	1	Sample
12	1	LLDPE CWR 2/5	TACB-VOC	1	Sample
13	1	MB	TACB-VOC	1	Sample
14	1	ICV	TACB-VOC	1	Sample
15	1	Sample A	TACB-VOC	1	Sample
16	1	Sample B	TACB-VOC	1	Sample

Note: Method blank and calibration verification need be run every 10 samples.

9.4.8 Press **Run Sequence** button. Now system is ready and waiting for Purge-and-trap device to start.

9.4.9 Purge-and-trap device preparation:
(1) Push **SPL** Button on the front panel, the window will show: **L551 start: end:**
(2) Set the start and end positions that need match with actual sample position and run sequence, use **Arrow ON** button and **OFF** button to switch between start and end, then use keypad to key in position number.

(3) Press Enter key, then press Clear button, then press Start button to run the sequence.

9.4.10 Once data have been generated, check that the chromatograms have been integrated correctly. Samples that are 10 % out of the analytical range for the determination must be diluted and re-analyzed using the appropriate methodology (See table 1).

10.0 TRAINING REQUIREMENTS *

Personnel who perform this analysis will be required to complete the following training requirements:

Period	Requirement
Initial	SOP Training, Test, and Job Qualification
Annual Refresher and Procedure Revision	SOP Training and Test
Audit Finding	SOP Training, Test, and Job Qualification

11.0 FLOWCHART

Not applicable

12.0 REFERENCES

1. "Guidelines for preparation of Policies, Guidelines, and Procedures," PPC TQM Manual.
2. Test Method for Evaluating Solid Waste (SW-846), "Determinative Chromatographic Separations," Revision 3, March 2003, Method 8000C.
3. Test Method for Evaluating Solid Waste (SW-846), "purge and Trap for Aqueous Samples," Revision 3, May 2003, Method 5030C.
4. Test Method for Evaluating Solid Waste (SW-846), "Organic Analytes," Revision 4, February 2007, Chapter Four - Section I. (for sample storage)

13.0 RECORD RETENTION PERIOD

Records produced using this procedure will be retained for a period of no less than 5 years.

14.0 ATTACHMENTS

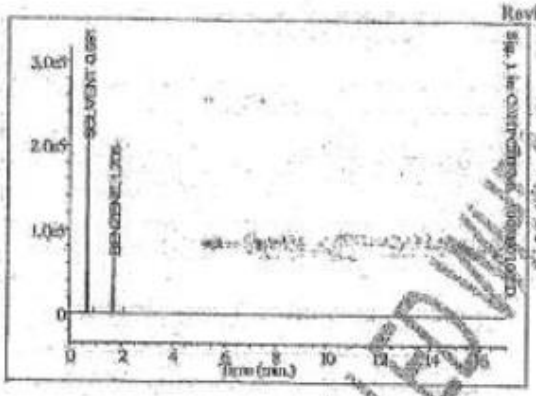
Table 1:
Figure 1: Chromatogram of Calibration Standard and sample run
Attachment 1: TNRCC Approval Letter.

TABLE 1. Examples of sample dilution

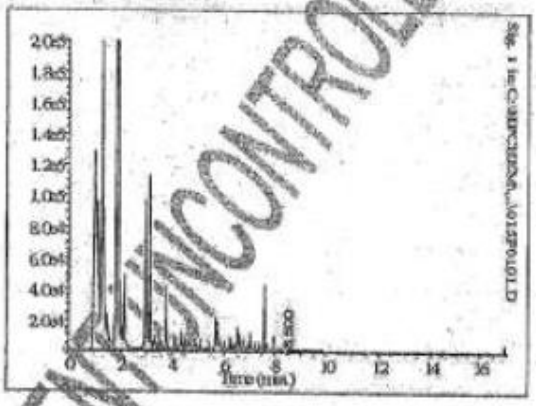
Add the required amount of high concentration sample to a 50 mL volumetric flask, and then bring level to exact 50 mL with organic-free reagent water.

Dilution factor	High concentration sample	Total volume
30000	1.67 µL	50 mL
20000	2.5 µL	50 mL
10000	5 µL	50 mL
5000	10 µL	50 mL
4000	12.5 µL	50 mL
3000	16.7 µL	50 mL
2000	25 µL	50 mL
1000	50 µL	50 mL
500	100 µL	50 mL
400	125 µL	50 mL
300	167 µL	50 mL
200	250 µL	50 mL
100	500 µL	50 mL
90	556 µL	50 mL
80	625 µL	50 mL
70	714 µL	50 mL
60	833 µL	50 mL
50	1 ml	50 mL
40	1.25 mL	50 mL
30	1.67 mL	50 mL
20	2.5 mL	50 mL
10	5 mL	50 mL
5	10 mL	50 mL
2	25 mL	50 mL

Figure 1: Sample Chromatogram
Calibration Standard Run



Sample Run



Attachment 1: TNRCC Approval Letter

The next page is a copy of the approval letter from the TNRCC.

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

January 11, 1996

Mr. Matt Brittian
Technical Department
Formosa Plastics Corporation
Post Office Box 700
201 Formosa Drive
Point Comfort, Texas 77978

RE: Revisions to the Testing Techniques for Sampling Wastewater and Polyolefin Powder Required by the Texas Natural Resource Conservation Commission (TNRCC)
Permit Nos.: 19167, 19168, 19198, 19199, 19200, 19201, 20209
PSD-TX Permit No. 760M3

Dear Mr. Brittian:

This is in response to your letter dated November 7, 1995, which was related to the proposed procedures for analyzing the volatile organic compound (VOC) content in wastewater and polyolefin powder.

On June 6, 1995, Formosa Plastics, Corporation (Formosa) proposed revisions to a TNRCC approved procedure for analyzing the VOC content in wastewater and polyolefin powder. In a letter dated August 29, 1995, the TNRCC stated multiple concerns related to the proposed analytical revisions. These concerns centered around the operational parameters of the gas chromatograph which was proposed for the required analysis. In the letter dated November 7, 1995, Formosa supplied additional information and comments addressing these issues. After reviewing the information, the TNRCC has determined that Formosa Plastics adequately addressed the concerns and hereby accepts the proposed VOC sampling and analysis plan as written.

If you have questions, please contact me at (512) 239-1740.

Sincerely,

Terry L. Blodgett
Case Team, Engineering Services Section
Enforcement Division

cc: Mr. Charlie Spieckerman, Regional Air Program Manager, Corpus Christi

P.O. Box 13087 • Austin, Texas 78711-3087 • 512/239-1000

TEXAS AIR CONTROL BOARD

12124 PARK 35 CIRCLE, AUSTIN, TEXAS 78753 / 512/908-1000

WILLIAM N. CAMPBELL
EXECUTIVE DIRECTOR

December 2, 1992

Mr. John T. Hyak
Environmental Department
Formosa Plastics Corporation, Texas
P.O. Box 700
201 Formosa Drive
Point Comfort, Texas 77978

RE: Sampling Procedures for Determination of Volatile Organic Compounds (VOC) in Polyolefin Powder/Pellets, Process Wastewater, and Cooling Tower Water Supplemental Measurement Procedure for Continuous Emission Monitoring Systems (CEMS) Failures Under Texas Air Control Board (TACB) Permits 19166, 19199, and 20203.

Dear Mr. Hyak:

Your letter dated November 2, 1992, in which you requested a review of the sampling methods and supplemental measurements listed above, has been given to me for review and reply.

The method proposed for determining VOC content in polyolefin powder and pellets parallels the "Beverage Can Method" that is currently accepted for use in Texas. There are several minor substitutions in analytical equipment but, after reviewing these substitutions with Mr. Jim Lindgren of the TACB Organic Analysis Laboratory, it was determined that the substitutions should not have a significant bias on the reported data.

The method proposed for determining VOC content in cooling tower water parallels the U. S. Environmental Protection Agency Method 8020A. After comparing the two methods, there were no major deviations identified that would significantly bias the reported data.

In a letter dated October 1, 1992, addressed to Matt Brittain of your staff, I requested several procedure modifications to the supplemental measurement procedure for CEMS failures. After reviewing the revised procedures submitted by Mr. Brittain, I find the revised procedures to be acceptable as written.

Texans working for clean air

Mr. John T. Hyak -2- December 2, 1992

As long as these methods are performed correctly, they should produce reliable and accurate data. Permission is hereby granted to use these methods as proposed. The TACB reserves the right to direct Formosa Plastics Corporation, Texas to revise and/or change any or all of these methods if the TACB deems necessary. There are new, more reliable methods and advances in technology constantly being developed, and these methods may, someday, become obsolete in comparison.

Sincerely,

Terry L. Blodgett, Engineering Assistant
Source Review Section
Source and Mobile Monitoring Division

cc: Mr. Matt Brittain, Technical Department, Formosa Plastic Corporation, Texas
Mr. Jim Lindgren, Chief, Organic Analysis Laboratory

Appendix A

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
CEMS ..... continuous emissions monitoring system
CFR ..... Code of Federal Regulations
COMS ..... continuous opacity monitoring system
CVS ..... closed vent system
D/FW ..... Dallas/Fort Worth (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
gr/100 scf ..... grains per 100 standard cubic feet
HAP ..... hazardous air pollutant
H/G/B ..... Houston/Galveston/Brazoria (nonattainment area)
H_2S ..... hydrogen sulfide
ID No. ..... identification number
lb/hr ..... pound(s) per hour
MACT ..... Maximum Achievable Control Technology (40 CFR Part 63)
MMBtu/hr ..... Million British thermal units per hour
NA ..... nonattainment
N/A ..... not applicable
NADB ..... National Allowance Data Base
NESHAP ..... National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)
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
PEMS ..... predictive emissions monitoring system
PM ..... particulate matter
ppmv ..... parts per million by volume
PRO ..... process unit
PSD ..... prevention of significant deterioration
psia ..... pounds per square inch absolute
SIP ..... state implementation plan
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

Permit Numbers: 127838 and PSDTX1588M1					Issuance Date: September 22, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Cond/Application Information	Special Condition/Application Information
PE3-01	Dry Catalyst Filter	PM	<0.01	<0.01	7, 24	7, 24, 30, 34	7
		PM_{10}	<0.01	<0.01			
		$PM_{2.5}$	<0.01	<0.01			
PE3-02A	Elutriator Cyclone A	PM	0.40	1.75	4, 8, 19, 20, 24	4, 8, 19, 20, 24, 34	4, 8, 19
		PM_{10}	0.13	0.56			
		$PM_{2.5}$	0.03	0.15			
		VOC	0.22	(6)			
PE3-02B	Elutriator Cyclone B	PM	0.40	1.75	4, 8, 19, 20, 24	4, 8, 19, 20, 24, 34	4, 8, 19
		PM_{10}	0.13	0.56			
		$PM_{2.5}$	0.03	0.15			
		VOC	0.22	(6)			
PE3-03	Powder Surge Hopper Filter	PM	0.01	0.03	4, 7, 24	4, 7, 24, 30, 34	4, 7
		PM_{10}	0.01	0.03			
		$PM_{2.5}$	0.01	0.03			
		VOC	0.15	0.66			
PE3-04	Powder Feeder Filter	PM	<0.01	0.02	4, 7, 24	4, 7, 24, 30, 34	4, 7
		PM_{10}	<0.01	0.02			

Major NSR Summary Table

Permit Numbers: 127838 and PSDTX1588M1					Issuance Date: September 22, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Cond/Application Information	Special Condition/Application Information
		$PM_{2.5}$	<0.01	0.02			
		VOC	0.10	0.44			
PE3-05	Additive Hopper Filter	PM	0.01	0.02	7, 24	7, 24, 30, 34	7
		PM_{10}	0.01	0.02			
		$PM_{2.5}$	0.01	0.02			
PE3-06	Additive Feeder Filter	PM	<0.01	0.01	7, 24	7, 24, 30, 34	7
		PM_{10}	<0.01	0.01			
		$PM_{2.5}$	<0.01	0.01			
PE3-07	Pellet Dryer Cyclone	PM	0.62	2.73	4, 8, 19, 20, 24	4, 8, 19, 20, 24, 34	4, 8, 19
		PM_{10}	0.01	0.03			
		$PM_{2.5}$	<0.01	0.01			
		VOC	0.97	(6)			
PE3-08A	Product Silo A Filter	PM	0.33	0.73	4, 7, 19, 20, 24	4, 7, 19, 20, 24, 30, 34	4, 7, 19
		PM_{10}	0.33	0.73			
		$PM_{2.5}$	0.33	0.73			
		VOC	0.91	(6)			
PE3-08B	Product Silo B	PM	0.33	0.73	4, 7, 19, 20, 24	4, 7, 19, 20, 24,	4, 7, 19

Major NSR Summary Table

Permit Numbers: 127838 and PSDTX1588M1					Issuance Date: September 22, 2023		
Emission Point No. (1)	**Source Name (2)**	**Air Contaminant Name (3)**	**Emission Rates**		**Monitoring and Testing Requirements**	**Recordkeeping Requirements**	**Reporting Requirements**
			lbs/hour	**TPY (4)**	**Special Condition/Application Information**	**Special Cond/Application Information**	**Special Condition/Application Information**
	Filter	PM_{10}	0.33	0.73		30, 34	
		$PM_{2.5}$	0.33	0.73			
		VOC	0.91	(6)			
PE3-10, PE3-15	Elevated Flare or Enclosed Ground Flare Hourly CAP	CO (Elevated Flare Option)	58.52	-	3, 4, 10, 11, 25	3, 4, 10, 11, 25, 34	3, 4, 25
		NO_x (Elevated Flare Option)	11.36	-			
		CO (EGF Option)	92.00	-			
		NO_x (EGF Option)	23.27	-			
		SO_2	<0.01	-			
		VOC	148.05	-			
PE3-10, PE3-15	Elevated Flare or Enclosed Ground Flare Annual CAP	CO	-	7.49	3, 4, 10, 11, 25	3,4, 10,11, 25, 34	3,4, 25
		NO_x	-	2.64			
		SO_2	-	0.01			
		VOC	-	9.74			
PE3-11A, PE3-11B, HEX-02	Thermal Oxidizers A & B, Hexene Plant Thermal Oxidizer	NO_x	2.53	4.12	3, 4, 12, 13, 19, 24	3, 4, 12, 13, 19, 24, 34	3, 4, 12, 13, 19
		PM	0.31	0.51			
		PM_{10}	0.31	0.51			
		$PM_{2.5}$	0.31	0.51			

Major NSR Summary Table

Permit Numbers: 127838 and PSDTX1588M1					Issuance Date: September 22, 2023		
Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates		Monitoring and Testing Requirements	Recordkeeping Requirements	Reporting Requirements
			lbs/hour	TPY (4)	Special Condition/Application Information	Special Cond/Application Information	Special Condition/Application Information
		CO	3.48	5.66			
		SO_2	0.02	0.01			
		VOC	0.93	2.30			
PE3-12	PE3 Cooling Tower (5)	Chlorine Compounds	<0.01	<0.01	4, 18	4, 18, 34	4
		PM	1.53	4.29			
		PM_{10}	0.36	1.56			
		$PM_{2.5}$	<0.01	0.01			
		VOC	1.18	5.17			
PE3-13	Fugitives (5)	Cl_2	<0.01	0.02	3, 4, 14, 15, 16, 17	3, 4, 14, 15, 16, 17, 34	3, 4, 14
		VOC	12.03	52.68			
PE3-14	Extruder Feed Hopper Filter	PM	<0.01	0.01	4, 7, 24	4, 7, 24, 30, 34	4, 7
		PM_{10}	<0.01	0.01			
		$PM_{2.5}$	<0.01	0.01			
		VOC	0.03	0.15			
PE3-MAINT	PE3 Maintenance Fugitives	VOC	79.04	0.42	4, 26, 27, 28	4, 26, 27, 28, 29, 34	4
		PM	11.96	0.05			
		PM_{10}	6.52	<0.01			

Major NSR Summary Table

Permit Numbers: 127838 and PSDTX1588M1					Issuance Date: September 22, 2023		
Emission Point No. (1)	**Source Name (2)**	**Air Contaminant Name (3)**	**Emission Rates**		**Monitoring and Testing Requirements**	**Recordkeeping Requirements**	**Reporting Requirements**
			lbs/hour	**TPY (4)**	**Special Condition/Application Information**	**Special Cond/Application Information**	**Special Condition/Application Information**
		$PM_{2.5}$	6.52	<0.01			
PE3-10, PE3-15, PE3-TEMP	PE3 Flare System or Temporary Control Device (PE3 MSS Contribution) Hourly CAP	VOC	506.36	-	4, 10, 11, 25, 26, 27, 28, 32, 33	4, 10, 11, 25, 26, 27, 28, 33, 34	4, 25
		NO_x (Elevated Flare Option)	49.04	-			
		CO (Elevated Flare Option)	278.85	-			
		NO_x (EGF Option)	99.51	-			
		CO (EGF Option)	437.51	-			
PE3-10, PE3-15, PE3-TEMP	PE3 Flare System or Temporary Control Device (PE3 MSS Contribution) Annual CAP	VOC	-	4.13	4, 10, 11, 25, 26, 27, 28, 32, 33	4, 10, 11, 25, 26, 27, 28, 33, 34	4, 25
		NO_x	-	2.24			
		CO	-	18.81			
PE3-CAP	Cap for Downstream Pellet Handling VOCs	VOC (6)	-	10.13	4, 5, 6, 9, 20, 21, 22, 23	4, 5, 6, 9, 20, 21, 22, 23, 34	4

(1) Emission point identification - either specific equipment designation or emission point number from plot plan.
(2) Specific point source name. For fugitive sources, use area name or fugitive source name.
(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
Cl_2 - chlorine
Chlorine Compounds - hypochlorous acid and hydrogen chloride

EGF - Enclosed Ground Flare

(4) Compliance with annual emission limits (tons per year) is based on a 12-month rolling period.

(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.

(6) EPN PE3-CAP is representative of the annual cap for downstream pellet handling VOC emissions of the indicated EPNs.

Texas Commission on Environmental Quality
Air Quality Permit

A Permit Is Hereby Issued To
Formosa Plastics Corporation, Texas
Authorizing the Construction and Operation of
Point Comfort Plant
Located at **Point Comfort, Calhoun County, Texas**
Latitude 28.6888 Longitude -96.5472

Permits: 127838 and PSDTX1588M1

Amendment Date: September 22, 2023

Expiration Date: November 9, 2026

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.

Common Acronyms in Air Permits

°C = Temperature in degrees Celsius
°F = Temperature in degrees Fahrenheit
°K = Temperature in degrees Kelvin
µg = microgram
µg/m^3 = microgram per cubic meter
acfm = actual cubic feet per minute
AMOC = alternate means of control
AOS = alternative operating scenario
AP-42 = Air Pollutant Emission Factors, 5th edition
APD = Air Permits Division
API = American Petroleum Institute
APWL = air pollutant watch list
BPA = Beaumont/ Port Arthur
BACT = best available control technology
BAE = baseline actual emissions
bbl = barrel
bbl/day = barrel per day
bhp = brake horsepower
BMP = best management practices
Btu = British thermal unit
Btu/scf = British thermal unit per standard cubic foot or feet
CAA = Clean Air Act
CAM = compliance-assurance monitoring
CEMS = continuous emissions monitoring systems
cfm = cubic feet (per) minute
CFR = Code of Federal Regulations
CN = customer ID number
CNG = compressed natural gas
CO = carbon monoxide
COMS = continuous opacity monitoring system
CPMS = continuous parametric monitoring system
DFW = Dallas/ Fort Worth (Metroplex)
DE = destruction efficiency
DRE = destruction and removal efficiency
dscf = dry standard cubic foot or feet
dscfm = dry standard cubic foot or feet per minute
ED = (TCEQ) Executive Director
EF = emissions factor
EFR = external floating roof tank
EGU = electric generating unit
EI = Emissions Inventory
ELP = El Paso
EPA = (United States) Environmental Protection Agency
EPN = emission point number
ESL = effects screening level
ESP = electrostatic precipitator
FCAA = Federal Clean Air Act
FCCU = fluid catalytic cracking unit
FID = flame ionization detector
FIN = facility identification number
ft = foot or feet
ft/sec = foot or feet per second
g = gram
gal/wk = gallon per week
gal/yr = gallon per year
GLC = ground level concentration
GLC_{max} = maximum (predicted) ground-level concentration
gpm = gallon per minute
gr/1000scf = grain per 1000 standard cubic feet
gr/dscf = grain per dry standard cubic feet
H_2CO = formaldehyde
H_2S = hydrogen sulfide
H_2SO_4 = sulfuric acid
HAP = hazardous air pollutant as listed in § 112(b) of the Federal Clean Air Act or Title 40 Code of Federal Regulations Part 63, Subpart C
HC = hydrocarbons
HCl = hydrochloric acid, hydrogen chloride
Hg = mercury
HGB = Houston/Galveston/Brazoria
hp = horsepower
hr = hour
IFR = internal floating roof tank
in H_2O = inches of water
in Hg = inches of mercury
IR = infrared
ISC3 = Industrial Source Complex, a dispersion model
ISCST3 = Industrial Source Complex Short-Term, a dispersion model
K = Kelvin; extension of the degree Celsius scaled-down to absolute zero
LACT = lease automatic custody transfer
LAER = lowest achievable emission rate
lb = pound
lb/day = pound per day
lb/hr = pound per hour
lb/MMBtu = pound per million British thermal units
LDAR = Leak Detection and Repair (Requirements)
LNG = liquefied natural gas
LPG = liquefied petroleum gas
LT/D = long ton per day
m = meter
m^3 = cubic meter
m/sec = meters per second
MACT = maximum achievable control technology
MAERT = Maximum Allowable Emission Rate Table
MERA = Modeling and Effects Review Applicability
mg = milligram
mg/g = milligram per gram
mL = milliliter
MMBtu = million British thermal units
MMBtu/hr = million British thermal units per hour
MSDS = material safety data sheet
MSS = maintenance, startup, and shutdown
MW = megawatt
NAAQS = National Ambient Air Quality Standards
NESHAP = National Emission Standards for Hazardous Air Pollutants
NGL = natural gas liquids
NNSR = nonattainment new source review
NO_x = total oxides of nitrogen
NSPS = New Source Performance Standards

PAL = plant-wide applicability limit
PBR = Permit(s) by Rule
PCP = pollution control project
PEMS = predictive emission monitoring system
PID = photo ionization detector
PM = periodic monitoring
PM = total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
$PM_{2.5}$ = particulate matter equal to or less than 2.5 microns in diameter
PM_{10} = total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
POC = products of combustion
ppb = parts per billion
ppm = parts per million
ppmv = parts per million (by) volume
psia = pounds (per) square inch, absolute
psig = pounds (per) square inch, gage
PTE = potential to emit
RA = relative accuracy
RATA = relative accuracy test audit
RM = reference method
RVP = Reid vapor pressure
scf = standard cubic foot or feet
scfm = standard cubic foot or feet (per) minute
SCR = selective catalytic reduction
SIL = significant impact levels
SNCR = selective non-catalytic reduction
SO_2 = sulfur dioxide
SOCMI = synthetic organic chemical manufacturing industry
SRU = sulfur recovery unit
TAC = Texas Administrative Code
TCAA = Texas Clean Air Act
TCEQ = Texas Commission on Environmental Quality
TD = Toxicology Division
TLV = threshold limit value
TMDL = total maximum daily load
tpd = tons per day
tpy = tons per year
TVP = true vapor pressure
VOC = volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
VRU = vapor recovery unit or system

Special Conditions

Permit Numbers 127838 and PSDTX1588M1

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" and the facilities covered by this permit (Polyethylene 3 (PE3) Unit located at Point Comfort, Jackson County, Texas) are authorized to emit subject to the emission rate limits on that table and other operating requirements specified in the special conditions.

2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration of greater than 1 percent are not authorized by this permit. 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 allowed except for relief valves, safety valves and rupture discs listed below.

Equipment Number	Description	Tag Number
C1502	Metal Alkyl Seal Pot PSV	PSV 1502-61
E4002A	Cycle gas cooler (E4002A), shell side PSV	PSV 4002-60
E4002B	Cycle gas cooler (E4002B), shell side PSV	PSV 4002-61
C5009	Product Purge Bin Top PSV	PSE 5009-61
C4050	UCAT Seal pot top PSV	PSV 4045-61

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): **(09/23)**

   A. Subpart A, General Provisions.

   B. Subpart DDD, Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry.

4. These facilities shall comply with all applicable requirements of the U.S. Environmental Protection Agency (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 FFFF, National Emission Standard for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing.

Emission Standards and Operational Specifications

5. The polymer production shall be recorded daily during operation of this facility. The records shall include the production rate for the day. All records shall be dated for each day this facility is operated, and this record shall be made available as Confidential Business Information to the Executive Director of the Texas Commission on Environmental Quality (TCEQ) or his designated representative upon request.

6. The facility covered by this permit shall not operate unless all associated air pollution abatement equipment is maintained in good working order and operating during normal facility operations.

7. The following steps shall be performed, at a minimum, to ensure the proper operation of the baghouses:

   A. All PM control systems shall be designed to effectively capture emissions from associated equipment and minimize particulate emissions.

   B. Each PM emission capture system shall be maintained free of holes, cracks, and other conditions that would reduce the collection efficiency of the emission capture system.

   C. The differential pressure drop across each baghouse shall be monitored continuously and recorded at least once an hour for each baghouse during operation of this facility. For the EPN listed in the following table, the pressure drop shall be at least the minimum pressure drop, and shall not exceed the maximum pressure drop. **(12/21)**

EPN	Minimum pressure drop (inches of H2O)	Maximum pressure drop (inches of H2O)
PE3-01*	100	500
PE3-03	5	10
PE3-04	4	10
PE3-05	2	5
PE3-06	2	5
PE3-08A	4	5
PE3-08B	4	5
PE3-14	1	10

*Sintered metal filter, all others are fabric filters

Each monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to tolerances (e.g., inches of water, %-span, etc.) to be specified when available from the manufacturer of the selected device.

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

All records of baghouse pressure drops shall be dated for each day this facility is operated, and this record shall be made available to the Executive Director of the TCEQ or his designated representative upon request.

D. Particulate matter from the baghouse exhaust vents shall not exceed 0.002 grain per dry standard cubic foot (dscf) of air from any vent. This shall be ensured by not having any visible emissions from the exhaust vent of the filtered control device as determined using U.S. Environmental Protection Agency (EPA) Test Method 22. Inspections for visible emissions from each filtered control device shall occur once a quarter when the control device is in operation. The definition of visible emissions shall be in accordance with EPA Test Method 22 and 30 TAC §101.1. **(12/21)**

E. When there are visible stack emissions from a baghouse, the appropriate process equipment causing the visible emissions shall be shut down as soon as practicable, and the entire baghouse shall be tested and inspected, and failed or damaged parts shall be repaired or replaced.

F. A spare parts inventory for each baghouse shall be maintained at the site of this facility.

G. The TCEQ Regional Director shall be notified as soon as possible of any baghouse system malfunction that results in visible emissions.

H. Records shall be maintained of all inspections and maintenance performed.

8. Particulate matter outlet grain loading shall not exceed 0.002 grain per dry standard cubic foot (grain/dscf) of air for EPNs PE3-02A and PE3-02B, and 0.007 grain/dscf of air for EPN PE3-07. **(12/21)**

The following steps shall be performed, at a minimum, to ensure the proper operation of the cyclones:

A. All PM control systems shall be designed to effectively capture emissions from associated equipment and minimize particulate emissions.

B. Either of the differential pressure across each cyclone or its inlet gas flow rate shall be continuously monitored and be recorded at least once an hour. Differential pressures or the inlet gas flow rates shall be maintained within manufacturer's specifications for each cyclone.

Each cyclone monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications or at least annually, whichever is more frequent, and shall be accurate to tolerances (e.g., inches of water, %-span, etc.) to be specified when available from the manufacturer of the selected device.

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

All records of cyclone pressure drops shall be dated for each day this facility is operated, and this record shall be made available to the Executive Director of the TCEQ or his designated representative upon request.

C. When there are visible stack emissions from a cyclone, the appropriate process equipment causing the visible emissions shall be shut down as soon as practicable, and the cyclone shall be tested and inspected, and failed or damaged parts shall be repaired or replaced.

D. The TCEQ Regional Director shall be notified as soon as possible of any cyclone system malfunction that results in visible emissions.

E. Records shall be maintained of all inspections and maintenance performed.

9. Annual production from the permitted units shall not exceed 1,060 million (MM) pounds per year. The facility will produce copolymers and homopolymers to the hourly throughput constraints contained in the Table 2 submitted with application form PI-1 dated December 22, 2014. Production records shall be updated monthly with the pounds of each type of polymer produced during the previous month and rolling 12 months to date. **(12/21)**

Flare System

10. The PE3 Flare system, consisting of the Elevated Flare (EPN PE3-10) and the Enclosed Ground Flare (EGF) (EPN PE3-15), shall be designed and operated in accordance with the following requirements: **(09/23)**

A. The flare system shall be designed such that the combined assist 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 vent gases are directed to the flare.

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 when vent gases are directed to the flare. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each flame monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications or equivalent.

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. For the Elevated Flare (EPN PE3-10), this operation shall be ensured by the use of steam assist to the flare, as appropriate.

D. The permit holder shall install a continuous flow monitor and either a composition analyzer or a calorimeter that provide a record of the vent stream flow and either the vent gas composition or BTU content for each flare.

The flow monitor sensor and analyzer sample points shall be installed in the vent stream as near as possible to the flare inlet or flare header inlet such that the total vent stream to the flare system 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 to demonstrate adequate tip velocity and BTU content.

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 initial calibration of the flow monitor shall demonstrate the flow monitor accuracy

specification of ±5.0%, at flow rates equivalent to 30%, 60%, and 90% of monitor full scale or as demonstrated by compliance with API 14.10. Annual calibrations of the flow monitor thereafter shall be per manufacturer specification, or equivalent.

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

If the vent gas BTU content is monitored, 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) shall be recorded at least once every 15 minutes. 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 September 29, 2022.

E. After August 12, 2023, the Elevated Flare (EPN PE3-10) and the EGF (EPN PE3-15) shall meet the requirements of Special Condition No. 11 which will replace and supersede the requirements of this Special Condition. If a compliance extension is granted in accordance with NESHAP procedures, then the effective date to meet the requirements of Special Condition No. 11 will be specified in the compliance extension approval. **(09/23)**

F. Pilot and supplemental (fuel) gas combusted in the flares shall be sweet natural gas containing no more than 0.26 grains of total sulfur per 100 dry standard cubic feet. **(09/23)**

11. The PE3 Flare system, consisting of the Elevated Flare (EPN PE3-10) and the EGF (EPN PE3-15), shall be designed and operated in accordance with the following requirements: **(09/23)**

A. The flare system shall be designed such that the combined flare vent gas, assist air, and/or total steam to each flare meets the 40 CFR § 63.670 specifications for minimum combustion zone net heating value and maximum tip velocity at all times that flare vent gas may be directed to the flare for more than 15 minutes. Flared gas actual exit velocity, vent gas net heating value, and flared gas combustion zone net heating value shall be determined in accordance with 40 CFR §63.670(k), §63.670(l), and §63.670(m) on a 15-minute block average and recorded at least once every 15 minutes.

If the flare actively receives perimeter assist air, it shall be operated to meet the 40 CFR §63.670 specifications for minimum net heating value dilution parameters.

B. The flares shall be operated with pilot flames present at all times flare vent gas may be directed to the flares. The pilot flames 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. Flares shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours, demonstrated and recorded per the requirements of §63.670(h).

D. The permit holder shall install flow monitors that continuously measure, calculate, and record the total volumetric vent stream flow rate (including waste gas, purge gas, supplemental gas, and sweep gas), and shall install a monitoring system capable of determining the concentration of individual components in the flare vent gas or the net heating value of the flare vent gas. The flow monitor sensor and analyzer sample points shall be installed in the vent stream such that the total vent stream to the flare is measured and analyzed.

If one or more gas streams that combine to comprise the total flare vent gas flow are monitored separately for net heating value and flow, the 15-minute block average net heating value shall be determined separately for each measurement location and a flow-weighted average of the gas stream net heating values shall be used to determine the 15-minute block average net heating value of the cumulative flare vent gas.

If assist air or assist steam is used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of continuously measuring, calculating, and recording the total volumetric flow rate of assist air and/or assist steam used with the flare.

If pre-mix assist air and/or perimeter assist air are used, the owner or operator shall install, operate, calibrate, and maintain a monitoring system capable of separately measuring, calculating, and recording the volumetric flow rate of premix assist air and/or perimeter assist air used with the flare. Continuously monitoring fan speed or power and using fan curves is an acceptable method for continuously monitoring assist air flow rates.

Perimeter assist air includes all air assist except premix assist air. Premix assist air includes any air intentionally entrained in center steam.

Assist air includes premix assist air and perimeter assist air, but does not include the surrounding ambient air.

The monitors shall be calibrated or have a calibration check performed as specified in Table 13 of the appendix to 40 CFR 63, Part CC to meet the following accuracy specifications: the vent flow monitor shall be ±20 percent of flow rate at velocities ranging from 0.03 to 0.3 meters per second (0.1 to 1 feet per second) ±5 percent of flow rate at velocities greater than 0.3 meters per second (1 feet per second), all other gas flow monitors shall be ±5 percent over the normal range of flow measured or 280 liters per minute (10 cubic feet per minute) whichever is greater, temperature monitor shall be ±1 percent over the normal range of temperature measured, expressed in degrees Celsius (C), or 2.8 degrees C, whichever is greater, and pressure monitor shall be ±5 percent over the normal operating range or 0.12 kilopascals (0.5 inches of water column), whichever is greater. For purposes of this permit, a calibration check means, at a minimum, using a second device or method to verify that the monitor is accurate as specified in the permit.

Calorimeters shall have an accuracy of at least ±2% of span and be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in Table 13 of the appendix to 40 CFR 63, Part CC, to continuously measure and record the net heating value of the vent gas sent to the flare, in British thermal units/standard cubic foot of the gas.

For determination of net heating value by gas chromatograph, the minimum accuracy shall be as specified in Performance Specification 9 of Part 60, appendix B. Composition monitoring instruments shall be calibrated, installed, operated, and maintained in accordance with manufacturer recommendations and as specified in 40 CFR §63.671(e) and Table 13 of 40 CFR Pt. 63, Subpart CC. Individual component properties specified in Table 12 of Subpart CC shall apply to net heating value calculations.

For determination of net heating value by continuous process mass spectrometer, the minimum accuracy; composition monitoring; calibration; installation; operation and maintenance shall be done in accordance with 40 CFR §63.1103(e)(4)(viii).

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

F. Hourly mass emission rates shall be determined and recorded using the monitoring data collected pursuant to paragraph D of this Special Condition and the emission factors specified in the permit amendment application PI-1 dated September 29, 2022.

G. Pilot and supplemental (fuel) gas combusted in the flares shall be sweet natural gas containing no more than 0.26 grains of total sulfur per 100 dry standard cubic feet.

Thermal Oxidizers

12. Except during periods of waste gas flow transitions between the thermal oxidizers and during their start-up and shutdown, the thermal oxidizers (EPNs PE3-11A, PE3-11B) shall achieve a VOC destruction efficiency of 99.9% or an outlet VOC concentration of less than 10 ppmv on a dry basis.

A. Except during periods of waste gas flow transitions between the thermal oxidizers and during their start-up and shutdown, the oxidizer firebox exit temperature shall be maintained at a minimum of 1400°F while waste gas is being fed into the oxidizer prior to initial stack testing. After the initial stack test has been completed, the six minute average oxidizer firebox exit temperature shall be at greater than the respective hourly average maintained during the most recent satisfactory stack testing required by Special Condition No. 19.

B. The oxidizer firebox exit temperature shall be continuously monitored and recorded when in operation. The temperature measurement device shall reduce the temperature readings to an averaging period of six minutes or less and record it at that frequency. The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

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

D. An oxygen analyzer shall continuously monitor and record oxygen concentration when waste gas is directed to the oxidizer. It shall reduce the oxygen readings to an averaging period of 6 minutes or less and record it at that frequency.

E. The oxygen analyzer shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified Performance Specification No. 3, 40 CFR Part 60, Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

F. The analyzer shall be quality-assured at least semiannually using cylinder gas audits (CGAs) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.2, with the following exception: a relative accuracy test audit is not required once every four quarters (i.e., two successive semiannual CGAs may be conducted). An equivalent quality-assurance method approved by the TCEQ may also be used. Successive semiannual audits shall occur no closer than four months. Necessary corrective action shall be taken for all CGA exceedances of ±15 percent accuracy and any continuous emissions monitoring system downtime in excess of 5 percent of the incinerator operating time. These occurrences and corrective actions shall be reported to the appropriate TCEQ Regional Director on a quarterly basis. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director. There may be other case specific ways that are used to ensure adequate oxygen concentration.

G. Supplemental (fuel) gas combusted in the thermal oxidizers shall be sweet natural gas containing no more than 0.26 grains of total sulfur per 100 dry standard cubic feet. **(09/23)**

13. The C6 plant thermal oxidizer (EPN: HEX-02) shall comply with the applicable requirements of NSR Permit No. 170552. **(09/23)**

Fugitive Emissions Monitoring

14. Piping, Valves, Connectors, Pumps, Agitators, and Compressors - 28VHP

The following requirements apply to piping, valves, connectors, pumps, agitators, and compressors containing or in contact with fluids that could reasonably be expected to contain greater than or equal to 10 weight percent volatile organic compounds (VOC) at any time.

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 readily available upon request.

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

- piping and instrumentation diagram (PID);
- a written or electronic database or electronic file;
- color coding;
- a form of weatherproof identification; or
- designation of exempted process unit boundaries.

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

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

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

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

Each open-ended valve or line shall be equipped with an appropriately sized cap, blind flange, plug, or a second valve to seal the line. Except during sampling, 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 within the 72-hour 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. 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. If a relief valve is equipped with rupture disc, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity.

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. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

The gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. 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.

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

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

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

I. 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 within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is

equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.

J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. 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.

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

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

28CNTA (Connectors Inspected Annually)

15. In addition to the weekly physical inspection required by Item E of Special Condition No. 14, all connectors in gas\vapor and light liquid service shall be monitored annually with an approved gas analyzer in accordance with Items F thru J of Special Condition 14. Alternative monitoring frequency schedules ("skip options") of Title 40 Code of Federal Regulations Part 63, Subpart H, National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, may be used in lieu of the monitoring frequency required by this permit condition. Compliance with this condition does not assure compliance with requirements of applicable state or federal regulation and does not constitute approval of alternative standards for these regulations. **(12/21)**

16. Alternative requirements for the equipment specified in Special Condition No. 14 are indicated as follows:

    A. In addition to the methods identified in Special Condition No. 14.A, exempted components may be identified by process flow diagrams that exhibit sufficient detail to identify major pieces of equipment, including major process flows to, from, and within a process unit. Major equipment includes, but is not limited to, columns, reactors, pumps, compressors, drums, tanks, and exchangers.

    B. In lieu of the requirement specified in Special Condition No. 14.H to monitor new and reworked piping connections for leaks using an approved gas analyzer within 15 days of the components being returned to service, these piping connections may be monitored for leaks using an approved gas analyzer within 30 days of the components being returned to service. **(09/23)**

    C. As an alternative to comparing the daily emission rate of the components on the delay of repair (DOR) list to the total emissions from a unit shutdown per the requirements of Special Condition No. 14, Subparagraph I, the cumulative hourly emission rate of all components on the DOR list may be compared to ten percent of the fugitive short term allowable on the

Maximum Allowable Emission Rate Table in order to determine if the TCEQ Regional Director and any local program is to be notified. In addition, the hourly emission rates of each specific compound on the DOR list must be less than ten percent of the speciated hourly fugitive emission rate of the same compound.

D. With respect to Special Condition No. 14, new and reworked is meant to apply to major changes in piping. It is not intended to apply to minor activities including but not limited to: installation/replacement of small number of valves and flanges; minor repairs; gasket replacement; repair/replacement of small sections of piping, etc. Also, "process pipelines" does not apply to underground process sewer lines, cooling tower water, fire water, etc. Additionally, the requirement for new and reworked buried connectors to be welded will not apply if compliance would require a process unit shutdown or would create a safety issue including, but not limited to, close proximity of other process pipelines and equipment or unsafe access to the piping.

E. In lieu of the 2,000 ppmv VOC limit in Paragraph H of Special Condition No. 14, damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 500 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. A first attempt to repair the leak must be made within 5 days. Records of the first attempt to repair shall be maintained.

17. Physical Inspections of Piping, Valves, Pumps, and Compressors in Mineral Oil service – 28PI **(09/23)**

The following requirements apply to the above-referenced equipment:

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

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

C. 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. Non-accessible valves, as defined in Title 30 Texas Administrative Code (30 TAC) Chapter 115, shall be identified in a list to be made available upon request.

D. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter.

E. Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed.

F. All piping components shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

G. Damaged or leaking valves, connectors, compressor seals, and pump seals 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, 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.

At the discretion of the TCEQ Executive Director or designated representative, early unit shutdown or other appropriate action may be required based on the number and severity of tagged leaks awaiting shutdown.

H. Date and time of each inspection shall be noted in the operator's log or equivalent. Records shall be maintained at the plant site of all repairs and replacements made due to leaks. These records shall be made available to representatives of the Texas Commission on Environmental Quality (TCEQ) upon request.

Cooling Towers

18. The cooling tower (EPN PE3-12) shall be operated and monitored in accordance with the following:

A. The VOC associated with cooling tower water shall be monitored monthly with an air stripping system meeting the requirements of the TCEQ Sampling Procedures Manual, Appendix P (dated January 2003 or a later edition) or an approved equivalent sampling method. The results of the monitoring, cooling water flowrate, and maintenance activities on the cooling water system shall be recorded. The monitoring results and cooling water hourly mass flowrate shall be used to determine cooling tower hourly VOC emissions. The rolling 12 month cooling water emission rate shall be recorded on a monthly basis and be determined by summing the VOC emissions between VOC monitoring periods over the rolling 12 month period. The emissions between VOC monitoring periods shall be obtained by multiplying the total cooling water mass flow between cooling water monitoring periods by the higher of the 2 VOC monitored results.

B. Each cooling tower shall 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.

C. Total dissolved solids (TDS) in the cooling tower water shall not exceed 6,500 parts per million by weight (ppmw). Dissolved solids in the cooling water drift are considered to be emitted as PM, PM_{10}, and $PM_{2.5}$ as represented in the permit application calculations. **(12/21)**

D. Cooling towers shall be analyzed for particulate emissions using one of the following methods: **(12/21)**

(1) Cooling water shall be sampled at least once per day for total dissolved solids (TDS); or

(2) TDS sampling 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 sampling 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 four consecutive weekly TDS-to-conductivity ratios determined using the paragraph above provided the highest ratio is not more than 10% larger than the smallest ratio.

E. The permit holder shall validate the TDS-to-conductivity correlation factor once semi-annually. 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.

F. Cooling water sampling shall be representative of the cooling water returned to the tower 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 (or more recent revision) field or routine laboratory testing or ASTM D1125-95B (or more recent revision) for a 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 the analysis methods outlined in this condition with written approval from the TCEQ Regional Director. Alternate method compliant with Standard Method 2510B is approved by TCEQ for alternative to conductivity analysis methods listed in this condition. **(12/21)**

(4) Records of all instrument calibrations and test results and process measurements used for the emission calculations shall be retained.

G. The emission rates of PM, PM_{10} 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 rates. Alternately, the design maximum circulation rate may be used for all calculations. Emission records shall be updated monthly. Dissolved solids in the cooling water drift are considered to be emitted as PM, PM_{10}, and $PM_{2.5}$ as represented in the permit application calculations.

H. Quality assured (or valid) data must be generated when the cooling tower is operating. Loss of valid data due to periods of monitor breakdown, out-of-control operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in hours) that the cooling tower operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded.

Initial Demonstration of Compliance

19. 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 Thermal Oxidizers (EPNs PE3-11A, PE3-11B) and from the vents downstream of the extruder (Pellet Dryer Cyclone, Product Silo Bag Filters, Loading Cyclones, Elutriator Cyclones; respective EPNs are PE3-07, PE3-08A, PE3-08B, PE3-02A, PE3-02B) to demonstrate compliance with the MAERT, and with the maximum outlet grain loading concentrations specified for the cyclone exhaust vents (EPNs PE3-02A, PE3-02B, PE3-07) in Special Condition No. 8. 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 Texas Commission on Environmental Quality (TCEQ) Sampling Procedures Manual and the U.S. Environmental Protection Agency (EPA) Reference Methods. Initial compliance test data was received by TCEQ for EPNs PE3-02A, PE3-02B, and PE3-07 and can be found within the project record. **(12/21)**

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) Procedure/parameters to be used to determine worst case emissions during 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 the test reports. The TCEQ Regional Director must approve any deviation from specified sampling procedures.

B. Air contaminants emitted from the thermal oxidizers to be tested for include (but are not limited to) VOC, NO_x and CO.

C. Air contaminants emitted from the vents downstream of the extruder to be tested for include (but are not limited to) VOC. For the cyclones, the air contaminants to be tested for include PM, PM_{10} and $PM_{2.5}$.

The permit holder may submit a request to substitute vendor specification data in lieu of the testing required in this condition for the cyclones and bag filter listed in Special Condition No. 19. The vendor specification data shall guarantee the maximum outlet grain loading specified in Special Condition No. 8 at each particle size (PM, PM_{10} and $PM_{2.5}$) to demonstrate compliance with the emission rates specified in the MAERT. The vendor specification data shall provide this information at the maximum airflow rate through the specific control device represented in the initial application dated December 14, 2014. The vendor specification data shall also include all documentation and test methods that were used to derive the specification data and support the statements in the guarantee.

The request for approval of the vendor specification data and all supporting documentation shall be submitted through a permit alteration or amendment application. This request shall be made no later than 180 days prior to the start of operations. If authorized, the permit shall be updated with the alteration or amendment application date of the vendor guarantee submittal, and shall specify the EPN for which the vendor guarantee was approved. If the substitution of the vendor specification data in lieu of the testing is not authorized through a permit alteration or amendment, then the testing delineated in this condition shall apply.

If any of the EPNs listed in Special Condition No. 19 that have had vendor specification data approved are modified after the approval, or if the manufacturer or model has changed, then a new vendor specification shall be submitted in accordance with this condition. **(06/17)**

D. Sampling shall occur within 60 days after achieving the maximum operating rate, but no later than 180 days after initial start-up of the facilities and at such other times as may be required by the TCEQ Executive Director. Requests for additional time to perform sampling shall be submitted to the appropriate regional office.

E. The facilities being sampled shall operate at a minimum of 80 percent of the design rate during stack emission testing, to include the flowrate and heating value of the waste gas to the Thermal Oxidizers. These conditions/parameters and any other primary operating parameters that affect the emission rate shall be monitored and recorded during the stack test. Any additional parameters shall be determined at the pretest meeting and shall be stated in the sampling report. Permit conditions and parameter limits may be waived during stack testing performed under this condition if the proposed condition/parameter range is identified in the test notice specified in paragraph A and accepted by the TCEQ Regional Office. Permit allowable emissions and emission control requirements are not waived and still apply during stack testing periods.

F. During subsequent operations, if the production or operating rate of the process is more than 10 percent higher than the rate observed for these parameters during the previous stack test, stack sampling shall be performed at the new operating conditions within 120 days. This sampling may be waived by the TCEQ Air Section Manager for the region.

G. Copies of the final sampling report shall be forwarded to the offices below within 30 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 TCEQ Corpus Christi Regional Office

One copy to EPA, Region 6, Dallas Office

H. The requirements for stack sampling of the vents downstream of the extruder or submittal of vendor specification data submitted in lieu of the testing required by this special condition shall become effective 180 days following the date of this permit alteration. **(5/19)**

Continuous Demonstration of Compliance

20. Compliance with the MAERT VOC emission limits for the process vents downstream of the extruder (EPNs PE3-07, PE3-08A, PE3-08B, PE3-02A, PE3-02B) shall be determined, by calculation, using production rates and results from polymer sampling and testing. **(12/21)**

A. Total VOC emitted to the atmosphere from the process vents downstream of the extruder (EPNs listed above) shall not exceed 20 pounds of VOC/million (MM) pounds of product polymer on a rolling 12-month average basis.

B. The permit holder shall sample and test the polymer for residual VOC as follows:

(1) Collect three samples of pellets monthly when the reactor is running for the entire month. When the reactor is not running the entire month, collect a sample each week the reactor is running.

(2) Samples of pellets shall be taken after the extruder (E) and at final product loading (P).

(3) Sampling and testing of the polymer shall be performed using a headspace analysis method which measures the concentration of VOC (ppmw) evolved from the product.

Alternate sampling and testing methods shall be approved by the TCEQ Corpus Christi Regional Office.

C. Uncontrolled residual VOC emissions in pounds (lbs) shall be calculated on a calendar month basis no later than the end of the following calendar month by multiplying the average of the residual VOC (ppmw) for the samples ("E" minus "P") by the production rate for the month.

21. The rolling 12-month average residual VOC emissions (lb VOC/MM lb product) for polyethylene production shall be the sum of the uncontrolled residual VOC emissions for the current month and the preceding 11 month period divided by the total polyethylene production for the current and preceding 11-month period.

22. Monthly records shall include the following:

A. Date and time of each sample.

B. Monthly total polyethylene production.

C. Measured total VOC concentration (ppmw) in the polymer collected after the extruder and at final product loading resulting from the analysis specified in Special Condition No. 20.B(3).

D. Calculated uncontrolled residual VOC emissions for each reaction line in lbs.

E. Calculated rolling 12-month average residual VOC emissions in pounds per million pounds of product (lb/MMlbs).

F. Calculated total rolling 12-month residual VOC emissions from all reaction lines in tons per year.

23. Ongoing compliance with VOC emission limits for the polyethylene pellet handling systems between each extruder and product loadout (inclusive) will be determined by calculation using monthly production rates and monthly average sampling and testing of the polyethylene for residual VOC as stated in SC 20 and 21 at the following two locations: (A) immediately after the pellet extruder and (B) at final product loading.

The VOC head space test attached to these conditions shall be used to determine the residual VOC. Monthly average sampling will be based on the minimum number of samples as stated in SC 20.B(1). Separate samples are required for each product grade type produced during the month. Products that differ in VOC comonomer compounds are considered different grades.

Sampling methods are to be consistent with those used in the initial compliance test data submitted as part of the project initially received by TCEQ on June 11, 2020, **(12/21)**

Compliance Assurance Monitoring

24. The following requirements apply to the capture systems for EPN emitting particulate matter ($PM/PM_{10}/PM_{2.5}$) as indicated on this permit's MAERT:

A. External visual inspections of the capture system shall be conducted annually to ensure the proper operation of its equipment.

B. Visual inspection of the internal filter bags shall be conducted at each shutdown of a baghouse to verify the absence of cracks, holes, tears, and other defects. Baghouse shutdowns subject to this inspection are comprised of those described as follows:

(1) Planned maintenance and inspection of the baghouse.

(2) Planned maintenance shutdowns of the overall process, except those in response to acts of God, or process equipment malfunctions, unrelated to the baghouse.

(3) Any baghouse shutdown otherwise required by this permit.

C. The particulate matter control device shall not have a bypass.

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

25. The following requirements apply to capture systems for the PE3 Flare system, consisting of the Elevated flare (EPN PE3-10) and EGF (EPN PE3-15). **(09/23)**

A. Either conduct a monthly visual, auditory, and/or olfactory inspection of the capture system to verify there are no leaking components in the capture system; or verify the capture system is leak-free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21 once a year. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

B. If there is a bypass for the specified flare, the permit holder shall comply with either of the following requirements:

(1) Install a flow indicator that records and verifies zero flow at least once every fifteen minutes immediately downstream of each valve that if opened would allow a vent stream to bypass the control device and be emitted, either directly or indirectly, to the atmosphere; or

(2) Once a month, inspect the valves, verifying that the position of the valves and the condition of the car seals prevent flow out the bypass.

A bypass does not include authorized analyzer vents, highpoint bleeder vents, low point drains, or rupture discs upstream of pressure relief valves if the pressure between the disc and relief valve is monitored and recorded at least weekly.

C. Records of the inspections shall be maintained; if any of their results are not satisfactory, the permit holder shall promptly take necessary corrective action.

D. If the monitoring or inspections indicate a bypass of the flare when it is required to be in service, a deviation shall be reported consistent with and as satisfied by compliance with the deviation reporting requirements of the facility's Title V permit.

Planned Maintenance, Startup and Shutdown

26. This permit authorizes the emissions from the facilities identified for the planned maintenance, startup, and shutdown (MSS) activities summarized in the MSS Activity Summary (Attachment C) attached to this permit.

Attachment A identifies the inherently low emitting MSS activities that may be performed at the plant. Emissions from activities identified in Attachment A shall be considered to be equal to the

potential to emit represented in the permit application. The estimated emissions from the activities listed in Attachment A must be revalidated annually. This revalidation shall consist of verifying the estimated emissions for each type of activity and the basis for that emission estimate.

In addition, planned MSS emissions emitted from routine emission points are authorized provided the emissions are compliant with the respective MAERT allowable emission rates and special conditions. This permit authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: vacuum trucks and associated control devices (EPN PE3-TEMP). Emissions from temporary facilities are authorized provided the temporary facility (a) does not remain on the plant site for more than 12 consecutive months, (b) is used solely to support planned MSS activities at the permanent facilities authorized by this permit, and (c) does not operate as a replacement for an existing authorized facility.

Routine maintenance activities, as identified in Attachment B may be tracked through the work orders or equivalent. Emissions from activities identified in Attachment B shall be calculated using the number of work orders or equivalent that month and the emissions associated with that activity identified in the permit application.

The performance of each planned MSS activity not identified in Attachments A or B and the emissions associated with it shall be recorded and include at least the following information:

A. the process unit at which emissions from the MSS activity occurred, including the emission point number and common name of the process unit;

B. the type of planned MSS activity and the reason for the planned activity;

C. the common name and the facility identification number, if applicable, of the facilities at which the MSS activity and emissions occurred;

D. the date and time of the MSS activity and its duration;

E. the estimated quantity of each air contaminant, or mixture of air contaminants, emitted with the data and methods used to determine it. The emissions shall be estimated using the methods identified in the permit application, consistent with good engineering practice.

All MSS emissions shall be summed monthly and the rolling 12-month emissions shall be updated on a monthly basis.

27. Except for instrumentation/analyzer maintenance, storage vessels and vacuum trucks, process units and facilities shall be depressurized, degassed, and placed back into service in accordance with the following requirements.

A. The process equipment shall be vented to a control device or a controlled recovery system during depressurization.

B. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment or commencing depressurization, degassing and/or maintenance. Equipment that only contains material with VOC partial pressure less than 0.50 psi at the normal process temperature and 95°F may be opened to the atmosphere after liquids are removed as required by this condition. Liquids must be drained into a closed vessel unless prevented by the physical configuration of the equipment. If it is necessary to drain liquid into an open pan or sump, the liquid must be covered or transferred to a covered vessel within one hour of being drained.

C. If mixed phase materials must be removed from process equipment during depressurization, liquids removal, or degassing, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. Any vents in the knockout drum or equivalent must be routed to a control device or a controlled recovery system. Control must remain in place while mixed phase material removal is being performed.

D. Facilities shall be degassed using practices that ensure air contaminants are removed from the system through the control device or controlled recovery system to the extent allowed by process equipment or storage vessel design. Records shall be maintained of the control device or recovery system utilized with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.

E. After degassing in accordance with Subparagraph D of this Special Condition, the VOC concentration in the facilities being degassed shall be verified to be below 10,000 ppmv or less than 10 percent of the lower explosive limit (LEL) using one of the methods below prior to opening directly to atmosphere.

(1) For MSS activities other than process unit startup, shutdown, hydroblasting, or turnaround, the following option may be used in lieu of (2) below. The facilities being prepared for maintenance shall not be vented directly to atmosphere, except as necessary to verify an acceptable VOC concentration and establish isolation of the work area, until the VOC concentration has been verified to be less than 10 percent of the lower explosive limit (LEL) per the site safety procedures. Trapped vapor that cannot be degassed because of the presence of polymer plugs may be vented directly to atmosphere during hydroblasting.

Documentation shall be maintained of the locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the purge gases. If the process equipment is purged with a gas, two system volumes of purge gas must have passed through the control device or controlled recovery system before the vent stream may be sampled to verify acceptable VOC concentration prior to uncontrolled venting. The VOC sampling and analysis shall be performed using an instrument meeting the requirements of Special Condition No. 28.A(1)(c). The sampling point shall be upstream of the inlet to the control device or controlled recovery system. The sample ports and the collection system must be designed and operated such that there is no air leakage into the sample probe or the collection system downstream of the process equipment or vessel being purged. The facilities shall be degassed to a control device or controlled recovery system until the VOC concentration is less than 10,000 ppmv or less than 10 percent of the lower explosive limit (LEL). Documented plant procedures used to de-inventory equipment to a control device for safety purposes (i.e., hot work or vessel entry procedures) that achieve at least the same level of purging may be used in lieu of the above.

F. Gases and vapors with VOC partial pressure greater than 0.50 psi may be vented directly to atmosphere if all the following criteria are met:

(1) It is not technically practicable to depressurize or degas, as applicable, into the process.

(2) There is not an available connection to a plant control system (flare).

(3) There is no more than 50 lb of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

Except for Attachment A activities, all instances of venting directly to atmosphere per Special Condition No. 27.F must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the activity record for those planned MSS activities. **(12/21)**

28. Air contaminant concentration shall be measured using an instrument/detector meeting one of the following methods:

A. VOC concentration shall be measured using an instrument meeting all the requirements specified in EPA Method 21 (40 CFR 60, Appendix A) with the following exceptions:

(1) The instrument shall be calibrated within 24 hours of use with a calibration gas such that the response factor of the VOC (or mixture of VOCs) to be monitored shall be less than 2.0. The calibration gas and the gas to be measured, and its approximate response factor shall be recorded. If the RF of the VOC (or mixture of VOCs) to be monitored is greater than 2.0, the VOC concentration shall be determined as follows:

(a) VOC Concentration = Concentration as read from the instrument*RF

(b) In no case should a calibration gas be used such that the RF of the VOC (or mixture of VOCs) to be monitored is greater than 5.0.

(c) Sampling shall be performed as directed by this permit in lieu of section 8.3 of Method 21. During sampling, data recording shall not begin until after two times the instrument response time. The date and time shall be recorded, and VOC concentration shall be monitored for at least 5 minutes, recording VOC concentration each minute. As an alternative the VOC concentration may be monitored over a five-minute period with an instrument designed to continuously measure concentration and record the highest concentration read. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

(2) Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements:

(a) The air contaminant concentration measured is less than 80 percent of the range of the tube. If the maximum range of the tube is greater than the release concentration defined in (3), the concentration measured is at least 20 percent of the maximum range of the tube.

(b) The tube is used in accordance with the manufacturer’s guidelines.

(c) At least 2 samples taken at least 5 minutes apart shall demonstrate that the following condition is satisfied prior to uncontrolled venting:

The measured contaminant concentration (ppmv) is less than the release concentration, where:

Release Concentration = [10,000] * mole fraction of the total air contaminants present that can be detected by the tube.

(d) The mole fraction may be estimated based on process knowledge. The release concentration and basis for its determination shall be recorded.

(e) Records shall be maintained of the tube type, range, measured concentrations, and time the samples were taken.

(3) Lower explosive limit measured with a lower explosive limit detector.

(a) The detector shall be calibrated monthly with a certified propane gas standard at 50 percent of the LEL for propane. Records of the calibration date and time and the calibration result (pass/fail) shall be maintained.

(b) A daily functionality test shall be performed on each with a certified gas standard at 50% of the LEL for propane. The LEL detector shall read no lower than 90 percent of the calibration gas certified value. Records, including the date/time and the test results shall be maintained.

(c) A certified methane gas standard equivalent to 50% percent of the LEL for propane may be used for calibration and functionality tests provided that the LEL response is within 95 percent of that for propane.

(4) As an alternative to an instrument/detector, the analysis may be conducted in a laboratory. Bag samples of the gas discharged may be drawn and taken to a Formosa laboratory to be analyzed by gas chromatography (GC). A minimum of two bag samples shall be drawn approximately ten minutes apart. A Tedlar bag, or a bag appropriate for the material to be sampled, shall be used and shall have a valve to seal gas in the bag. The samples shall be drawn as follows:

(a) The sample point on the equipment being cleared shall be purged sufficiently to ensure a representative sample at the sample valve.

(b) The sample bag shall be connected directly to the sample valve.

(c) The sample valve and sample bag shall be opened to allow the bag to fill to approximately 80% of capacity. The sample connections shall be fitted such that no air is drawn into the sample bag.

(d) The two valves shall then be closed to seal the sample in the bag.

(e) The sample bag shall then be disconnected and placed in a dark container out of direct sunlight for transport to the analyzer.

(f) This process is repeated to collect additional samples.

(g) The sample shall be analyzed within 12 hours of collection.

(h) The laboratory GC shall meet or exceed the requirements of 40 CFR 60, Appendix A, Method 18 Sections 6 (Equipment and Supplies), 7 (Reagents and Standards), 9 (Quality Control), and 10 (Calibration and Standards). The sample shall be analyzed per Section 8.2.1.1.2 of Method 18, except the analysis does not need to be performed in triplicate. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.

29. The following requirements apply to vacuum and air mover truck operations to support planned MSS at this site. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psi at 95°F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.

A. The fill line intake shall be equipped with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.

B. A daily record containing the information identified below is required for each vacuum truck in operation at the site each day.

(1) Prior to initial use, identify any liquid in the truck and the truck identifier (bill of lading or other unique identifier). Record the liquid level and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system. After each liquid transfer, identify the liquid transferred and document that the VOC partial pressure is less than 0.50 psi if the vacuum exhaust is not routed to a control device or a controlled recovery system.

(2) For each liquid transfer made with the vacuum operating, record the duration of any periods when air may have been entrained with the liquid transfer. The reason for operating in this manner and whether a "duckbill" or equivalent was used shall be recorded. Short, incidental periods, such as those necessary to walk from the truck to the fill line intake, do not need to be documented.

(3) If the vacuum truck pump exhaust is controlled with a control device other than an engine or oxidizer, records shall be maintained of VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and at least every hour during each transfer, measured using an instrument meeting the requirements of Special Condition No. 28.A(1)(c).

(4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.

C. The permit holder shall determine the vacuum truck emissions each month using the daily vacuum truck records and the calculation methods utilized in the permit application. If records of the volume of liquid transferred for each pick-up are not maintained, the emissions shall be determined using the physical properties of the liquid vacuumed with the greatest potential emissions. Rolling 12-month vacuum truck emissions shall also be determined on a monthly basis.

D. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psi, this shall be recorded when the truck is unloaded or leaves the plant site and the emissions may be estimated as the maximum potential to emit for a truck in that service as documented in the permit application. The recordkeeping requirements in Paragraphs A through D of this condition do not apply.

30. Bag filter maintenance shall be performed in a manner to minimize particulate matter emissions and minimize down time.

31. MSS activities represented in the permit application may be authorized under permit by rule only if the procedures, emission controls, monitoring, and recordkeeping are the same as those required by this permit.

32. Control devices required by this permit for emissions from planned MSS activities are limited to those types identified in Special Condition 33. Control devices shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. Each device used must meet all the requirements identified for that type of control device.

33. Controlled recovery systems identified in this permit shall be directed to an operating process or to a collection system that is vented through a control device (EPN PE3-TEMP) meeting the requirements of this permit condition.

A. Carbon Adsorption System (CAS)

(1) The CAS shall consist of 2 carbon canisters in series with adequate carbon supply for the emission control operation.

(2) The CAS shall be sampled downstream of the first can and the concentration recorded at least once every hour of CAS run time to determine breakthrough of the VOC. The sampling frequency may be extended using either of the following methods:

(a) It may be extended to up to 30 percent of the minimum potential saturation time for a new can of carbon. The permit holder shall maintain records including the calculations performed to determine the minimum saturation time.

(b) The carbon sampling frequency may be extended to longer periods based on previous experience with carbon control of a MSS waste gas stream. The past experience must be with the same VOC, type of facility, and MSS activity. The basis for the sampling frequency shall be recorded. If the VOC concentration on the initial sample downstream of the first carbon canister following a new polishing canister being put in place is greater than 100 ppmv above background, it shall be assumed that breakthrough occurred while that canister functioned as the final polishing canister and a permit deviation shall be recorded.

(c) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 28.A(1)(c).

(d) Breakthrough is defined as the highest measured VOC concentration at or exceeding 100 ppmv above background. 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 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.

(e) Records of CAS monitoring shall include the following:

i. Sample time and date.

ii. Monitoring results (ppmv).

iii. Canister replacement log.

(3) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30% of the minimum potential saturation time. The permit holder shall maintain records for these systems, including the calculations performed to determine the saturation time. The time limit on carbon canister service shall be recorded and the expiration date attached to the carbon can.

B. Thermal Oxidizer (both permanent and temporary systems)

(1) The thermal oxidizer firebox exit temperature shall be maintained at not less than 1400°F and waste gas flows shall be limited to assure at least a 0.5 second residence time in the fire box while waste gas is being fed into the oxidizer.

(2) The thermal oxidizer exhaust temperature shall be continuously monitored and recorded when waste gas is directed to the oxidizer. The temperature measurements shall be made at intervals of six minutes or less and recorded at that frequency.

The temperature measurement device shall be installed, calibrated, and maintained according to accepted practice and the manufacturer's specifications. The device shall have an accuracy of the greater of ±0.75 percent of the temperature being measured expressed in degrees Celsius or ±2.5ºC.

C. Internal Combustion Engine.

(1) The internal combustion engine shall have a VOC destruction efficiency of at least 99 percent.

(2) The engine must have been stack tested with butane to confirm the required destruction efficiency within the past 12 months. VOC shall be measured in accordance with the applicable United States Environmental Protection Agency (EPA) Reference Method during the stack test and the exhaust flow rate may be determined from measured fuel flow rate and measured oxygen concentration. A copy of the stack test report shall be maintained with the engine. There shall also be documentation of acceptable VOC emissions following each occurrence of engine maintenance which may reasonably be expected to increase emissions including oxygen sensor replacement and catalyst cleaning or replacement. Stain tube indicators specifically designed to measure VOC concentration shall be acceptable for this documentation, provided a hot air probe or equivalent device is used to prevent error due to high stack temperature, and three sets of concentration measurements are made and averaged. Portable VOC analyzers meeting the requirements of Special Condition No. 28.A(1)(c) are also acceptable for this documentation.

(3) The engine shall be operated with an oxygen sensor-based air-to-fuel ratio (AFR) controller. Documentation for each AFR controller that the manufacturer's, or supplier's recommended maintenance has been performed, including replacement of the oxygen sensor as necessary for oxygen sensor-based controllers shall be maintained with the engine. The oxygen sensor shall be replaced at least quarterly in the absence of a specific written recommendation.

D. The plant flare system (EPNs PE3-10 and PE3-15), other plant flare systems or temporary flare. **(09/23)**

E. A liquid scrubbing system may be used upstream of carbon adsorption. A single carbon can or a liquid scrubbing system may be used as the sole control device if the requirements below are satisfied.

(1) The exhaust to atmosphere shall be monitored continuously and the VOC concentration recorded at least once every 15 minutes when waste gas is directed to the scrubber.

(2) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition No. 28.A(1)(c).

(3) An alarm shall be installed such that an operator is alerted when outlet VOC concentration exceeds 100 ppmv above background. The MSS activity shall be stopped as soon as possible when the VOC concentration exceeds 100 ppmv above background for more than one minute. The date and time of all alarms and the actions taken shall be recorded.

F. A closed loop refrigerated vapor recovery system

(1) The vapor recovery system shall be installed on the facility to be degassed using good engineering practice to ensure air contaminants are flushed from the facility through

the refrigerated vapor condensers and back to the facility being degassed. The vapor recovery system and facility being degassed shall be enclosed except as necessary to insure structural integrity (such as roof vents on a floating roof tank).

(2) VOC concentration in vapor being circulated by the system shall be sampled and recorded at least once every 4 hours at the inlet of the condenser unit with an instrument meeting the requirements of Special Condition No. 28.A(1)(c).

(3) The quantity of liquid recovered from the tank vapors and the tank pressure shall be monitored and recorded each hour. The liquid recovered must increase with each reading and the tank pressure shall not exceed one inch water pressure while the system is operating.

Recordkeeping

34. The permit holder shall maintain the records required by this permit electronically or in hard copy format for at least five years. These records shall be used to demonstrate compliance with the Special Conditions and the limits specified in the MAERT.

Date: September 22, 2023

Permit Numbers 127838 and PSDTX1588M1

Attachment A

Inherently Low Emitting Activities

Activity	Emissions			
	VOC	NO_x	CO	PM
Baghouse, Bagfilter and Cyclone Maintenance				x
Blower Maintenance	x			
Column & Tower Maintenance	x	x	x	
Dryer Maintenance	x	x	x	
Extruder Maintenance	x			
Filter/Strainer Maintenance and Replacement	x	x	x	
Thermal Oxidizer Curing & Maintenance		x	x	
Small Silo Maintenance				x
Transmitter Maintenance (including high pressure transmitters)	x	x	x	
Miscellaneous ILE Activities	x			
Solid Feed System Maintenance				x

Dated: November 9, 2016

Permit Numbers 127838 and PSDTX1588M1

Attachment B

Routine Maintenance Activities

Piping repair, replacement and maintenance (including fugitive components)

Pump maintenance

Reactor maintenance

Large silo maintenance

Compressor maintenance

Heat exchanger equipment maintenance

Drum and separator maintenance

Silo Maintenance and other process vessel maintenance (e.g., seal & feed pots, surge tanks, blow tanks, storage tanks)

Dated: November 9, 2016

Permit Numbers 127838 and PSDTX1588M1

Attachment C

MSS Activity Summary

Facilities	Description	Emissions Activity	EPN
all process units and tanks	process unit and tank shutdown/depressurize/purge/drain	vent to flare or temporary control device	PE3-10, PE3-15, PE3-TEMP
all process units	process unit open to atmosphere	vent to atmosphere	PE3-MAINT
all process units	process unit startup	vent to flare or temporary control device	PE3-10, PE3-15, PE3-TEMP
all facilities	preparation for facility/component repair/replacement/maintenance	vent to flare or temporary control device	PE3-10, PE3-15, PE3-TEMP
all facilities	open to atmosphere for facility/component repair/replacement/maintenance	vent to atmosphere	PE3-MAINT
all facilities	Return to service after facility/component repair/replacement/maintenance	vent to flare or temporary control device	PE3-10, PE3-15, PE3-TEMP
all tanks	tank cleaning	cleaning activity	PE3-TEMP
see Attachment A	miscellaneous low emitting activities	see Attachment A	PE3-MAINT

Dated: September 22, 2023

Emission Sources - Maximum Allowable Emission Rates

Permit Numbers 127838 and PSDTX1588M1

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 (4)
PE3-01	Dry Catalyst Filter	PM	<0.01	<0.01
		PM_{10}	<0.01	<0.01
		$PM_{2.5}$	<0.01	<0.01
PE3-02A	Elutriator Cyclone A	PM	0.40	1.75
		PM_{10}	0.13	0.56
		$PM_{2.5}$	0.03	0.15
		VOC	0.22	(6)
PE3-02B	Elutriator Cyclone B	PM	0.40	1.75
		PM_{10}	0.13	0.56
		$PM_{2.5}$	0.03	0.15
		VOC	0.22	(6)
PE3-03	Powder Surge Hopper Filter	PM	0.01	0.03
		PM_{10}	0.01	0.03
		$PM_{2.5}$	0.01	0.03
		VOC	0.15	0.66
PE3-04	Powder Feeder Filter	PM	<0.01	0.02
		PM_{10}	<0.01	0.02
		$PM_{2.5}$	<0.01	0.02
		VOC	0.10	0.44
PE3-05	Additive Hopper Filter	PM	0.01	0.02
		PM_{10}	0.01	0.02
		$PM_{2.5}$	0.01	0.02
PE3-06	Additive Feeder Filter	PM	<0.01	0.01
		PM_{10}	<0.01	0.01

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		$PM_{2.5}$	<0.01	0.01
PE3-07	Pellet Dryer Cyclone	PM	0.62	2.73
		PM_{10}	0.01	0.03
		$PM_{2.5}$	<0.01	0.01
		VOC	0.97	(6)
PE3-08A	Product Silo A Filter	PM	0.33	0.73
		PM_{10}	0.33	0.73
		$PM_{2.5}$	0.33	0.73
		VOC	0.91	(6)
PE3-08B	Product Silo B Filter	PM	0.33	0.73
		PM_{10}	0.33	0.73
		$PM_{2.5}$	0.33	0.73
		VOC	0.91	(6)
PE3-10, PE3-15	Elevated Flare or Enclosed Ground Flare Hourly CAP	CO (Elevated Flare Option)	58.52	-
		NO_x (Elevated Flare Option)	11.36	-
		CO (EGF Option)	92.00	-
		NO_x (EGF Option)	23.27	-
		SO_2	<0.01	-
		VOC	148.05	-
PE3-10, PE3-15	Elevated Flare or Enclosed Ground Flare Annual CAP	CO	-	7.49
		NO_x	-	2.64
		SO_2	-	0.01
		VOC	-	9.74
PE3-11A, PE3-11B, HEX-02	Thermal Oxidizers A & B, Hexene Plant Thermal Oxidizer	NO_x	2.53	4.12
		PM	0.31	0.51
		PM_{10}	0.31	0.51
		$PM_{2.5}$	0.31	0.51
		CO	3.48	5.66

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
		SO_2	0.02	0.01
		VOC	0.93	2.30
PE3-12	PE3 Cooling Tower (5)	Chlorine Compounds	<0.01	<0.01
		PM	1.53	4.29
		PM_{10}	0.36	1.56
		$PM_{2.5}$	<0.01	0.01
		VOC	1.18	5.17
PE3-13	Fugitives (5)	Cl_2	<0.01	0.02
		VOC	12.03	52.68
PE3-14	Extruder Feed Hopper Filter	PM	<0.01	0.01
		PM_{10}	<0.01	0.01
		$PM_{2.5}$	<0.01	0.01
		VOC	0.03	0.15
PE3-MAINT	PE3 Maintenance Fugitives	VOC	79.04	0.42
		PM	11.96	0.05
		PM_{10}	6.52	<0.01
		$PM_{2.5}$	6.52	<0.01
PE3-10, PE3-15, PE3-TEMP	PE3 Flare System or Temporary Control Device (PE3 MSS Contribution) Hourly CAP	VOC	506.36	-
		NO_x (Elevated Flare Option)	49.04	-
		CO (Elevated Flare Option)	278.85	-
		NO_x (EGF Option)	99.51	-
		CO (EGF Option)	437.51	-
PE3-10, PE3-15, PE3-TEMP	PE3 Flare System or Temporary Control Device (PE3 MSS Contribution) Annual CAP	VOC	-	4.13
		NO_x	-	2.24
		CO	-	18.81
PE3-CAP	Cap for Downstream Pellet Handling VOCs	VOC (6)	-	10.13

(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.

Emission Sources - Maximum Allowable Emission Rates

(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO_2 - sulfur dioxide
PM - total particulate matter, suspended in the atmosphere, including PM_{10} and $PM_{2.5}$, as represented
PM_{10} - total particulate matter equal to or less than 10 microns in diameter, including $PM_{2.5}$, as represented
$PM_{2.5}$ - particulate matter equal to or less than 2.5 microns in diameter
CO - carbon monoxide
Cl_2 - chlorine
Chlorine Compounds - hypochlorous acid and hydrogen chloride
EGF - Enclosed Ground Flare

(4) Compliance with annual emission limits (tons per year) is based on a 12 month rolling period.
(5) Emission rate is an estimate and is enforceable through compliance with the applicable special condition(s) and permit application representations.
(6) EPN PE3-CAP is representative of the annual cap for downstream pellet handling VOC emissions of the indicated EPNs.

Date: September 22, 2023