

**From:** [Randy Ammons](#)  
**To:** [REDACTED]  
**Cc:** [OCE](#)  
**Subject:** Re: Enforcement Discretion - Phillips 66 Borger Refinery FCCU Shutdown Due to COVID-19  
**Date:** Friday, April 10, 2020 10:42:52 AM  
**Attachments:** [image001.png](#)  
[image002.png](#)

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Good morning Mr. Hartman.

The TCEQ has received your request for enforcement discretion. Your request for enforcement discretion to exceed the permitted hours of operation of the Fluidized Catalytic Cracking Unit without the Electrostatic Precipitator allowed by Refinery MSS Permit 80799 Special Condition 17(A) is approved for one 140-hour shut down/start-up during the current 12-month rolling period in addition to the one the refinery has already conducted. Any unauthorized emissions must be reported in accordance with Title 30 TAC §101. The TCEQ is committed to working with you as we respond to the COVID-19 pandemic. If you have any questions or if new information becomes available, please feel free to contact us at any time.

Please remember that while the TCEQ may give enforcement discretion for state rules, the EPA may still take action if violations of federal rules are documented.

Please continue to keep us updated as conditions change.

The TCEQ will revisit this issue at the appropriate time and reserves the right to withdraw this approval.

Regards,

Randy J. Ammons  
North Central and West Texas Area Director  
Texas Commission on Environmental Quality

**From:** Hartman, Scott A <[REDACTED]>  
**Sent:** Thursday, April 9, 2020 12:58 PM  
**To:** Saied Ashraf <[saied.ashraf@tceq.texas.gov](mailto:saied.ashraf@tceq.texas.gov)>; OCE <[OCE@tceq.texas.gov](mailto:OCE@tceq.texas.gov)>; Ramiro Garcia <[ramiro.garcia@tceq.texas.gov](mailto:ramiro.garcia@tceq.texas.gov)>  
**Cc:** Keys, Sandy D <[REDACTED]>  
**Subject:** Enforcement Discretion - Phillips 66 Borger Refinery FCCU Shutdown Due to COVID-19

This submission is being made after discussion with our regulator inspector at the TCEQ Region 1 Office:

**1. Concise statement supporting request for enforcement discretion:**

Phillips 66 Company, the Operator of the WRB Borger Refinery, is **requesting enforcement discretion for exceeding the permitted hours of operation** of the Fluidized Catalytic Cracking Unit (FCCU) without the Electrostatic Precipitator (ESP) allowed by Refinery MSS Permit 80799 Special Condition 17(A) (inserted below). For safety reasons, the ESPs are not operated during periods of FCCU shutdown or startup. The permitted number of hours of operation without the ESPs engaged is 140 hours in a rolling 12-month period which is the amount of hours required for safe shutdown and startup.

However, current virus-driven market conditions necessitate reduced production. Specially as a direct result of the COVID-19 virus, there is lower gasoline demand in the midcontinent region supplied by the Borger Refinery. Terminal tanks utilized by the refinery are nearly full requiring reduced production rates. Therefore, the Refinery developed a plan to shut down the Unit 29 FCCU. However, the Refinery has already conducted one planned Unit 29 FCCU shutdown and startup in the current 12-month rolling period and so has no remaining authorized shutdown/startup hours.

The refinery is requesting enforcement discretion for the numbers of hours of FCCU operation without the ESP engaged necessitated by this extra shutdown and startup. This was discussed with the TCEQ regional office which did not have concerns about this shutdown and startup and which provided the information on seeking enforcement discretion. Specific facts:

- Borger shut down Unit 29 FCCU on April 1<sup>st</sup>. During the shutdown the unit operated for 27.5 hours without the ESP engaged.
- Unit 29 FCCU is projected to start up after market conditions improve. The refinery anticipates safe startup will necessitate an additional 112.5 hours of operation without the ESP engaged. Therefore the Borger Refinery requests enforcement discretion for operation for 140 hours without the ESP engaged during 2020.
- The Borger Refinery took all reasonable efforts to minimize the hours of operation without the ESP engaged for a safe shutdown of the unit and will likewise strive to minimize the time during which the ESP is not engaged when the unit is started up. The refinery will maintain careful records of the hours of operation without the EPS and of the best efforts to comply with the MSS permit.

**2. Anticipated duration of need for enforcement discretion**

The anticipated duration for which enforcement discretion is requested is through the end of Unit 29's startup, projected to be sometime before 12/31/2020.

**3. Citation of rule / permit provision for which enforcement discretion is requested**

Condition 17(A) from the facilities MSS Permit 80799 (attached):

**17. Fluidized Catalytic Cracking Units (FCCUs) 29 and 40 shall comply with the following requirements. (07/19)**

- A. The FCCUs may be operated during startup and shutdown, as defined in paragraphs C and D of this condition, without the use of the ESP during times when the ESP is deemed to be a safety hazard due to elevated levels of CO. Such instances of operation without the ESP shall be limited to planned events not exceeding 140 hours for Unit 29 and 140 hours for Unit 40 during any rolling 12-month period.



Scott Hartman

Senior Environmental Consultant, Environmental

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Tech Center 232 | Borger, TX 79008

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Jon Niermann, *Chairman*  
Emily Lindley, *Commissioner*  
Toby Baker, *Executive Director*



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

*Protecting Texas by Reducing and Preventing Pollution*

July 31, 2019

MR DARREL HAIL  
REFINERY MANAGER  
PHILLIPS 66 COMPANY  
PO BOX 271  
BORGER TX 79008-0271

Re: Permit Amendment  
Permit Number: 80799  
Expiration Date: May 24, 2020  
Phillips 66 Company  
Borger Refinery  
Borger, Hutchinson County  
Regulated Entity Number: RN102495884  
Customer Reference Number: CN604065912

Dear Mr. Hail:

Phillips 66 Company has requested an amendment to Permit Number 80799.

In accordance with Title 30 Texas Administrative Code (TAC) §116.116(b) and §116.160, Permit Number 80799 is hereby amended. Enclosed are revised general conditions, special conditions, and a maximum allowable emission rates table.

If you need further information or have any questions, please contact Ms. Jett Koen at (512) 239-1327 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.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Wilson".

Michael Wilson, P.E., Director  
Air Permits Division  
Office of Air

Enclosure

cc: Air Section Manager, Region 1 - Amarillo

Project Number: 282736



## Texas Commission on Environmental Quality Air Quality Permit

A Permit Is Hereby Issued To  
**PHILLIPS 66 COMPANY**  
Authorizing the Construction and Operation of  
**Borger Refinery**  
Located at **Borger, Hutchinson County, Texas**  
Latitude 35° 41' 58" Longitude -101° 21' 35"

Permit: 80799

Amendment Date: July 31, 2019

Expiration Date: May 24, 2020

  
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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)]<sup>1</sup>
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)]<sup>1</sup>
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.<sup>1</sup>

<sup>1</sup> Please be advised that the requirements of this provision of the general conditions may not be applicable to greenhouse gas emissions.

## Special conditions

Permit Number 80799

1. This permit authorizes emissions from those points listed in the attached table entitled "Emission Sources - Maximum Allowable Emission Rates" (MAERT) and the facilities covered by this permit are authorized to emit subject to the emission rate limits on the MAERT table and other requirements specified in the special conditions.

Startup and shutdown emissions due to the activities identified in Special Condition 2 are authorized from facilities and emission points listed in Attachment D provided the facility and emissions are compliant with Special Condition 12 of this permit.

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

The chemical and cleaners identified in Attachment A-1 are authorized to be used in support of MSS at the facilities identified in Attachment D to this permit. Emissions of these chemicals and cleaners shall be determined based on warehouse inventory tracking or equivalent for that month. Any product released for use shall be assumed to be used that month. Attachment A-2 identifies the inherently low emitting MSS activities that may be performed at the refinery. Emissions from activities identified in Attachment A-2 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-2 must be revalidated annually. This revalidation shall consist of the estimated emissions for each type of activity and the basis for that emission estimate.

Activities limited to equipment MSS, 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. In lieu of using the emissions identified in the permit application, the permit holder may record the information identified in paragraph A through E below.

The performance of each 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 physical location at which emissions from the MSS activity occurred, including the emission point number and common name for the point at which the emissions were released into the atmosphere;
- B. The type of planned maintenance, startup, or shutdown 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. **(9/11)**

3. Process units and facilities, with the exception of those identified in Special Conditions 6, 7, 9 and 10, shall be depressurized, emptied, degassed, opened to atmosphere, and placed in service in accordance with the following requirements. **(4/19)**

- A. Equipment that only contains material that is liquid with VOC partial pressure less than 0.50 psia at the normal process temperature or actual temperature may be opened to atmosphere and drained in accordance with paragraph C of this special condition without depressurizing or degassing to a control device. If the actual liquid temperature is used, the temperature of the liquid must be verified and recorded. The actual temperature used for determining vapor pressure may not be less than 95°F.
- B. If mixed phase materials must be removed from process equipment, the cleared material shall be routed to a knockout drum or equivalent to allow for managed initial phase separation. If the VOC partial pressure is greater than 0.50 psia at either the normal process temperature or actual temperature, any vents in the system must be routed to a control device or a controlled recovery system. If the actual liquid temperature is used, the temperature of the liquid must be verified and recorded. The actual temperature used for determining vapor pressure may not be less than 95°F. Control must remain in place until degassing has been completed or the system is no longer vented to atmosphere.
- C. All liquids from process equipment or storage vessels must be removed to the maximum extent practical prior to opening equipment to commence degassing and/or maintenance. Liquids must be drained into a closed vessel or a process drain operating as a controlled recovery system 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. After draining is complete, empty open pans may remain in use for housekeeping reasons to collect incidental drips.
- D. If the VOC partial pressure is greater than 0.50 psia at the normal process temperature or actual temperature, facilities shall be degassed using good engineering practice to 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. If the actual liquid temperature is used, the temperature of the liquid must be verified and recorded. The actual temperature used for determining vapor pressure may not be less than 95°F. The control device or recovery system utilized shall be recorded with the estimated emissions from controlled and uncontrolled degassing calculated using the methods that were used to determine allowable emissions for the permit application.
  - (1) For MSS activities identified in Attachments A-2 and B, 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) (or equivalent) per the site safety procedures.
  - (2) The locations and/or identifiers where the purge gas or steam enters the process equipment or storage vessel and the exit points for the exhaust gases shall be recorded. (PFD's, P&ID's, or Turnaround and Inspection (T&I) plans may be used to demonstrate compliance with the requirement). Documented refinery 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. 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 or for a sufficient period of time in accordance with the applicable site operating procedures 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 4. 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 until the VOC concentration is less than 10,000 ppmv or 10% of the LEL. Documented site 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.

- E. Gases and vapors with VOC partial pressure greater than 0.50 psia 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 lbs of air contaminant to be vented to atmosphere during shutdown or startup, as applicable.

Except when identified for an activity on Attachment A-2, all instances of venting directly to atmosphere per Special Condition 3.E must be documented when occurring as part of any MSS activity. The emissions associated with venting without control must be included in the work order or equivalent for those planned MSS activities identified in Attachment B. **(9/11)**

4. Air contaminant concentration shall be measured using an instrument/detector meeting one set of requirements specified below.

- 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. The calibration gas used and its concentration, and the vapor to be sampled and its approximate response factor (RF), 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:

$$\text{VOC Concentration} = \text{Concentration as read from the instrument} * \text{RF}$$

- (2) 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 and the greatest VOC concentration recorded. The highest measured VOC concentration shall not exceed the specified VOC concentration limit prior to uncontrolled venting.
- (3) If a TVA-1000 series FID analyzer calibrated with methane is used to determine the VOC concentration, a measured concentration of 34,000 ppmv may be considered equivalent to 10,000 ppmv as VOC.

- B. Colorimetric gas detector tubes may be used to determine air contaminant concentrations if they are used in accordance with the following requirements.

- (1) 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.
- (2) The tube is used in accordance with the manufacturer's guidelines.
- (3) At least 2 samples taken at least 5 minutes apart must satisfy the following prior to uncontrolled venting:



Measured contaminant concentration (ppmv) < release concentration.

Where the release concentration is:

10,000 \* mole fraction of the total air contaminants present that can be detected by the tube.

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

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

- C. Lower explosive limit (LEL) shall be measured with a lower explosive limit detector, in accordance with the following requirements:
- (1) The detector shall be calibrated monthly with a certified pentane gas standard at 25% of the lower explosive limit (LEL) for pentane. Records of the calibration date/time and calibration result (pass/fail) shall be maintained.
  - (2) A daily functionality test shall be performed on each detector using the same certified gas standard used for calibration. The LEL monitor shall read no lower than 90% of the calibration gas certified value. Records, including the date/time and test results, shall be maintained.
  - (3) A certified methane gas standard equivalent to 25% of the LEL for pentane may be used for calibration and functionality tests provided that the LEL response is within 95% of that for pentane.
- D. For measuring benzene breakthrough on Carbon Adsorption Systems in Special Condition 13.A(4), a portable gas chromatograph using a flame ionization detector or photo ionization detector may be used. Alternatively, a photo-ionization detector equipped with a benzene separation tube consistent with manufacturer requirements may be used. The monitor shall have the sensitivity and specificity to quantify low level benzene concentrations. The monitor device shall be calibrated within 24 hours of use with a certified calibration gas containing ~5 ppm benzene. Records of the calibration date/time and calibration result shall be maintained.
5. This condition applies only to piping and components subject to leak detection and repair monitoring requirements identified in other NSR permits. 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;
- A. A cap, blind flange, plug, or second valve must be installed on the line or valve; or
  - B. The open-ended valve or line shall be monitored once for leaks above background for a plant or unit turnaround lasting up to 45 days with an approved gas analyzer and the results recorded. For all other situations, the open-ended valve or line shall be monitored once by the end of the 72 hours period following the creation of the open ended line and monthly thereafter with an approved gas analyzer and the results recorded. For turnarounds and all other situations, leaks are indicated by readings of 500 ppmv and must be repaired within 24 hours or a cap, blind flange, plug, or second valve must be installed on the line or valve. **(9/11)**
6. This permit authorizes emissions from EPN MSS-TANKS for the storage tanks identified in the Attachment D during planned floating roof landings. Except for periods in which the tank vapor space is routed to a control device meeting the requirements of Special Condition 13, tank roofs

may only be landed for changes of tank service or tank inspection/maintenance as identified in the permit application. Tank change of service includes landings to accommodate seasonal RVP spec changes and landings to correct off spec material that cannot be blended into finished product tanks. Emissions from filling tanks with landed roofs must be directed to a control device meeting the requirements of Special Condition 13 unless the tank has been degassed and cleaned. Tank roof landings include all operations when the tank floating roof is on its supporting legs. These emissions are subject to the maximum allowable emission rates indicated on the MAERT. The following requirements apply to tank roof landings.

- A. The tank liquid level shall be continuously lowered after the tank floating roof initially lands on its supporting legs until the tank has been drained to the maximum extent practicable without entering the tank. Liquid level may be maintained steady for a period of up to two hours if necessary to allow for valve lineups and pump changes necessary to drain the tank. This requirement does not apply where the vapor under a floating roof is routed to control during this process.

This requirement and the requirement of Special Condition 6 of directing emissions to a control device do not apply if the level is lowered to allow for maintenance that is expected to be completed in less than 24 hours. In that case, the tank must be filled and the roof floated within 24 hours of landing the roof and the evolution documented in accordance with Special Condition 6.E.

- B. If the VOC partial pressure of the liquid previously stored in the tank is greater than 0.50 psia at 95°F, tank refilling or degassing of the vapor space under the landed floating roof must begin within 24 hours after the tank has been drained unless the vapor under the floating roof is routed to control or a controlled recovery system during this period. Floating roof tanks with liquid capacities less than 100,000 gallons may be degassed without control if the VOC partial pressure of the standing liquid in the tank has been reduced to less than 0.02 psia prior to ventilating the tank. Controlled degassing of the vapor space under landed roofs shall be completed as follows:
- (1) Any gas or vapor removed from the vapor space under the floating roof must be routed to a control device or a controlled recovery system and controlled degassing must be maintained until the VOC concentration is less than 10,000 ppmv or 10% of the LEL. The locations and identifiers of vents other than permanent roof fittings and seals, control device or controlled recovery system, and controlled exhaust stream shall be recorded. There shall be no other gas/vapor flow out of the vapor space under the floating roof when degassing to the control device or controlled recovery system.
  - (2) The vapor space under the floating roof shall be vented using good engineering practice to ensure air contaminants are flushed out of the tank through the control device or controlled recovery system to the extent allowed by the storage tank design until the VOC concentration is less than 10,000 ppmv.
  - (3) A volume of purge gas or air equivalent to twice the volume of the vapor space under the floating roof must have passed through the control device or into a controlled recovery system, before the vent stream may be sampled to verify acceptable VOC concentration. The measurement of purge gas volume shall not include any make-up air introduced into the control device or recovery system. Documented refinery procedures used to de-inventory equipment control devices 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. The VOC sampling and analysis shall be performed as specified in Special Condition 4.
  - (4) 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.

- (5) Degassing must be performed every 24 hours unless there is no standing liquid in the tank or the VOC partial pressure of the remaining liquid in the tank is less than 0.15 psia.
- C. The tank shall not be opened or ventilated without control, except as allowed by (1) or (2) below until one of the criteria in paragraph D of this condition is satisfied.
- (1) Minimize air circulation in the tank vapor space.
    - a. One manway may be opened to allow access to the tank to remove or de-volatilize the remaining liquid. Other manways or access points may be opened as necessary to remove or de-volatilize the remaining liquid. Wind barriers shall be installed at all open manways and access points to minimize air flow through the tank.
    - b. Access points shall be closed when not in use.
  - (2) Minimize time and VOC partial pressure.
    - a. The VOC partial pressure of the liquid remaining in the tank shall not exceed 0.044 psia as documented by the method specified in paragraph (1) of this condition;
    - b. Blowers may be used to move air through the tank without emission control at a rate not to exceed 17,000 cfm for no more than 24 hours. All standing liquid shall be removed from the tank during this period.
    - c. Records shall be maintained of the blower circulation rate, the duration of uncontrolled ventilation, and the date and time all standing liquid was removed from the tank.
- D. The tank may be opened without restriction and ventilated without control after all standing liquid has been removed from the tank or the liquid in the tank has a VOC partial pressure less than 0.02 psia. These criteria may be demonstrated in any one of the following ways.
- (1) Low VOC partial pressure liquid that is soluble with the liquid previously stored may be added to the tank to lower the VOC partial pressure of the liquid mixture remaining in the tank to less than 0.02 psia. The estimated volume of liquid remaining in the drained tank and the volume and type of liquid added shall be recorded. The liquid VOC partial pressure may be estimated based on this information and engineering calculations.
  - (2) If water or other liquid is added or sprayed into the tank to remove standing VOC, acceptable vapor pressure may be demonstrated using any of the three methods below:
    - a. Take a representative sample of the liquid remaining in the tank and verify no visible sheen using the static sheen test from 40 CFR 435 Subpart A, Appendix 1.
    - b. Take a representative sample of the liquid remaining in the tank and verify hexane soluble VOC concentration is less than 1000 ppmw using EPA Method 1664 (may also use 8260B or 5030 with 8015 from SW-846).
    - c. Stop ventilation and close the tank for at least 24 hours. When the tank manway is opened after this period, verify VOC concentration is less than 1000 ppmv through the procedure in Special Condition 4.

- (3) No standing liquid verified through visual inspection.  
Once the VOC partial pressure is verified less than 0.02 psia, any subsequent/additional water flushes that may be performed do not trigger additional verification. The permit holder shall maintain records to document the method used to release the tank.
- E. Once filling has begun, tanks shall be refilled as rapidly as practicable until the roof is off its legs unless the vapor space below the tank roof is directed to a control device meeting the requirements of Special Condition 13 when the tank is refilled until the roof is floating on the liquid. The control device used and the method and locations used to connect the control device shall be recorded. All vents from the tank being filled must exit through the control device. Only one tank with a landed roof may be filled with light liquid at any time unless the refilling emissions are controlled.
- F. The occurrence of each roof landing and the associated emissions shall be recorded and the rolling 12-month tank roof landing emissions shall be updated on a monthly basis. These records shall include at least the following information:
  - (1) The identification of the tank and emission point number, and any control devices or recovery systems used to reduce emissions;
  - (2) The reason for the tank roof landing;
  - (3) For the purpose of estimating emissions, the date and time of each of the following events:
    - a. The roof was initially landed,
    - b. All liquid was pumped from the tank to the extent practical,
    - c. Degassing commenced,
    - d. All standing liquid was removed from the tank or any transfers of low VOC partial pressure liquid to or from the tank to reduce tank liquid VOC partial pressure to <0.02 psia,
    - e. Degassing ceased,
    - f. Any period the tank is open or ventilated, or liquid is added or removed,
    - g. Refilling commenced, and
    - h. Tank roof off supporting legs, floating on liquid;
  - (4) The estimated quantity of each air contaminant, or mixture of air contaminants, emitted between Events (c) and (h) with the data and methods used to determine it. The emissions associated with roof landing activities shall be calculated using the methods described in Section 7.1.3.2 of AP-42 "Compilation of Air Pollution Emission Factors, Chapter 7 - Storage of Organic Liquids" dated November 2006 and the permit application.
7. Fixed roof storage tanks are subject to the requirements of Special Conditions 6.C and 6.D. Only one tank may be degassed without control at any time. If the ventilation of the vapor space is controlled, the emission control system shall meet the requirements of Special Condition 6.B(1) through 6.B(5). Records shall be maintained per Special Condition 6.F(3)c through 6.F(3)e, and 6.F(4).
8. The following requirements apply to vacuum and air mover truck operations at this site:
  - A. Vacuum pumps and blowers shall not be operated on trucks containing or vacuuming liquids with VOC partial pressure greater than 0.50 psia at 95°F unless the vacuum/blower exhaust is routed to a control device or a controlled recovery system.

- B. When the vacuum pump is operating, equip fill line intake with a “duckbill” or equivalent attachment if the hose end cannot be submerged in the liquid being collected.
  - C. 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. Record the liquid level and document that the VOC partial pressure is less than 0.50 psia 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 psia 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 exhaust is controlled with a control device other than an engine or oxidizer, VOC exhaust concentration upon commencing each transfer, at the end of each transfer, and at least every hour during each transfer shall be recorded, measured using an instrument meeting the requirements of Special Condition 4.
    - (4) The volume in the vacuum truck at the end of the day, or the volume unloaded, as applicable.
  - D. 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.
  - E. If the VOC partial pressure of all the liquids vacuumed into the truck is less than 0.10 psia, 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 Special Condition 8.A through 8.D do not apply.
9. The following requirements apply to frac, or temporary, tanks and vessels used in support of MSS activities.
- A. Except for labels, logos, etc. not to exceed 15% of the tank/vessel total surface area, the exterior surfaces of these tanks/vessels that are exposed to the sun shall be white or aluminum effective May 1, 2013. This requirement does not apply to tanks/vessels that only vent to atmosphere when being filled.
  - B. These tanks/vessels must be covered and equipped with fill pipes that discharge within 6 inches of the tank/vessel bottom. If the VOC partial pressure of the liquid stored is greater than 0.50 psia, the tank vent must be routed to control. Control device monitoring is only required when filling the tank.
  - C. These requirements do not apply to vessels storing less than 25 barrels of liquid that are closed such that the vessel does not vent to atmosphere.
  - D. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all frac tanks during the previous calendar month and the past consecutive 12 month period. The record shall include tank identification number, dates put into and removed from service, control method used, tank capacity and volume of

liquid stored in gallons, name of the material stored, VOC molecular weight, and VOC partial pressure at the estimated monthly average material temperature in psia. Filling emissions for tanks shall be calculated using the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Loading Operations" and standing emissions determined using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

- E. If the tank/vessel is used to store liquid with VOC partial pressure less than 0.10 psia at 95°F, records may be limited to the days the tank is in service and the liquid stored. Emissions may be estimated based upon the potential to emit as identified in the permit application.
10. The raw hydrogen and tail gas streams associated the Unit 41 hydrogen plant startup shall vent to the atmosphere for a maximum of 8 hours (4 hours of raw hydrogen venting, plus 4 hours of tail gas venting). Annually, atmospheric venting during startup is limited to a total of 28 hours of raw hydrogen venting per 12-month period and 28 hours of tail gas venting per 12-month period. **(4/19)**

Compliance with the CO and VOC limits for the venting during startup shall be estimated based on monitored flow rates (MMscf/day) and concentrations of CO and VOC in the vent gas stream from the hydrogen plant and pressure swing absorber (PSA) vent streams.

The flow rate during atmospheric venting during startup shall be determined based on the monitored reformer feed rate (MMscf/day) during startup. Raw hydrogen and tail gas flows shall be based on a monitored reformer feed rate of less than 6 MMscf/day as per the emission calculations in the application.

An onsite composition analyzer shall be used to analyze the vent stream composition of VOC and CO. Samples of the raw hydrogen and tail gas streams associated with the Unit 41 hydrogen plant shall be taken during startup of the Unit 41 hydrogen plant, at least once every six months, provided that a Unit 41 startup occurs during that period. Composition samples shall be used to determine VOC and CO concentrations during the Unit 41 start-up period where the raw hydrogen and tail gas streams associated with the Unit 41 hydrogen plant are not sent to control and are sent to the atmosphere (EPN MSS-U41). Calibration of the composition analyzer shall be pursuant to method ASTM D 2163, or equivalent.

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 02/14/2018). If invalid composition results are obtained, compliance with the CO and VOC limits will be determined based on the measured flow rate and the calculations in the permit amendment application for that period. After four consecutive valid composition samples are obtained, also considering the measured flow rate, and the resulting emission rates determined are in compliance with the CO and VOC MAERT limits (EPN MSS-U41); sampling frequency may be reduced to once every 12 months, provided that a Unit 41 Startup occurs during that period.

11. 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.
12. All permanent facilities must comply with all operating requirements, limits, and representations in other NSR permits during startup and shutdown unless alternate requirements and limits are identified in this permit. Alternate requirements for emissions from routine emission points are identified below.
- A. Combustion units, with the exception of flares and units identified in Special Condition 12.B, at this site are exempt from NO<sub>x</sub> and CO operating requirements identified in special conditions in other NSR permits and the allowable emissions (Permit 9868A) are not binding during planned startup and shutdown if the following criteria are satisfied.

- (1) The emission caps or the maximum allowable emission rates in the permit authorizing the facility are not exceeded.
  - (2) The startup period does not exceed 8 hours in duration and the firing rate does not exceed 75 percent of the design firing rate. The time it takes to complete the shutdown does not exceed 4 hours.
  - (3) Control devices are started and operating properly when venting a waste gas stream.
  - (4) Heaters may be fired at rates not to exceed 20 percent of the design firing rate for up to 24 hours during start-up.
- B. The following limits apply to the operations identified below to start the startup or shutdown of the facilities identified.
- (1) Sulfur Recovery Units (SRUs)
    - a. SRUs shall only be idled when necessary for planned maintenance at the SRU or elsewhere in the refinery.
    - b. The SRU must be turned down as much as possible prior to being shutdown or idled.
    - c. SRU incinerators shall oxidize at least 99.9 percent of the hydrogen sulfide directed to them to sulfur dioxide during the SRU startup and shutdown.
  - (2) Furnace decoking (EPNs 2H1, 2H2, 4H1, 4H2, 5H1, 5H2, 5H3, 5H4, 6H1, 6H2, 6H3, 6H4, 6H5, 7H1-4, 9H1, 10H1, 11H1, 12H1, 19B1-H1, 19B1 H2, 19B2, 19H3, 19H5, 19H6 19H4, 22H1, 26H1, 28H1,29-2, 29H4, 36H1, 40H1, 40H2, 41H1, 42H1, 42H2, 42H3, 50H1, 51H1, 98H1)
  - (3) Flaring for up to 48 hours during GOHDS startup and shutdown.
  - (4) Off gas flaring during Unit 42 shutdown. Off gas shall be directed to the fuel gas system for use as fuel gas until the system pressure is too low for recovery.
  - (5) Flaring during flare gas recovery system shutdown for planned MSS.
  - (6) Hydrogen flaring during hydrogen unit shutdowns.
- C. A record is maintained indicating that the start and end times each of the activities identified above occur and documentation that the requirements for each has been satisfied.
- D. Electrostatic precipitator (ESP) cabinet changes are not authorized by this permit.  
**(07/19)**
13. Control devices required by this permit for emissions from MSS activities are limited to those types identified in this condition. 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.
- Controlled recovery systems identified in this permit shall be directed to an operating refinery process or to a collection system that is vented through a control device 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 down stream 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.
- (3) The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition 4.
  - (4) 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 prior to the next scheduled sample. In lieu of replacing canisters, the flow of waste gas may be discontinued until the canisters are switched. Sufficient new activated carbon canisters shall be available to replace spent carbon canisters such that replacements can be done in the above specified time frame.
  - (5) Records of CAS monitoring shall include the following:
    - a. Sample time and date.
    - b. Monitoring results (ppmv).
    - c. Canister replacement log.
  - (6) Single canister systems are allowed if the time the carbon canister is in service is limited to no more than 30 percent 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.
  - (7) Liquid scrubbers may be used upstream of carbon canisters to enhance VOC capture provided such systems are closed systems and the spent absorbing solution is discharged into a closed container, vessel, or system.

B. Thermal Oxidizer.

- (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. Temperature measurements recorded in continuous strip charts may be used to meet the requirements of this section.



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  $\pm 0.75$  percent of the temperature being measured expressed in degrees Celsius or  $\pm 2.5^{\circ}\text{C}$ .

- (3) As an alternative to Special Condition 13.B(1), the thermal oxidizer may be tested to confirm a minimum 99 wt percent destruction efficiency within the past 12 months. The results of the test will be used to determine the minimum operating temperature and residence time. Stack VOC concentrations and flow rates shall be measured in accordance with applicable United States Environmental Protection Agency (EPA) Reference Methods. A copy of the test report shall be maintained with the thermal oxidizer and a summary of the testing results shall be included with the emission calculations.

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 or propane to confirm the required destruction efficiency within the period specified in part (3) below. 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 4 are also acceptable for this documentation.
- (3) The engine shall be operated and monitored as specified below.
  - a. If the engine is 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. The engine must have been stack tested within the past 12 months in accordance with part (2) of this condition.

The test period may be extended to 24 months if the engine exhaust is sampled once an hour when waste gas is directed to the engine using a detector meeting the requirements of Special Condition 4.A. 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 engine. The concentrations shall be recorded and the MSS activity shall be stopped as soon as possible if the VOC concentration exceeds 100 ppmv above background.

- b. If an oxygen sensor-based AFR controller is not used, the engine 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 engine. 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 engine. The method of VOC sampling and analysis shall be by detector meeting the requirements of Special Condition 4.A. 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 if 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. The engine must have been stack tested within the past 24 months in accordance with part (2) of this condition.

- D. The plant flare system or temporary flare
- (1) The heating value and velocity requirements in 40 CFR 60.18 shall be satisfied during operations authorized by this permit.
  - (2) The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
  - (3) During purging to the flare system with nitrogen, the permit holder will calculate the amount of fuel gas needed to be added at the flare header so that the nitrogen purge and fuel gas meet the requirements of this sub-condition. The calculated and actual flow rates of nitrogen and fuel gas shall be recorded.
- E. The SRU tail gas incinerators to support the shutdown and startup of the SRUs operated in accordance with the requirements in Permit 9868A.
- F. 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 4.A.
  - (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.
- G. 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 4.
- (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.

14. The following requirements apply to capture systems for the plant flare system.

- A. Either conduct a once a month visual, audible, 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. The control device shall not have a bypass, or if there is a bypass for the control device, 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 the position of the valves and the condition of the car seals that prevent flow out the bypass.

These requirements do not apply to high point vent and low point drain valves. A deviation shall be reported if the monitoring or inspections indicate bypass of the control device when required to be in service per this permit.
- C. The date and results of each inspection performed shall be recorded. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. Records shall be maintained documenting the performance and results of the inspections required above, recording each action with the date completed. **(4/19)**

15. No visible emissions shall leave the property due to abrasive blasting.

16. Black Beauty, coal slag, and Garnet Sand may be used for abrasive blasting. The permit holder may also use blast media that meet the criteria below:

- A. The media shall not contain asbestos or greater than 1.0 weight percent crystalline silica.
- B. The weight fraction of any metal in the blast media with a short term effects screening level (ESL) less than 50 micrograms per cubic meter as identified in the most recently published TCEQ ESL list shall not exceed the ESLmetal/1000.
- C. The MSDS for each media used shall be maintained on site.

Blasting media usage and the associated emissions shall be recorded each month and the rolling 12 month total emissions updated.

17. Fluidized Catalytic Cracking Units (FCCUs) 29 and 40 shall comply with the following requirements. **(07/19)**

- A. The FCCUs may be operated during startup and shutdown, as defined in paragraphs C and D of this condition, without the use of the ESP during times when the ESP is deemed to be a safety hazard due to elevated levels of CO. Such instances of operation without the ESP shall be limited to planned events not exceeding 140 hours for Unit 29 and 140 hours for Unit 40 during any rolling 12-month period.

- B. The hourly average CO concentrations shall not exceed 15,000 parts per million by volume dry basis (ppmvd) corrected to 4.50% oxygen during either startup or shutdown.
- C. Startup is defined as the period from startup of air blowers through establishment of a feed rate of 720 barrels per hour.
- D. Shutdown is defined as the period from removal of feed through shutdown of air blowers.
- E. Records shall be maintained at this facility site and made available at the request of personnel from TCEQ or any other air pollution control program having jurisdiction to demonstrate compliance with permit limitations. These records shall be totaled for each calendar month, retained for a rolling 60-month period, and include the following for each unit:
  - (1) Maximum hourly and average event opacity during startups and shutdowns; and
  - (2) Amount of time the ESP is not in operation during startups and shutdowns.

Date: July 31, 2019

ATTACHMENT A-1  
Permit Number 80799  
CHEMICALS AND CLEANERS

The following materials are authorized for use in support of maintenance activities on the facilities located at the site.

Lubricants

Spray lubricants

Rust inhibitors

Degreaser cleaner

Contact cleaner

Starting fluid

Hydraulic jack oil

Thread cutting oil

Anti-seize compound

Coupling grease

Valve lubricant/sealant

Bearing grease

Tapping/cutting fluid

Motor grease

Date: September 12, 2011

ATTACHMENT A-2  
Permit Number 80799  
LOW EMITTING ACTIVITIES

The following low emitting MSS activities are eligible for reduced recordkeeping:

- Replacement of process and analyzer filters/screens
- Calibration of CEMS Analyzers and process instrumentation
- Spare pump startups
- Carbon can replacement
- Tank inspections
- Water washing empty containers, drums, and totes
- Catalyst replacement
- Sample and instrument purging
- Acid and caustic washing
- Blowdowns of machines and natural gas, liquid hydrocarbons, compressed air, and steam lines
- Combustion shutoff devices
- Insulation addition or removal
- Pneumatic starts on reciprocating engines, turbines, or compressors
- Ultrasonic cleaning
- Salt dryer purge to flare

Date: September 12, 2011

ATTACHMENT B  
Permit Number 80799  
ROUTINE MAINTENANCE ACTIVITIES

Valve and Piping Maintenance/Replacement

Pipeline Pigging

Compressor maintenance

Maintenance on pumps

Heat Exchanger Maintenance

Date: September 12, 2011

ATTACHMENT C  
 Permit Number 80799  
 MSS ACTIVITY SUMMARY

Facilities	Description	Emissions Activity	EPN
all process units	process unit shutdown/ depressurize/drain	vent to flare	66FL1 66FL2 66FL3 66FL4 66FL12
all process units	process unit purge/degas/drain	vent to atmosphere	MSS-VES
all process units	process unit startup	vent to flare	66FL1 66FL2 66FL3 66FL4 66FL12
all process units and tanks	preparation for facility/component repair/replacement	vent to flare	66FL1 66FL2 66FL3 66FL4 66FL12
all process units and tanks	preparation for facility/component repair/replacement	vent to atmosphere	MSS-VES MSS-TANKS
all process units and tanks	recovery from facility/component repair/replacement	vent to flare	66FL1 66FL2 66FL3 66FL4 66FL12
all process units and tanks	recovery from facility/component repair/replacement	vent to atmosphere	MSS-VES MSS-TANKS
all process units and tanks	preparation for unit turnaround or facility repair/replacement	remove liquid	MSS-VAC MSS-FRAC MSS-VES MSS-TANKS
SRUs	SRU startup, shutdown, and meltout	startup, shutdown, and meltout	34I1 43I1
furnaces	furnace decoking	decoking	Heaters/ Furnaces
GOHDS Unit	ARD Units startup and shutdown	flare acid gas	66FL12 66FL13 43I1
Units 41 and 42	Unit shutdown	flare acid gas	66FL3 66FL12
flare gas recovery system	flare gas recovery system shutdown for maintenance	flare unrecovered gas	66FL1, 66FL2, 66FL3, 66FL4, and 66FL12.
Hydrogen Unit	Unit shutdown for maintenance	flare hydrogen stream	66FL1 66FL3 66FL12



<b>Facilities</b>	<b>Description</b>	<b>Emissions Activity</b>	<b>EPN</b>
all floating roof tanks	tank roof landing	operation with landed roof	MSS-TANKS
all floating roof tanks	degas of tank with landed roof	controlled degassing	MSS-TANKS
all tanks	tank cleaning	cleaning activity and solvents	MSS-TANKS
see Attachment A-1	chemicals and cleaners	chemicals and cleaners used for maintenance of Attachment D facilities	MSS-CHEM
see Attachment A-2	low emitting activities	low emitting activities	MISC-MSS
all	blasting media	abrasive blasting	MSS-BLAST
Unit 41 Hydrogen Production	process unit startup	vent to atmosphere	MSS-U41
FCCUs	unit startup and shutdown	control emissions per Special Condition 17	29P1 40P1

Date: July 31, 2019

ATTACHMENT D  
Permit Number 80799  
FACILITY LIST

This permit authorizes emissions from the following temporary facilities used to support planned MSS activities at permanent site facilities: frac tanks, containers, vacuum trucks, facilities used for painting or abrasive blasting, portable control devices identified in Special Condition 13, and controlled recovery systems. 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 site facilities listed in this Attachment, and (c) does not operate as a replacement for an existing authorized facility.

This permit authorizes MSS emissions from the units identified below. Facilities are listed by permit following the unit list.

**Units**

Unit 2.2	Hydrodesulphurization Unit (HDS)
Unit 4	Butamer
Unit 5	Pentane Isom
Unit 6	Benzene Hydro and Hexane Isom
Unit 7	Catalytic Reformer
Unit 9	Crude Unit
Unit 10	Crude Unit
Unit 11	Ethane Recovery
Unit 12	Pantex
Unit 19	Hydrodesulphurization (HDS) Unit Reformer
Unit 22	HF Alkylation
Unit 23	Straight Run Fractionation
Unit 25	SZorb
Unit 26	Light Ends Fractionator
Unit 28	Crude Unit
Unit 29	Gas Oil Catalytic Cracking (FCCU)
Unit 32	Desalter Unit
Unit 34	Amine Treater
Unit 35	MDEA Treater
Unit 36	Light Cycle Oil (LCO) Hydrodesulphurization (HDS) Unit
Unit 40	Heavy Oil Catalytic Cracker (FCCU)
Unit 41	Gas Oil Hydrodesulphurization Unit (GOHDS)
Unit 42	Gas Oil Hydrodesulphurization Unit (GOHDS)
Unit 43	Gas Oil Hydrodesulphurization Unit (GOHDS)
Unit 44	Gas Oil Hydrodesulphurization Unit (GOHDS)
Unit 45	Methyl Mercaptan Unit
Unit 50	Coker Unit
Unit 51	Vacuum Unit
Unit 98	H2 Production

**Permit Number 9868A**

NAME	FIN
CRUDE OIL HEATER	10-1
MOL SIEVE REGEN GAS HEATER	12-1
GAS ENGINE #41	12-E1
GAS ENGINE #42	12-E2
GAS ENGINE #43	12-E3
GAS ENGINE #44	12-E4
GAS ENGINE #45	12-E5
GAS ENGINE #46	12-E6
GAS ENGINE #47	12-E7
19.2 PLATFORMER CHARGE HEATER	19-1
19.1 #2 REHEATER	19-2
19.1 NAPHTHA HDS CHARGE HEATER	19-3
19.3 DISTILLATE HDS CHARGE HEATER	19-4
19.1 #1 REBOILER FURNACE	19-5
UNIT 19.2 PLATFORMER REHEATER	19-6
UNIT 2-2 HDS CHARGE HEATER	2-1
REBOILER FURNACE	2-2
ALKY REBOILER FURNACE	22-1
UNIT 26 DEBUTANIZER REBOILER	26-2
CRUDE UNIT 28 HEATER	28-1
UNIT 29 DEBUTANIZER REBOILER	29-4
UNIT 29 FCCU REGENERATOR	29P1
UNIT 34 INCINERATOR	34I1
UNIT 36 HEATER	36-1
UNIT 40 SUPERHEATER #1	40-1
UNIT 40 FCCU REGENERATOR	40P1
UNIT 4 FEED HEATER	4-1
UNIT 41 REFORMER FURNACE	41-1
UNIT 4 DEHYDRATOR HEATER	4-2
UNIT 42 REACTOR CHARGE HEATER	42-1
UNIT 42 REACTOR CHARGE HEATER	42-2
UNIT 42 FRACTIONATOR FEED HEATER	42-3
UNIT 43 INCINERATOR	43I1
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NAME	FIN
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CAT FLARE	66FL3
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NAME	FIN
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NAME	FIN
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NAME	FIN
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STORAGE TANK	T0110
STORAGE TANK	T0111
STORAGE TANK	T0202
TANK	T0303
TANK	T0309
TANK	T0401
TANK STORAGE	T0511
TANK	T0514
TANK	T0552
TANK	T0562
TANK	T0572
STORAGE TANK	T0573
TANK STORAGE	T1001
TANK STORAGE	T1002
TANK STORAGE	T1003
TANK STORAGE	T1006
TANK STORAGE	T1007
TANK STORAGE	T1012
TANK STORAGE	T1013
TANK STORAGE	T1064
TANK STORAGE	T1163
TANK STORAGE	T1164
TANK STORAGE	T1165
TANK STORAGE	T1070
STORAGE TANK	T2072
TANK STORAGE	T2510
TANK STORAGE	T2553
TANK STORAGE	T2571
TANK STORAGE	T2572
TANK STORAGE	T2575
STORAGE TANK	T2576
STORAGE TANK	T2577
TANK STORAGE	T2578
STORAGE TANK	T2579
TANK	T2580
STORAGE TANK	T2670
TANK STORAGE	T2672
TANK STORAGE	T2673
TANK STORAGE	T2674
TANK STORAGE	T2675

NAME	FIN
TANK STORAGE	T2676
TANK STORAGE	T2677
TANK STORAGE	T2678
TANK STORAGE	T3001
TANK STORAGE	T3002
TANK	T3003
TANK STORAGE	T4030
COKER DAY TANK	T5001
TANK STORAGE	T5505
TANK	T5508
STORAGE TANK	T5511
TANK STORAGE	T5520
TANK STORAGE	T5521
TANK STORAGE	T5531
TANK STORAGE	T5532
STORAGE TANK	T5550
TANK STORAGE	T5551
TANK STORAGE	T5553
TANK STORAGE	T5554
TANK STORAGE	T5555
TANK STORAGE	T5556
TANK	T5558
TANK STORAGE	T5559
TANK STORAGE	T5560
TANK STORAGE	T5578
TANK STORAGE	T5580
TANK STORAGE	T5583
TANK STORAGE	T5584
TANK STORAGE	T5587
TANK STORAGE	T5588



NAME	FIN
TANK	T5589
TANK STORAGE	T5590
TANK STORAGE	T5591
TANK STORAGE	T5592
TANK STORAGE	T5593
TANK STORAGE	T5596
TANK STORAGE	T5597
TANK STORAGE	T5598
TANK STORAGE	T5599
TANK STORAGE	T8001
TANK STORAGE	T8002
TANK STORAGE	T8010
TANK STORAGE	T8011
TANK STORAGE	T8012
TANK	T8013
TANK STORAGE	T8014
TANK	T8015
TANK STORAGE	T8031
TANK STORAGE	T8032
TANK	T8033
TANK STORAGE	T8034
TANK STORAGE	T9200
TANK STORAGE	T9201
TANK	T9202
TANK	T9400
TANK	T9401
TANK STORAGE	T9500
TANK STORAGE	T9501
TANK STORAGE	T9502
TANK STORAGE	T9503
TANK	T9504
TANK	T9600
TANK	T9601
PETROLEUM STORAGE TANK	T9700
PETROLEUM STORAGE TANK	T9701
PETROLEUM STORAGE TANK	T9702
SULFUR STORAGE TANK	TKG47

**Permit Number 43073**

Name	FIN
Charge Heater	25H1
Unit 25 Fugitives	F-25
Regenerator Vent	25V1

**Permit Number 71385**

Name	FIN
Tank 520	T0520
Unit 45 Fugitives	P-U45
Cooling Tower (Unit 45)	P-45-10

**Permit Number 84720**

Name	FIN
Temporary Boiler No. 1	Skid BLR1

**Permit Number 85872**

Name	FIN
Skid Boiler	Skid BLR
Skid Boiler Fugitives	Fug
Boiler 2.4	81B17

Date: March 22, 2019

Emission Sources - Maximum Allowable Emission Rates

Permit Number 80799

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)
66FL1 66FL2 66FL3 66FL4 66FL12	Controlled Vessel Degassing	CO	34.94	4.18
		H <sub>2</sub> S	2.32	0.22
		NO <sub>x</sub>	17.50	2.09
		SO <sub>2</sub>	214.40	38.32
		VOC	84.42	9.77
MSS-VAC MSS-AIRMOVERS MSS-CHEM MSS-BLAST MSS-FRAC MSS-VES MSS-MAINTACT MSS-EQP MSS-DRAING	Atmospheric MSS	H <sub>2</sub> S	0.43	0.03
		VOC	273.45	45.59
		PM	0.23	0.29
		PM <sub>10</sub>	0.23	0.29
		PM <sub>2.5</sub>	0.23	0.29
MSS-CHEM	Chemicals and Cleaners for MSS	VOC	10.25	10.66
MISC-MSS	Miscellaneous MSS Activities (Low Emitting Activities)	VOC	16.83	1.42
		CO	0.15	0.03
		NO <sub>x</sub>	0.15	0.03
		SO <sub>2</sub>	0.15	0.03
MSS-TANKS	Tank MSS (5)	VOC	853.55	7.48

## Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
Heaters/Furnaces	Decoking (5)	CO	3.89	6.02
		PM	1.67	2.58
		SO <sub>2</sub>	5.56	8.60
3411 4311	SRU Startup and Meltout	H <sub>2</sub> S	0.05	0.01
		SO <sub>2</sub>	94.00	6.77
66FL12 66FL13 4311	GOHDS Units Startup and Shutdown	CO	2,603.00	62.46
		H <sub>2</sub> S	60.00	1.44
		NO <sub>x</sub>	1,700.00	40.80
		SO <sub>2</sub>	5,534.00	132.80
		VOC	0.96	0.01
		PM	0.01	0.01
66FL1 66FL2 66FL3 66FL4 66FL12	Hydrogen, Off Gas, and Flare Gas Recovery Flaring	CO	105.00	2.24
		H <sub>2</sub> S	69.54	0.11
		NO <sub>x</sub>	57.45	1.20
		SO <sub>2</sub>	6,414.00	9.68
		VOC	1,675.00	3.39

## Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
MSS-U41	Unit 41 Hydrogen Plant and PSA Startup Venting	CO	2090.08	58.51
		VOC	16.20	0.45
29P1	Unit 29 FCCU Regenerator MSS	CO	6775.54	15.81
		PM	4874.50	123.05
		PM <sub>10</sub>	633.68	16.00
		PM <sub>2.5</sub>	97.49	2.46
40P1	Unit 40 FCCU Regenerator MSS	CO	5928.60	13.83
		PM	3476.18	87.75
		PM <sub>10</sub>	451.90	11.41
		PM <sub>2.5</sub>	69.52	1.76

(1) Emission point identification - either specific equipment designation or emission point number from a plot plan.

(2) Specific point source names. For fugitive sources, use an area name or fugitive source name.

(3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code §101.1

NO<sub>x</sub> - total oxides of nitrogen

SO<sub>2</sub> - sulfur dioxide

CO - carbon monoxide

H<sub>2</sub>S - hydrogen sulfide

PM - particulate matter, suspended in the atmosphere, including PM<sub>10</sub> and PM<sub>2.5</sub>

PM<sub>10</sub> - particulate matter equal to or less than 10 microns in diameter

PM<sub>2.5</sub> - particulate matter equal to or less than 2.5 microns in diameter

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

(5) Emissions may occur at any tank or heater/furnace.

Date: July 31, 2019