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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

June 15, 2009

MR ERIC R KAYSEN PE
ENVIRONMENTAL MANAGER
FLINT HILLS RESOURCES LP
PO BOX 2608
CORPUS CHRISTI TX 78403-2608

Re: Permit Amendment and Renewal
Flexible Permit Numbers: 6308 and PSDTX137M2
Petroleum Refinery
Corpus Christi, Nueces County
Regulated Entity Number: RN102534138
Customer Reference Number: CN600879712
Account Number: NE-0120-H

Dear Mr. Kaysen:

This is in response to your Form PI-1 (General Application for Air Preconstruction Permits and Amendments) and Form PI-1R (General Application for Air Permit Renewals) concerning the proposed amendment and renewal of Flexible Permit Numbers 6308 and PSDTX137M2. We understand you propose to incorporate several previously authorized permit by rule (PBR) registrations into this permit. Also, this will acknowledge that your application for the above-referenced amendment and renewal is technically complete as of April 3, 2009.

In accordance with Title 30 Texas Administrative Code § 116.721(a) [30 TAC § 116.721(a)], and based on our review, Flexible Permit Numbers 6308 and PSD-TX-137M2 are hereby amended in accordance with your proposal. This information will be incorporated into the existing permit file.

No planned maintenance, start-up, and shutdown emissions have been reviewed or represented in this application and none are authorized by this permit action.

With this amendment, the following PBR registrations will be incorporated into this permit and their separate registrations will be voided: 39987, 72570, 72679, 73712, 75742, 75739, 76593, 76751, 76887, 78179, 79221, 79329, and 70006.

Also, in accordance with 30 TAC § 116.314(a), and based on our review, your permit is hereby renewed. Enclosed is a permit for your facility. Also enclosed are new special conditions and a maximum allowable emission rates table. We appreciate your careful review of the special conditions of the permit and assuring that all requirements are consistently met.

Mr. Eric R. Kaysen, P.E.

Page 2

June 15, 2009

Re: Flexible Permit Numbers 6308 and PSDTX137M2

This permit will be in effect for ten years from the date of approval (Commission's final decision). If this permit is appealed and the permittee does not commence any action authorized by this permit during judicial review, the term will not begin until judicial review is concluded.

As of July 1, 2008, all analytical data generated by a mobile or stationary laboratory in support of compliance with air permits must be obtained from a NELAC (National Environmental Laboratory Accreditation Conference) accredited laboratory under the Texas Laboratory Accreditation Program or meet one of several exemptions. Specific information concerning which laboratories must be accredited and which are exempt may be found in 30 TAC §§ 25.4 and 25.6.

For additional information regarding the laboratory accreditation program and a list of accredited laboratories and their fields of accreditation, please see the following Web site:

http://www.tceq.state.tx.us/compliance/compliance_support/qa/env_lab_accreditation.html

For questions regarding the accreditation program, you may contact the Texas Laboratory Accreditation Program at (512) 239-3754 or by e-mail at labprgms@tceq.state.tx.us.

You may file a **motion to overturn** with the Chief Clerk. A motion to overturn is a request for the commission to review the Texas Commission on Environmental Quality (TCEQ) Executive Director's approval of the application. Any motion must explain why the commission should review the TCEQ Executive Director's action. According to 30 TAC § 50.139, an action by the TCEQ Executive Director is not affected by a motion to overturn filed under this section unless expressly ordered by the commission.

A motion to overturn must be received by the Chief Clerk within 23 days after the date of this letter. An original and 11 copies of a motion must be filed with the Chief Clerk in person or by mail. The Chief Clerk's mailing address is Texas Commission on Environmental Quality, Office of the Chief Clerk, MC-105, P.O. Box 13087, Austin, Texas 78711-3087. On the same day the motion is transmitted to the Chief Clerk, please provide copies to Mr. Robert Martinez, Director, Environmental Law Division, MC-173, and Mr. Blas J. Coy, Jr., Public Interest Counsel, MC-103, both at the same TCEQ address above. If a motion is not acted on by the commission within 45 days after the date of this letter, then the motion shall be deemed overruled.

You may also request **judicial review** of the TCEQ Executive Director's approval. According to Texas Health and Safety Code § 382.032, a person affected by the TCEQ Executive Director's approval must file a petition appealing the TCEQ Executive Director's approval in Travis County district court within 30 days after the effective date of the approval. Even if you request judicial review, you still must exhaust your administrative remedies, which includes filing a motion to overturn in accordance with the previous paragraphs.

Mr. Eric R. Kaysen, P.E.

Page 3

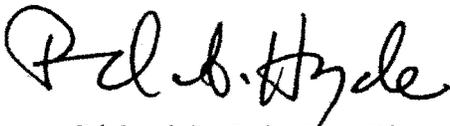
June 15, 2009

Re: Flexible Permit Numbers 6308 and PSDTX137M2

Thank you for your cooperation in sending us the information necessary to evaluate your operations and for your commitment to air pollution control. If you have any questions, please contact Mr. Palinda de Silva at (512) 239-1464 or write to the Texas Commission on Environmental Quality, Office of Permitting and Registration, 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,

A handwritten signature in black ink, appearing to read "Richard A. Hyde". The signature is written in a cursive style with a large initial "R".

Richard A. Hyde, P.E., Director
Air Permits Division
Office of Permitting and Registration
Texas Commission on Environmental Quality

RAH/PDS/ssl

Enclosures

cc: Air Section Manager, Region 14 - Corpus Christi

Project Numbers: 113517 and 124362



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

AIR QUALITY PERMIT

A FLEXIBLE PERMIT IS HEREBY ISSUED TO

Flint Hills Resources, LP

AUTHORIZING THE CONTINUED OPERATION OF

Petroleum Refinery

LOCATED AT Corpus Christi, Nueces County, Texas

LATITUDE 27° 48' 16" LONGITUDE 097° 25' 30"



- 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 executive director of the Texas Commission on Environmental Quality (commission) to amend this permit in that regard and such amendment is approved. It shall be unlawful for any person to vary from such representation or flexible permit provision if the change will cause a change in the method of control of emissions, the character of the emissions, or will result in a significant increase in emissions, unless application is made to the executive director to amend the flexible permit in that regard and such amendment is approved by the executive director. [Title 30 Texas Administrative Code § 116.721 (30 TAC § 116.721)]**
- 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(a), (b) and (c)]
- Construction Progress.** The 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 § 116.715(c)(2)]
- Start-up Notification.** The appropriate regional office of the commission and any local program having jurisdiction 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. Phased construction, which may involve a series of facilities commencing operations at different times, shall provide separate notification for the commencement of operations for each facility. Prior to beginning operations of the facilities authorized by the permit, the permit holder shall identify to the Office of Permitting and Registration 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 § 116.715(c)(3)]
- Sampling Requirements.** If sampling of stacks or process vents is required, the flexible permit holder shall contact the commission's Engineering Services Section, 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 appropriate regional office of the commission. The flexible permit holder is also responsible for providing sampling facilities and conducting the sampling operations or contracting with an independent sampling consultant. [30 TAC § 116.715(c)(4)]
- Equivalency of Methods.** It shall be the responsibility of the flexible permit holder to 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 flexible 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 § 116.715(c)(5)]
- Recordkeeping.** A copy of the flexible permit along with information and data sufficient to demonstrate continuous compliance with the emission caps and individual emission limitations contained in the flexible permit shall be maintained in a file at the plant site and made available at the request of personnel from the commission or any air pollution control program having jurisdiction. For facilities that normally operate unattended, this information shall be maintained at the nearest staffed location within Texas specified by the permit holder in the permit application. This information may include, but is not limited to, emission cap and individual emission limitation calculations based on a 12-month rolling basis and production records and operating hours. Additional recordkeeping requirements may be specified in special conditions attached to the flexible permit. Information in the file shall be retained for at least two years following the date that the information or data is obtained. [30 TAC § 116.715(c)(6)]
- Maximum Allowable Emission Rates.** A flexible permit covers only those sources of emissions and those air contaminants listed in the table entitled "Emission Sources, Emissions Caps and Individual Emission Limitations" attached to the flexible permit. Flexible permitted sources are limited to the emission limits and other conditions specified in the table attached to the flexible permit. [30 TAC § 116.715(c)(7)]
- Emission Cap Readjustment.** If a schedule to install additional controls is included in the flexible permit and a facility subject to such a schedule is taken out of service, the emission cap contained in the flexible permit will be readjusted for the period the unit is out of service to a level as if no schedule had been established. Unless a special provision specifies the method of readjustment of the emission cap, a permit alteration shall be obtained. [30 TAC § 116.715(c)(8)]
- Maintenance of Emission Control.** The facilities covered by the flexible permit 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. Notification for emissions events and scheduled maintenance shall be made in accordance with §§ 101.201 and 101.211 of this title (relating to Emissions Event Reporting and Recordkeeping Requirements; and Scheduled Maintenance, Startup, and Shutdown Reporting and Recordkeeping). [30 TAC § 116.715(c)(9)]
- Compliance with Rules.** Acceptance of a flexible permit by a permit applicant constitutes an acknowledgment and agreement that the holder will comply with all Rules, Regulations, and Orders of the commission issued in conformity with the Texas Clean Air Act (TCAA) and the conditions precedent to the granting of the permit. If more than one state or federal rule or regulation or flexible permit condition are applicable, then 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 flexible permit. [30 TAC § 116.715(c)(10)]
- This permit may be appealed pursuant to 30 TAC § 50.139.
- This permit may not be transferred, assigned, or conveyed by the holder except as provided by rule. [30 TAC § 116.110(e)]
- There may be additional special conditions attached to a flexible permit upon issuance or amendment of the permit. Such conditions in a flexible permit may be more restrictive than the requirements of Title 30 of the Texas Administrative Code. [30 TAC § 116.715(d)]
- Emissions from this facility must not cause or contribute to a condition of "air pollution" as defined in TCAA § 382.003(3) or violate TCAA § 382.085, as codified in the Texas Health and Safety Code. 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.**

FLEXIBLE PERMITS 6308 and PSDTX137M2

Date: June 15, 2009

Ma P. Wiley

For the Commission

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

EMISSION CAPS AND INDIVIDUAL EMISSION LIMITATIONS

1. This permit authorizes emissions only from those points listed in the attached table entitled "Emission Sources, Emissions Caps and Individual Emission Limitations" and the facilities covered by this permit are authorized to emit subject to the emission rate limits on that table and other operating requirements specified in the special conditions. (2/09)
2. Non-fugitive emissions from relief valves, safety valves, or rupture discs of gases containing volatile organic compounds (VOC) at a concentration of greater than 1 percent are not authorized by this permit unless authorized on the "Emission Sources, Emissions Caps and Individual Emission Limitations" table. Any releases directly to atmosphere from relief valves, safety valves, or rupture discs of gases containing VOC at a concentration greater than 1 weight percent are not consistent with good practice for minimizing emissions.
3. This permit authorizes emissions from the Main Flare (Emission Point No. [EPN] FL-97), the West Flare (FL-28), and the East Flare (EPN FL-27) for the following planned maintenance, start up, and shutdown (MSS) activities:

- Methyl-Tert-Butyl Ether (MTBE) Unit Planned Maintenance - Backflush
- MTBE Unit Planned Maintenance - Depressure Olefin Feed Treater
- MTBE Unit Planned Maintenance - Steaming MTBE OLF and Reactor 1
- MTBE Unit Planned Maintenance - Reactor 2 Nitrogen Purge
- MTBE Unit Planned Maintenance - Reactor 2 Nitrogen Purge - Supplemental Fuel
- Benzene Splitter Column Planned Start-Up
- Benzene Splitter Column Planned Start-Up - Supplemental Fuel
- DHT Unit Planned Maintenance - Depressure DHT and Stripper
- DHT Unit Planned Maintenance - Nitrogen Purge
- DHT Unit Planned Maintenance - Nitrogen Cooldown Purge
- DHT Unit Planned Maintenance - Nitrogen Cooldown Purge - Supplemental Fuel
- DHT Unit Planned Maintenance - Hydrogen Purge
- DHT Unit Planned Maintenance - Hydrogen Depressurization
- DHT Unit Planned Maintenance - Catalyst Sulfiding
- SRU No. 2 Planned Maintenance - Off-Gas from Decommissioning Sump Tanks
- BTX Platformer Unit Planned Maintenance - Depressurizing
- BTX Platformer Unit Planned Maintenance - Nitrogen Purge
- BTX Platformer Unit Planned Maintenance - 1st Stage Carbon Burning

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 2

These emissions are subject to the maximum allowable emission rates indicated on the "Emission Sources, Emissions Caps and Individual Emission Limitations" table. Any planned MSS not in the above list are not authorized by this permit. (1/04)

FEDERAL APPLICABILITY

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

- A. General Provisions, Subpart A;
- B. Petroleum Refineries, Subpart J;
- C. Storage Vessels for Petroleum Liquids, Subparts K and Ka;
- D. Volatile Organic Liquid Storage Vessels, Subpart Kb;
- E. Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, (SOCMI) Subpart VV;
- F. Equipment Leaks of VOC in Petroleum Refineries, Subpart GGG; and
- G. The VOC Emissions from Petroleum Wastewater Systems, Subpart QQQ.

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111] and FCCU II Charge Heater [EPN 110]) (1/01)

5. These facilities shall comply with all applicable requirements of the EPA regulations 40 CFR Part 61 on National Emission Standards for Hazardous Air Pollutants (NESHAPS) promulgated for:

- A. General Provisions, Subpart A;
- B. Equipment Leaks (Fugitive Emission Sources) of Benzene, Subpart J;

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 3

- C. Benzene Emissions from Benzene Storage Vessels, Subpart Y;
 - D. Benzene Emissions from Benzene Transfer Operations, Subpart BB; and
 - E. Benzene Waste Operations, Subpart FF. (6/99)
6. These facilities shall comply with all applicable requirements of the EPA regulations in 40 CFR Part 63 on NESHAPS promulgated for:
- A. General Provisions, Subpart A;
 - B. Petroleum Refineries, Subpart CC;
 - C. The SOCM, Subpart F;
 - D. The SOCM for Process Vents, Storage Vessels, Transfer Operations, and Wastewater, Subpart G; and
 - E. Organic Hazardous Air Pollutants for Equipment Leaks, Subpart H; (7/00)
 - F. Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units, Subpart UUU; and
 - G. Organic Liquid Distribution (non-gasoline), Subpart EEEE.

EMISSION STANDARDS

7. For purposes of estimating emissions for heaters and boilers after burner upgrades have been installed or for those heaters not being upgraded, the carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), particulate matter (PM), and VOC emissions shall be determined in accordance with the following emission factors unless a continuous emissions monitor (CEM) is required to be installed and operated under Special Condition No. 23. After the installation and calibration of the CEM, monitoring data collected therein shall be used instead of these emission factors at an individual heater.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 4

CO Emissions

For all heaters, except those specifically identified below, the CO emissions shall be calculated based on the annual fired duty in MMBtu per year (MMBtu/yr) and a CO emission factor of 0.05 pound (lb) CO/MMBtu (higher heating value [HHV]).

The DHT-D Charge Heater, DHT-I Charge Heater, DHT-I Fractionator Heater, DHT-K Charge Heater, Clay Tower Heater, SRU SCOT Heater, and ISOM Splitter Reboiler CO emissions shall be calculated based on the annual fuel gas usage and a CO emission factor of 84 lb CO of million standard cubic feet (MMscf) of fuel gas. (6/09)

NO_x Emissions

The NO_x emissions shall be calculated based on the annual fired duty in MMBtu/yr and the NO_x emission factor as identified below:

0.152 lb NO_x/MMBtu (HHV) - SRU No. 1 SCOT Heater;

0.075 lb NO_x/MMBtu (HHV) - Crude II Charge Heater A, Hydrobon Charge Heater, DIH B Heater, Hydrobon Reboiler (Hourly);

0.05 lb NO_x/MMBtu (HHV) - DHT-I Fractionator Heater;

0.06 lb NO_x/MMBtu (HHV) - DHT-I Charge Heater;

0.055 lb NO_x/MMBtu (HHV) - FCCU II Charge Heater and Hydrobon Reboiler(Annual);

0.045 lb NO_x/MMBtu (HHV) - BTX Rx No. 1 Heater, BTX Rx No. 2 Heater, and BTX Depentanizer Reboiler, DHT-K Charge Heater; and

0.04 lb NO_x/MMBtu (HHV) - Isom Splitter Reboiler.

The Sulfolane Clay Tower Heater NO_x emissions shall be calculated based on the annual fuel gas usage and a NO_x emissions factor of 140 lb NO_x/MMscf of fuel gas.

The DHT-D Charge Heater NO_x emissions shall be calculated based on the annual fuel gas usage and a NO_x emission factor of 100 lbs NO_x/MMscf of fuel gas. (6/09)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 5

SO₂ Emissions

The SO₂ emissions shall be calculated on the annual fuel gas usage and the measured hydrogen sulfide (H₂S) concentration in the fuel gas as determined by Special Condition No. 33 and assuming 100 percent conversion of H₂S to SO₂.

PM Emissions

The PM emissions for all heaters shall be calculated based on the annual fuel gas usage and the PM emission factor of 7.6 lb PM/MMscf fuel gas. (6/09)

VOC Emissions

The VOC emissions for all heaters shall be calculated based on the annual fuel gas usage and the VOC emission factor of 5.5 lb VOC/MMscf fuel gas. (6/09)

(PSD 05/09/79 for FCCU II Charge Heater [EPN 110]) (9/04)

8. For purposes of estimating emissions, the CO, NO_x, SO₂, PM, and VOC emissions for the FCCU II Catalyst Regenerator Scrubber shall be determined in accordance with the following emission factors unless a CEM is required to be installed and operated under Special Condition No. 21. After the installation and calibration of the CEM, monitoring data collected therein shall be used instead of these emission factors.

NO_x - 200 parts per million by volume on a dry basis (ppmvd), air-free basis annual average, 500 ppmvd, air-free basis hourly average

CO - 125 ppmvd annual average, 500 ppmvd, hourly average

SO₂ - 25 ppmvd, air-free basis 365-day rolling average; 50 ppmvd, air-free basis seven-day rolling average; 250 ppmvd, air-free basis hourly average

VOC - 10 ppmvd, air-free basis annual average, 100 ppmvd, air-free basis hourly average

PM - 1 lb PM per 1,000 lb coke burn-off

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111]) (8/02)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 6

9. The NO_x emissions in the stack gases from the following EPNs shall not exceed the following, averaged on a three-hour rolling average basis at the maximum fired capacity:

<u>EPN</u>	<u>Description</u>	<u>Maximum Heat Specific (lb/MMBtu, HHV)</u>
35, 36	BTX Rx No. 1 Heater	0.045
37, 38	BTX Rx No. 2 Heater	0.045
33, 34	BTX Depentanizer Reboiler	0.045
120	Isom Splitter Reboiler	0.040
74R	DHT-K Charge Heater	0.045

The NO_x limit of each heater above shall not apply when that heater fires below 20 percent of its firing rate capacity (low load), so long as NO_x emissions remain below the NO_x cap limits. Low load operating conditions shall be limited to 876 hours per year per heater. (2/09)

10. The opacity of emissions from any source on this permit shall not exceed 15 percent averaged over a six-minute period. Opacity shall be determined by EPA Reference Method No. 9.

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111]) (1/01)

11. Flare and/or marine vapor combustor emissions shall be calculated using the Texas Commission on Environmental Quality (TCEQ)-approved flare factors for NO_x and CO emissions according to the following table. Do not use AP-42 factors.

<u>Type Flare</u>	<u>Waste Gas Heating Value</u>	<u>Emission Factor</u>	
		<u>NO_x (lbs/MMBtu)</u>	<u>CO (lbs/MMBtu)</u>
Steam	Hi Btu (>1,000 Btu/scf)	0.0485	0.3503

<u>Type Flare</u>	<u>Waste Gas Heating Value</u>	<u>Emission Factor</u>	
		<u>NO_x (lbs/MMBtu)</u>	<u>CO (lbs/MMBtu)</u>
Steam	Low Btu (192-1,000 Btu/scf)	0.068	0.3465
Air/Unassisted	High Btu	0.138	0.2755
Air/Unassisted	Low Btu	0.0641	0.5496

For VOC use 98 percent (99 percent for C2s and C3s) control.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 7

12. The West Flare (EPN FL-28) may be used as a backup for the Main Flare (EPN FL-97). The East Flare (EPN FL-27) may be used as a backup for the West Flare and the Main Flare. (1/04)

SULFUR RECOVERY UNITS (SRU)

13. The total sulfur recovered from the SRU No. 1 and No. 2 combined shall not exceed 116 long tons per day based on a seven-day rolling average. (8/02)
14. The minimum sulfur recovery efficiency for SRU No. 1 shall be 99.82 percent and for SRU No. 2 shall be 99.8 percent based on a seven-day rolling average. The sulfur recovery efficiency shall be determined by calculation as follows:

$$\text{Efficiency} = \frac{(\text{S recovered})(100)}{(\text{S recovered}) + (\text{S incinerator})}$$

Where: Efficiency = sulfur recovery efficiency, percent
S recovered = elemental sulfur delivered into pit, lbs per week (lbs/wk)
S incinerator = sulfur in incinerator stack, lbs/wk

The average sulfur recovery efficiency shall be demonstrated by a mass balance calculation using data obtained from the incinerator stack SO₂ monitor, sulfur production records, and other process flow data. Records and copies of the compliance calculations shall be maintained on-site for review by TCEQ personnel. (8/02)

15. Except as provided for in the "Emergency Operational Requirements" section of this permit, all tail gas from the SRU shall be routed to the SCOT Tail Gas Treating Unit (TGTU). (8/02)
16. The CO emission rates listed on the Emission Sources, Emissions Caps and Individual Emission Limitations table for the tail gas incinerator (TGI) Stack, EPN S-84, are based upon a maximum CO concentration of 100 parts per million by volume (ppmv) in the TGI exhaust gas. (8/02)
17. Vapors from sulfur truck loading shall be routed either back to the sulfur pit, back to the SRU front-end, or to the TGI. Sulfur pit vapors shall be routed to either the SRU front-end or to the TGI. (8/02)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 8

18. The TGI firebox exit temperature shall be continuously monitored and recorded. The minimum hourly average TGI firebox chamber temperature shall be 1000°F during normal operating conditions. The monitoring data must consist of a minimum of four equally-spaced data points for each one-hour period. Up to 5 percent invalid monitoring data on a rolling 12-month basis is acceptable provided it is only generated when the monitor is broken down, out-of-control (producing inaccurate data), being repaired, having maintenance performed, or being calibrated. The data availability shall be calculated as the total SRU TGI operating minutes for which quality assured data was recorded divided by the total SRU TGI operating minutes. The measurements missed shall be estimated using engineering judgment and the methods used recorded. (2/09)

EMERGENCY OPERATIONAL REQUIREMENTS

19. The following are requirements for responding to emergency shutdown of the SRU, Sour Water Stripper (SWS), Amine Regeneration Unit (ARU), TGTU, or TGI. In all cases, the permit holder shall implement the sulfur shedding program, as necessary, to ensure acid gas flaring does not exceed 24 hours in the event of a facility component shutdown. In no circumstance shall acid gas be routed directly to the atmosphere. However, in the event that only the incinerator shuts down while the SRU and TGTU are operational, tail gas may be vented to the atmosphere through the incinerator as described below.

A. SRU Emergency Shutdown

- (1) In the event of an emergency acid gas flaring situation, retention of sour water feed in the sour water storage tanks shall begin within four hours.
- (2) The production at upstream process units shall be curtailed as necessary within 24 hours to reduce rich amine loading and sour water processing to cease acid gas flaring.

B. Sour Water System

In the event the SWS shuts down, the associated sour water shall be routed to the sour water storage tanks within four hours.

C. ARU

In the event the ARU shuts down, the production at upstream process units shall be curtailed as necessary within 24 hours to reduce rich amine loading.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 9

D. TGTU

In the event the TGTU shuts down, the tail gas from the Claus Unit shall be routed to the TGI.

E. TGI

In the event a TGI shuts down while the SRUs and TGTUs are operational, the tail gas may be vented to the atmosphere through the incinerator for a maximum duration of one-hour. If the H₂S concentration in the tail gas is less than 10 parts per million (ppm), the tail gas may be vented to the atmosphere for a maximum duration of three days. If the H₂S concentration in the tail gas is 10 ppm or greater and the incinerator cannot be restarted within one-hour, the holder of this permit shall implement the requirements under Section A of this condition as if the corresponding SRU had shut down. (8/02)

INITIAL STACK TESTING

20. Sampling ports and platform(s) shall be installed in those sources required to be sampled under Special Condition No. 21 prior to those sources undergoing initial stack sampling. The sampling ports and platforms shall be installed according to the specifications set forth in the attachment entitled "Chapter 2, Stack Sampling Facilities." Alternate sampling facility designs may be submitted for approval by the TCEQ Regional Director or the Director of the TCEQ Compliance Support Division in Austin.

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111] and FCCU II Charge Heater [EPN 110]). (1/01)

21. The holder of this permit shall perform initial stack sampling and other stack testing as required within 60 days after achieving the maximum production rate at which the new or modified facility will be operated but no later than 180 days after initial start-up of the new or modified facilities.

A. Initial stack sampling shall be required for the following facilities:

- (1) FCCU II Catalyst Regenerator Scrubber.
- (2) Crude II Charge Heater A, BTX Rx Nos. 1 and 2 Heaters, FCCU II Charge Heater, Hydrobon Charge Heater or Reboiler, BTX Depent Heater, Isom Splitter Reboiler, and DIH Heater B. (6/09)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 10

- (3) TGI Stack from SRU No. 1 (EPN S-84).
TGI Stack from SRU No. 2 (EPN S-85). (8/02)
- (4) DHT-K Charge Heater (EPN DHT-K) (9/04)

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

- B. The appropriate TCEQ Regional Office in the region where the source is located shall be contacted as soon as testing is scheduled but not less than 30 days prior to sampling to schedule a pretest meeting.

The notice shall include:

- (1) Date for pretest meeting.
- (2) Date sampling will occur.
- (3) Name of firm conducting sampling.
- (4) Type of sampling equipment to be used.
- (5) Method or procedure to be used in sampling.

The purpose of the pretest meeting is to review the necessary sampling and testing procedures, to provide the proper data forms for recording pertinent data, and to review the format procedures for submitting the test reports.

A written proposed description of any deviation from sampling procedures specified in permit conditions or the TCEQ or EPA sampling procedures shall be made available to the TCEQ prior to the pretest meeting. The TCEQ Regional Director or the Director of the TCEQ Compliance Support Division in Austin shall approve or disapprove of any deviation from specified sampling procedures.

Requests to waive testing for any pollutant specified in this condition shall be submitted to the TCEQ Office of Permitting and Registration, Air Permits Division. Test waivers and alternate and/or equivalent procedure proposals for New Source Performance Standards (NSPS) testing which must have the EPA approval shall be submitted to the TCEQ Compliance Support Division in Austin.

- C. Air contaminants emitted from the FCCU Catalyst Regenerator Scrubber to be tested for include (but are not limited to) CO, NO_x, PM, SO₂, and VOC. Opacity shall be determined by a trained observer.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 11

Air contaminants emitted from the various process heaters and boilers to be tested for include (but are not limited to) CO and NO_x.

Air contaminants emitted from the TGI Exhaust Stacks (EPNs S-84 and S-85) to be tested for include (but are not limited to) SO₂ and CO.

- D. Requests for additional time to perform sampling shall be submitted to the TCEQ Regional Office. Additional time to comply with the applicable requirements of 40 CFR Part 60 and 40 CFR Part 61 requires the EPA approval, and requests shall be submitted to the TCEQ Compliance Support Division in Austin.
- E. The facility shall operate at maximum production rates during stack emission testing. Primary operating parameters that enable determination of production rate shall be monitored and recorded during the stack test. These parameters are to be determined at the pretest meeting. If the facility is unable to operate at maximum rates during testing, then future production rates may be limited to the rates established during testing. Additional stack testing may be required when higher production rates are achieved.
- F. Copies of the final sampling report shall be forwarded to the TCEQ within 60 days after sampling is completed. Sampling reports shall comply with the attached provisions of Chapter 14 of the TCEQ Sampling Procedures Manual.

The reports shall be distributed as follows:

One copy to the TCEQ Corpus Christi Regional Office.

- G. For the following symmetrical heaters having two stacks (Hydrobon Charge Heater and Reboiler, BTX Rx Nos. 1 and 2, and BTX Depentanizer Heater):
 - (1) It is permissible to sample one stack for pollutants and measure only the exhaust flow from the second identical stack. Concentrations from the sampling shall be used in combination with the measured flow rate for calculation of emission rates.
 - (2) If the measured exhaust flow varies between two symmetrical stacks by greater than 10 percent, both stacks will be required to be sampled one after another with no greater than 48 hours between the first stack sampling and the second. (10/06)

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111] and FCCU II Charge Heater [EPN 110]) (2/07)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 12

22. Additional stack testing may be required when higher production rates are achieved, except where the source is equipped with a CEMS that analyzes the applicable pollutants described in Special Condition No. 23C. (2/09)

CONTINUOUS DEMONSTRATION OF COMPLIANCE (2/09)

23. The holder of this permit shall install, calibrate, maintain and operate a CEM, and record the in-stack concentrations of the contaminants as specified below:

BTX Rx Nos. 1 and 2 Heaters, Crude II Charge Heater A:

NO_x, CO, and oxygen (O₂).

FCCU II Catalyst Regenerator Scrubber: NO_x, CO, SO₂, and O₂.

TGI Exhaust Stacks, EPNs S-84 and S-85: O₂ and SO₂.

The monitoring systems shall meet the following requirements:

- A. The CEMS shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Permitting, Remediation, and Registration, Air Permits Division for requirements to be met.
- B. Section 1 below applies to sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F; Section 2 applies to all other sources:
- (1) The permit holder shall assure that the CEMS meets the applicable quality assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Manager, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Manager. Downtime is not considered to include periods when the CEMS is operational but the 24-hour span drift exceeds the allowable amounts.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 13

- (2) The system shall be zeroed and spanned daily and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span are not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days, unless the monitor is required by a subpart of NSPS or NESHAPS in which case zero and span shall be done daily without exception.

Each monitor shall be quality-assured at least quarterly using cylinder gas audits (CGA) in accordance with 40 CFR Part 60, Appendix F, Procedure 1, § 5.1.2, with the following exception: a RATA is not required once every four quarters (i.e., four successive quarterly CGA may be conducted). An equivalent quality assurance method approved by the TCEQ may also be used. Successive quarterly audits shall occur no closer than two months.

All CGA exceedances of ± 15 percent accuracy indicate that the CEMS is out of control.

- C. The monitoring data shall be reduced to hourly average concentrations at least weekly, using a minimum of four equally-spaced data points from each one-hour period. The individual average concentrations shall be reduced to units of the permit allowable ER in pounds per hour (lb/hr) at least once every calendar quarter (except for O₂).
- D. All monitoring data and quality-assurance data shall be maintained by the source. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- E. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required initial RATA in order to provide them the opportunity to observe the testing.
- F. Quality-assured (or valid) data must be generated by the CEMS when the source it monitors is operating except during the performance of a daily zero and span check. Loss of valid data by the CEMS 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 source it monitors is operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111]) (1/01)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 14

24. The holder of this permit shall continuously monitor and record the actual throat velocity of the FCCU II wet gas scrubber. The wet gas scrubber shall be operated such that a throat velocity ratio (TVR), as calculated below, of greater than or equal to 1.0 but less than 2.0 is maintained. Records of actual throat velocity and TVR shall be kept at the plant site on a rolling two-year basis and shall be made available upon request.

$$\text{TVR} = \frac{\text{Actual Throat Velocity, fps}}{\text{Minimum Design Throat Velocity, fps}}$$

Up to 5 percent invalid monitoring data on a rolling 12-month basis is acceptable provided it is only generated when the monitor is broken down, out-of-control (producing inaccurate data), being repaired, having maintenance performed, or being calibrated. The data availability shall be calculated as the total operating minutes for which quality assured data was recorded divided by the total operating minutes. The measurements missed shall be estimated using engineering judgment and the methods used recorded. (2/09)

PIPING, VALVES, CONNECTORS, PUMPS, AGITATORS, AND COMPRESSORS IN VOLATILE ORGANIC COMPOUND (VOC) SERVICE - 28 VHP (6/09)

25. Except as may be provided for in the special conditions of this permit, the following requirements apply to the above-referenced equipment.
- A. These conditions shall not apply (1) where the volatile organic compounds (VOC) have an aggregate partial pressure or vapor pressure of less than 0.044 pound 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:

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

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 15

- 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 and maintenance, both valves shall be closed. The sealing device may be removed only while a sample is being taken or during maintenance operations, and when closing the line, the upstream valve shall be closed first.

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

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 16

A check of the reading of the pressure-sensing device to verify disc integrity shall be performed weekly 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.

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 are 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. Records of the first attempt to repair shall be maintained.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 17

- I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging within 15 days of the detection of the leak. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list. The cumulative daily emissions from all components on the delay of repair list shall be estimated by multiplying by 24 the mass emission rate for each component calculated in accordance with the instructions in 30 TAC § 115.782 (c)(1)(B)(i)(II). The calculations of the cumulative daily emissions from all components on the delay of repair list shall be updated within ten days of when the latest leaking component is added to the delay of repair list. When the cumulative daily emission rate of all components on the delay of repair list times the number of days until the next scheduled unit shutdown is equal to or exceeds the total emissions from a unit shutdown as calculated in accordance with 30 TAC § 115.782 (c)(1)(B)(i)(I), the TCEQ Regional Manager and any local programs shall be notified and may require early unit shutdown or other appropriate action based on the number and severity of tagged leaks awaiting shutdown. This notification shall be made within 15 days of making this determination.
 - J. Records of repairs shall include date of repairs, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of instrument monitoring shall indicate dates and times, test methods, and instrument readings. The instrument monitoring record shall include the time that monitoring took place for no less than 95 percent 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.
26. The requirements to identify the exempted components using a piping and instrumentation diagram (PID), as listed in condition number 25A, and monitor and repair agitator seals, as listed in condition numbers 25H and 25G, are deferred for a period of 36 months from the issuance of this permit. (6/09)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 18

27. Instead of the leak definition of 2,000 ppmv specified in Special Condition No. 251 for pump and compressor seals in the hydrobon unit, the isomerization unit, and the MTBE unit, the permit holder shall use a leak definition of 500 ppmv. (8/02)

PIPING, VALVES, CONNECTORS, PUMPS, AND COMPRESSORS IN H₂S SERVICE
(SRU Nos. 1 - 2, and Sour Water Stripper)

28. A. Audio, olfactory, and visual checks for H₂S leaks within the operating area shall be made once per shift.
- B. Immediately, but no later than one hour upon detection of a leak, plant personnel shall take the following actions:
- (1) Isolate the leak.
 - (2) Commence repair or replacement of the leaking component.
 - (3) Use a leak collection and containment system to prevent the leak until repair or replacement can be made if immediate repair is not possible.

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.

STORAGE AND LOADING OF VOC (6/09)

29. Storage tanks are subject to the following requirements. The control requirements specified in paragraphs A-D of this condition shall not apply (1) where the VOC has an aggregate partial pressure of less than 0.50 psia at the maximum feed temperature or 95°F, whichever is greater, or (2) to storage tanks smaller than 25,000 gallons.
- A. An internal floating deck or "roof" or equivalent control shall be installed in all tanks. The floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof: (1) a liquid-mounted seal, (2) two continuous seals mounted one above the other, or (3) a mechanical shoe seal.
- B. An open-top tank containing a floating roof (external floating roof tank) which uses double seal or secondary seal technology shall be an approved control alternative to an internal floating roof tank provided the primary seal consists of either a mechanical shoe seal or a liquid-mounted seal and the secondary seal is rim-mounted. A weathershield

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 19

is not approvable as a secondary seal unless specifically reviewed and determined to be vapor-tight.

- C. For any tank equipped with a floating roof, the permit holder shall perform the visual inspections and seal gap measurements as specified in 40 CFR § 60.113b, Testing and Procedures (as amended at 54 FR 32973, Aug. 11, 1989), to verify fitting and seal integrity. Records shall be maintained of the dates seals were inspected and seal gap measurements made, results of inspections and measurements made (including raw data), and actions taken to correct any deficiencies noted.
- D. The floating roof design shall incorporate sufficient flotation to conform to the requirements of API Code 650 dated November 1, 1998 except that an internal floating cover need not be designed to meet rainfall support requirements and the materials of construction may be steel or other materials.
- E. Except for logos, slogans, identification numbers and similar displays (not to exceed 15 percent of the vertical tank shell area), uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum. Storage tanks must be equipped with permanent submerged fill pipes.
- F. The permit holder shall maintain an emissions record which includes calculated emissions of VOC from all storage tanks during the previous calendar month and the past consecutive 12-month period. The record shall include tank identification number, control method used, tank capacity in gallons, name of the material stored, VOC molecular weight, VOC monthly average temperature in degrees Fahrenheit, VOC vapor pressure at the monthly average material temperature in psia, VOC throughput for the previous month and year-to-date. Records of VOC monthly average temperature are not required to be kept for unheated tanks which receive liquids that are at or below ambient temperatures.

Emissions for tanks shall be calculated using: the TCEQ publication titled "Technical Guidance Package for Chemical Sources - Storage Tanks."

- G. The permit holder shall maintain a record of tank throughput for the previous month and the past consecutive 12-month period for each tank.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 20

30. A. The storage of benzene, toluene, and xylene is limited to the following tanks unless additional storage is authorized by a permit amendment, alteration, or permit by rule pursuant to 30 TAC § 116.721, except as stated in section B of this condition. (6/09)

Benzene - Storage Tanks E11TKR5, E11TKR7, and E12TK145
Toluene - Storage Tanks E11TKS21, E11TKS23, E11TKR17, and E11TKR18
Xylene - Storage Tanks E11TKS32, E11TKR9, and E11TKR21

- B. Toluene may be stored in an alternate storage tank provided the following conditions are met:
- (1) The replacement tank is not closer to the nearest resident.
 - (2) The hourly and total emission cap for toluene is not exceeded.
 - (3) An alteration request shall be submitted within 30 days of the change of service to identify the replacement tank and alter the permit conditions to reflect this change.

OPERATING PARAMETERS AND CONDITIONS

31. Flares shall be designed and operated in accordance with the following requirements: (6/09)

- A. The flare systems shall be designed such that the combined assist natural gas and waste stream to each flare meets the 40 CFR § 60.18 specifications of minimum heating value and maximum tip velocity under normal, upset, and planned maintenance flow conditions.

The heating value and velocity requirements shall be satisfied during operations authorized by this permit. Flare testing per 40 CFR § 60.18(f) may be requested by the appropriate regional office to demonstrate compliance with these requirements.

- B. The flare shall be operated with a flame present at all times and/or have a constant pilot flame. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor. The time, date, and duration of any loss of pilot flame shall be recorded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
- C. The flare shall be operated with no visible emissions except periods not to exceed a total of five minutes during any two consecutive hours. This shall be ensured by the use of steam (or air) assist to the flare.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 21

32. The VOC associated with cooling tower water shall be monitored monthly with a portable organic vapor analyzer and/or approved air stripping system or equivalent. The appropriate equipment shall be maintained so as to minimize fugitive VOC emissions from the cooling tower. Faulty equipment shall be repaired at the earliest opportunity but no later than the next scheduled shutdown of the process unit in which the leak occurs. The cooling tower water flow rate shall be recorded on an accumulated monthly and annual basis. Records shall also be kept of monitoring and repair data.
33. Fuel used in the process heaters shall be limited to either natural gas, plant gas, or a combination of natural gas and plant gas. The H₂S concentration shall be monitored and recorded in accordance with NSPS Subpart J.

(PSD 05/09/79 for FCCU II Charge Heater [EPN 110]) (2/02)

34. The East FCCU modifications represented in the alteration application dated March 25, 2008 were determined not to be subject to major new source review by identifying projected actual emission rates for the facilities potentially affected by the project. Upon completion of the modifications, actual emissions from the East FCCU shall be monitored, recorded and reports made in accordance with 30 TAC §116.121 for the time period specified in 30 TAC § 116.121 (b)(1). (2/09)

CONTROL TECHNOLOGY IMPLEMENTATION

35. Flint Hills Resources will commit to the control technology implementation schedule outlined in the attachment entitled "East Refinery Control Technology Implementation Schedule" by the deadlines listed in that attachment. (4/01)

RECORDKEEPING

36. The following records shall be kept quarterly for the purposes of demonstration of compliance with the emission cap:
 - A. Hourly and daily fuel usage records for all heaters authorized by this permit.
 - B. The CEM data collected as required by Special Condition No. 23.
 - C. Hourly and daily cooling tower circulation rates.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 22

- D. All emissions calculated to determine compliance with an emission cap shall be calculated quarterly as described below to provide an accumulated total annual emission for comparison with the established annual emission caps.

For the purposes of demonstration of compliance with the annual emission cap, all FCCU II Regenerator Scrubber, heater, marine vapor combustor, cooling tower, and tank emissions must be calculated quarterly and the monthly emissions and 12-month rolling annual total must be recorded.

The average fuel usage shall be used to calculate quarterly the average monthly firing rate and emission rate for the heaters authorized under this permit.

The emissions from the cooling towers shall be calculated based on the average monthly circulation rate.

The emissions from all IFR tanks, all EFR tanks, and all fixed-roof tanks shall be calculated based on the records identified in Special Condition No. 29G. As an alternative to calculating emissions from tanks storing materials with a true vapor pressure less than 0.5 psia or with a capacity less than 25,000 gallons, the flexible permit emission rate cap contribution from the January 26, 1998 and January 12, 1999 submittals may be used as the estimated actual emissions.

Fixed VOC sources (process fugitives) shall be added directly into the calculated monthly VOC emissions.

- E. The accumulated total annual emissions for each pollutant must be less than its respective permitted annual emission cap. The annual emission caps shall be adjusted if any facilities covered by the flexible permit have been shut down for more than 12 months. The emission caps shall be lowered by an amount that the shutdown facility contributed to the original calculation of the emission cap including any insignificant emission factor for that cap.
- F. After calculating emissions as required under Paragraph D, if the accumulated total annual emissions exceed the established annual emission caps, a report shall be submitted to the TCEQ Regional Office within 30 days of performing the emission cap calculations that show the exceedance.

The report shall identify which emission caps were exceeded, cause of the exceedance (if known), and corrective action that will be taken.

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 23

- G. In order to be consistent with the 12-month rolling basis, any changes in the emissions rates caps shall be phased in on a prorated basis using the emissions rate caps before and after the change and the number of months that the plant has operated under each level of the emissions rate cap.
- H. Demonstration with the hourly emission cap shall be made upon request of representatives of the TCEQ or any local program having jurisdiction. The hourly emission caps shall be adjusted if any facilities covered by the flexible permit have been shut down for more than 12 months. The emission caps shall be lowered by an amount that the shutdown facility contributed to the original calculation of the emission cap including any insignificant emission factor for that cap.

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111] and FCCU II Charge Heater [EPN 110]) (1/01)

- 37. The holder of this permit shall make and maintain records of the following:
 - A. Hours that the SRU, TGTU, or TGI are inoperable or in the event of an excursion, what corrective action is taken.
 - B. Weekly sulfur production.
 - C. Hourly average TGI firebox exit temperatures.
- 38. All records required by these conditions shall be maintained at the plant site for a minimum of two years and be made available to representatives of the TCEQ upon request.

(PSD 05/09/79 for FCCU II Catalyst Regenerator Scrubber [EPN 111] and FCCU II Charge Heater [EPN 110]) (1/01)

- 39. A copy of this permit shall be kept at the plant site and made immediately available at the request of personnel from the TCEQ or the EPA.
- 40. The permit holder shall maintain records of facilities shut down for more than 24 months. These records shall be updated on an annual basis and shall be made available to the TCEQ and the EPA upon request.

The permit holder shall follow the TCEQ memo or policy regarding "PSD applicability for restarting sources that are shutdown for more than two years" (dated August 4, 1998, and any subsequent guidance). If a facility does not follow this policy, the permit holder shall request

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 24

that the facility be removed from the emission caps with the next amendment or renewal application to this permit submitted to the TCEQ. (7/00)

CONTINUOUS AIR MONITORING

41. The following requirements apply to capture systems for FCCU Scrubber (EPN 111), WWTP VCU (EPN FL-125), and Marine VRU (EPN FL-118).

- A. If used for particulate control, complete either of the following once a year
 - (1) Inspect any fan and verify proper operation and inspect the capture system to verify there are no cracks, holes, tears, and other defects once a year; or
 - (2) Verify there are no fugitive emissions escaping from the capture system by performing a visible emissions observation for a period of at least six minutes in accordance with 40 CFR Part 60, Appendix A, Test Method 22.

- B. If used to control pollutants other than particulate, either:
 - (1) 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
 - (2) Once a year, verify the capture system is leak free by inspecting in accordance with 40 CFR Part 60, Appendix A, Test Method 21. Leaks shall be indicated by an instrument reading greater than or equal to 500 ppmv above background.

- C. If there is a bypass for the control device Marine VRU (EPN FL-118) and/or WWTP VCU (EPN FL-125), comply with either of the following requirements :
 - (1) Install a flow indicator that records and verifies zero flow at least once every 15 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 prevent flow out the bypass.

A deviation shall be reported if the monitoring or inspections indicate bypass of the control device.

- D. If any of the above inspections is not satisfactory, the permit holder shall promptly take necessary corrective action. (6/09)

SPECIAL CONDITIONS

Flexible Permit Numbers 6308 and PSDTX137M2

Page 25

42. The marine VRU (EPN FL-118) shall be operated with no visible emissions and have a constant pilot flame during all times waste gas is directed to it. The pilot flame shall be continuously monitored by a thermocouple or an infrared monitor when products that require control are loaded. The time, date, and duration of any loss of pilot flame shall be recorded when products that require control are loaded. Each monitoring device shall be accurate to, and shall be calibrated at a frequency in accordance with, the manufacturer's specifications.
- A. The exhaust temperature shall be monitored and recorded at least once a day when waste gas is directed to the marine VRU.
 - B. The exhaust temperature shall be monitored continuously when waste gas is directed to it. The temperature measurement device shall reduce the temperature readings to an averaging period of six minutes or less and record it at that frequency.
 - C. The temperature monitor shall be installed, calibrated at least annually, and maintained according to the manufacturer's specifications. The device shall have an accuracy of the greater of ± 2 percent of the temperature being measured expressed in degrees Celsius or $\pm 2.5^{\circ}\text{C}$.
 - D. The average exhaust temperature over the loading period shall be maintained above 1100°F when products that require control are loaded.
 - E. Quality-assured (or valid) data must be generated when the marine VRU is operating except during the performance of periodic validation checks. 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 vapor combustor operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgement and the methods used recorded. (6/09)

Dated June 15, 2009

EAST REFINERY CONTROL TECHNOLOGY IMPLEMENTATION SCHEDULE

Flexible Permit Numbers 6308 and PSDTX137M2

<u>EPN</u>	<u>Facility Name</u>	<u>Commitment</u>	<u>Comments</u>
E18TK112	Storage Tank	Install liquid-mounted primary seal unit prior to operation or FCCU II beginning prior to placing tank back in service modified if the stored liquid is subject to Special Condition No. 28A(1).	Out-of-Service

Dated June 15, 2009

EMISSION SOURCES - EMISSION CAPS AND INDIVIDUAL EMISSIONS LIMITATIONS

Flexible Permit Numbers 6308 and PSDTX137M2

EMISSION CAP TABLE

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. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

See Attachment 1 for list of Emission Point Numbers and Source Descriptions for emission points included in each Source Category.

NO_x EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Fired Units	2009	419.50	881.02

CO EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Fired Units	2009	286.83	476.03

SO₂ EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Fired Units	2009	255.18	156.07

PM EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Fired Units, Cooling Towers (5)	2009	48.55	183.11

EMISSION SOURCES - EMISSION CAPS AND INDIVIDUAL EMISSIONS LIMITATIONS

VOC EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Fired Units, Cooling Towers, Tanks, Fugitives, Wastewater, Miscellaneous (4)	2009	370.92	469.32

Cl₂ EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Cooling Towers (5)	2009	0.01	0.01

SPECIATED VOC EMISSION CAPS

Toluene EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Tanks E11TKS21, E11TKS23, E11TKR17, and E11TKR18	2009	1.34	3.01

Xylene EMISSION CAP

Source Categories	Year	lb/hr	TPY **
Tanks E11TKS21, E11TKS32, and E11TKR9	2009	6.55	7.48

Benzene CAP

Source Categories	Year	lb/hr	TPY **
Tanks E11TKR5, E11TKR7, and E11TKR145	2009	1.18	1.99

EMISSION SOURCES - EMISSION CAPS AND INDIVIDUAL EMISSIONS LIMITATIONS

EPN	Source Name	INDIVIDUAL EMISSIONS LIMITATIONS		
		Air Contaminant (3)	lb/hr	TPY **
FL-97/FL-28/ FL-27	Main Flare, West Flare and East Flare	VOC	38.19	99.19
		NO _x	4.06	11.50
		CO	20.92	59.22
		SO ₂	7.30	31.27
		H ₂ S	0.08	0.33
C-108	BTX Cooling Tower	PM	0.17	0.74
		Cl ₂	0.01	0.01
C-109	CrudeII Cooling Tower	PM	0.24	1.05
		Cl ₂	0.01	0.01
C-110	Hydrobon Cooling Tower	PM	0.29	1.26
		Cl ₂	0.01	0.01
<u>SULFUR RECOVERY UNIT NO. 1</u>				
E29H417	SRU No. 1 Heater	VOC	0.02	0.09
		NO _x	0.58	2.53
		CO	0.31	1.38
		PM	0.03	0.12
		SO ₂	0.12	0.32
F-SRU1	SRU No. 1 Fugitives (4)	VOC	0.11	0.47
		CO	0.03	0.15
		H ₂ S	0.07	0.31
FL-87	SRU No. 1 Flare	VOC	0.02	0.04
		NO _x	0.09	0.20
		CO	0.77	1.69
		SO ₂	0.02	0.03

EMISSION SOURCES - EMISSION CAPS AND INDIVIDUAL EMISSIONS LIMITATIONS

EPN	Source Name	Air Contaminant (3)	lb/hr	TPY **
S-84, S-85	SRU No. 1 and No. 2 Tail Gas Incinerator Stacks (TGI)	VOC	0.13	0.56
		NO _x	2.34	10.30
		CO	14.40	62.90
		PM	0.18	0.78
		SO ₂	39.04	171.01
		H ₂ S	0.42	1.82
<u>SULFUR RECOVERY UNIT NO. 2</u>				
F-SRU2	SRU No. 2 Fugitives (4)	VOC	0.11	0.47
		CO	0.03	0.15
		H ₂ S	0.07	0.29
FL-88	SRU No. 2 Acid Gas Flare	VOC	0.02	0.04
		NO _x	0.09	0.20
		CO	0.77	1.69
		SO ₂	0.02	0.03
PROPFRZTST	Propane Freeze Test	VOC	5.10	3.72
E13P45	Firewater Diesel Engine E13P45	VOC	0.12	0.05
		NO _x	6.22	2.73
		CO	1.08	0.47
		PM ₁₀	0.44	0.19
		SO ₂	0.96	0.42
E13P46	Firewater Diesel Engine E13P46	VOC	0.12	0.05
		NO _x	6.22	2.73
		CO	1.08	0.47
		PM ₁₀	0.44	0.19
		SO ₂	0.96	0.42
E13P47	Firewater Diesel Engine E13P47	VOC	0.12	0.05
		NO _x	6.22	2.73
		CO	1.08	0.47
		PM ₁₀	0.44	0.19
		SO ₂	0.96	0.42

EMISSION SOURCES - EMISSION CAPS AND INDIVIDUAL EMISSIONS LIMITATIONS

EPN	Source Name	Air Contaminant (3)	lb/hr	TPY **
E13TK39	Diesel Tank for E13P45	VOC	0.01	0.03
E13TK40	Diesel Tank for E13P46	VOC	0.01	0.03
E13TK41	Diesel Tank for E13P47	VOC	0.01	0.03
<u>PLANNED MAINTENANCE, START-UP, AND SHUTDOWN EMISSIONS</u>				
FL-97/FL-28/ FL-27	Main Flare, West Flare (6) and East Flare	VOC	561.58	1.24
		NO _x	46.03	0.23
		CO	236.94	1.18
		SO ₂	589.76	4.75
		H ₂ S	3.43	0.09
BTX REGEN	BTX Regenerator Vent (6)	NO _x	45.50	2.73
		CO	13.65	0.82
		SO ₂	0.61	0.06
		HCl	0.58	0.03
BTXRGENFUG	BTX Regenerator Fugitives (6) (4)	VOC	0.01	0.03

- (1) Emission point identification - either specific equipment designation or emission point number from a plot plan per Attachment 1.
- (2) Specific point source names. For fugitive sources use area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in Title 30 Texas Administrative Code § 101.1
NO_x - total oxides of nitrogen
SO₂ - sulfur dioxide
CO - carbon monoxide
PM - particulate matter, suspended in the atmosphere, including PM₁₀.
PM₁₀ - particulate matter equal to or less than 10 microns in diameter. Where PM is not listed, it shall be assumed that no PM greater than 10 microns in emitted.
H₂S - hydrogen sulfide
Cl₂ - chlorine
HCl - Hydrogen chloride
- (4) Emission rate is an estimate and compliance is demonstrated by meeting the requirements of the applicable special conditions and permit application representations.

EMISSION SOURCES - EMISSION CAPS AND INDIVIDUAL EMISSIONS LIMITATIONS

- (5) Only the FCCU and sulfolane cooling towers are included in the PM and Cl₂ emission caps.
- (6) Planned MSS activities and emissions emit from this EPN.

* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

24 Hrs/day 7 Days/week 52 Weeks/year or _____ Hrs/year

** Compliance with annual emission limits is on a 12-month rolling average.

Dated June 15, 2009