UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 2, 2020

THE ADMINISTRATOR

Mr. Darius Sweet
Chief Executive Officer
Limetree Bay Terminals, LLC and Limetree Bay Refining, LLC
1 Estate Hope
Christiansted, U.S. Virgin Islands 00820-5652

Re: Final Plantwide Applicability Limit Permit for Limetree Bay Terminals, LLC and Limetree Bay Refining, LLC, St. Croix, U.S. Virgin Islands

Dear Mr. Sweet:

On November 26, 2018, Limetree Bay Terminals, LLC and Limetree Bay Refining, LLC ("Limetree") submitted to the Region 2 Office of the U.S. Environmental Protection Agency an application for a Plantwide Applicability Limit permit for its refining operations located in St. Croix, U.S. Virgin Islands, pursuant to regulations codified at 40 CFR § 52.21(aa).

On September 20, 2019, the EPA issued a draft PAL permit to Limetree and published a Public Notice in the Virgin Islands Daily News on October 9, 2019, to initiate the public comment period for this permit. The EPA held a Public Availability Session and a Public Hearing on November 7 and 8, 2019, respectively, at the University of the Virgin Islands, St. Croix Campus. The EPA received many comments during the public comment period which ended on November 25, 2019.

After considering all comments received, the EPA made revisions to the draft PAL permit. Today, the EPA is issuing the final PAL permit to Limetree (see Enclosure I for the final permit conditions) and is responding to all of the comments (see Enclosure II for the Response to Comments document). The Response to Comments document specifies which conditions of the draft permit have been changed in the final permit and the reasons for the change.

The final PAL permit, the Response to Comments document and a link to the administrative record for this PAL permit decision, including comment letters, a transcript of the public hearing and additional supporting information related to the EPA's final permit decision, are available on the EPA Region 2 website at https://www.epa.gov/caa-permitting/caa-permits-issued-epa-region-2. These documents are also available by searching for "Limetree" at www.regulations.gov. The full contents of the administrative record for this permit decision can be found by viewing the documents in both the proposed action folder and final action folder in the docket at www.regulations.gov.

This final permit decision may be challenged under the Consolidated Permit Regulations, codified at 40 CFR Part 124, that apply to the EPA's processing of this permit decision. Specifically, 40 CFR § 124.19 establishes procedures for administrative appeal of the final PAL permit decision. These procedures specify that any person who filed comments on the draft permit or participated in the public hearings may petition the Environmental Appeals Board in Washington, D.C., to review any condition of the final permit. In addition, any person who failed to file comments or participate in the public hearing on the draft permit may petition for review only to the extent of the changes from the draft permit to the final permit.

Any petition for review under this part must be filed with the clerk of the EAB within 30 days of the service of notice of the final permit decision. The petition for review shall include a statement of the reason(s) for requesting the review, including a demonstration that any issues being raised were raised during the public comment period to the extent required by the regulations at 40 CFR Part 124 and a showing that the conditions in question are based on a finding of fact or conclusion of law which is clearly erroneous. Please see 40 CFR § 124.19 and visit www.epa.gov/eab for more information on the required contents of the petition and procedures for an appeal of this permit decision to the EAB.

NOTE: The usual process for filing petitions for administrative review is discussed below. However, please be sure to consult the EAB's website for updated filing information and procedures, in particular, procedures in light of COVID-19.

All persons petitioning for administrative review must file the original and two copies of the petition with the EAB at the following address:

<u>For Regular Mail</u>
Clerk of the Board
Environmental Appeals Board
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code 1103M
Washington, D.C. 20460-0001

<u>For Hand-Carrier and Federal Express Mail</u>
Clerk of the Board
Environmental Appeals Board
U.S. Environmental Protection Agency
1201 Constitution Avenue, NW
U.S. EPA East Building, Room 3332
Washington, D.C. 20004
Phone number: (202) 233-0122

Parties can also use the EAB's electronic filing procedures. See the EAB's August 12, 2013, Revised Order Authorizing Electronic Filing In Proceedings Before the EAB Not Governed By 40 CFR Part 22, at 40 C.F.R. Part 22 and electronic filing information at https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/General+Information/Electronic+Submission?OpenDocument.

Any petition for review filed with the EAB must also be served on EPA Region 2 at the following address pursuant to the filing and service requirements at 40 CFR § 124.19(i) (See also the EAB's September 2020 Revised Order Authorizing Electronic Service of Documents in Permit and Enforcement Appeals at https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/General+Information/Standing+Orders+&+Procedures?OpenDocument:

Mr. Richard Ruvo
Director, Air and Radiation Division
U.S. EPA Region 2
290 Broadway
New York, New York 10007
ruvo.richard@epa.gov

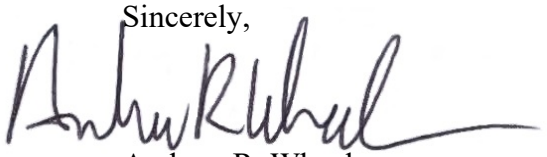
EPA Region 2 will accept service via e-mail as per the EAB's September 2020 Order.

For purposes of judicial review under the *Clean Air Act*, final agency action does not occur until after administrative review procedures are exhausted and the EPA issues a final permit decision. Notice of the agency's final action with respect to this permit will be published in the *Federal Register*. Judicial review of this final action is available by the filing of a petition for review in the United States Court of Appeals for the appropriate circuit within 60 days of the date of the *Federal Register* notice. Only those person(s) who petitioned the EPA under the administrative procedures of 40 CFR Part 124 may petition for review in the Court of Appeals. Under Section 307(b) of the *Clean Air Act*, a final agency action shall not be subject to judicial review in civil or criminal proceedings for enforcement.

Since comments requesting changes to the draft permit were received and changes were made to the draft permit, this final permit will become effective 30 days after the service of notice, unless review is requested under 40 CFR §124.19. If a petition for review of the final permit decision is filed, the permit will not become effective until after the EAB renders a decision on the petition.

If you have any questions regarding this letter, please contact Richard Ruvo, director, Air and Radiation Division, EPA Region 2, at ruvo.richard@epa.gov or (212) 637-4014.

Sincerely,



Andrew R. Wheeler

Enclosures

cc: Catherine Elizee, Limetree
Philip May, RTP Environmental
Verline Marcellin, VIDPNR

ENCLOSURE I

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2

290 Broadway

New York, New York 10007

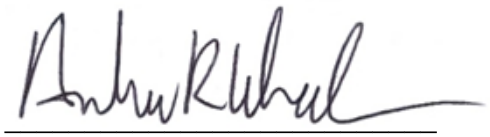
Plantwide Applicability Limit for Limetree Bay Refining and Limetree Bay Terminals, St. Croix, U.S. Virgin Islands

EPA – PAL -VI-001/2019

Pursuant to the provisions of the Clean Air Act, Subchapter I, Part C (42 U.S.C. Section 7470, *et. seq)* and the regulations found at the Code of Federal Regulations Title 40, Section 52.21, the United States Environmental Protection Agency (EPA) is issuing a Plantwide Applicability Limit (PAL) permit to the Limetree Bay Refining and Limetree Bay Terminals, St. Croix, U.S. Virgin Islands.

The design, construction and operation of the source shall be subject to the attached permit conditions and permit limitations and in accordance with the permit application, which was deemed complete on December 28, 2018, and any subsequently submitted supporting material. Failure to comply with any condition or term set forth in this permit is subject to enforcement action pursuant to Section 113 of the Clean Air Act.

This permit shall become effective 30 days after the date of signature unless review is requested on the permit under 40 CFR § 124.19. The permit shall remain in effect until it is surrendered to EPA or expires. This permit does not relieve Limetree Bay Refining and Limetree Bay Terminals from the obligation to comply with applicable state and federal air pollution control rules and regulations.



_____ _12/1/2020_____

Andrew R. Wheeler — Date of Issuance

Administrator

LIMETREE BAY TERMINALS AND LIMETREE BAY REFINING

St. CROIX, U.S. VIRGIN ISLANDS

FINAL PLANTWIDE APPLICABILITY LIMIT PERMIT

EPA – PAL -VI-001/2019

INTRODUCTION

The U. S. Environmental Protection Agency (Region 2) is issuing this final Plantwide Applicability Limit permit for seven air pollutants (PAL)[1] to Limetree Bay Terminals, LLC and Limetree Bay Refining, LLC (together constituting "The Permittee") pursuant to 40 CFR §52.21(aa) for the major stationary source comprising a refinery and related terminal operations ("the source"). Pursuant to 40 CFR §124.15(b), this final permit becomes effective 30 days after the date of signature unless review is requested on the permit under 40 CFR §124.19. The PAL effective period is 10 years from the effective date of final permit issuance. The final permit shall remain in effect until it is surrendered to EPA or expires. The permittee shall submit an application to the U.S. Virgin Islands Department of Planning & Natural Resources within 90 days of the effective date of the final PAL permit, to incorporate the terms and conditions of the final PAL permit into the Clean Air Act title V permit issued by the U.S. Virgin Islands. This final PAL permit establishes plantwide emissions limits for Volatile Organic Compounds (VOC), Nitrogen Oxides (NOx), Carbon Monoxide (CO), Particulate Matter less than or equal to 2.5 micron (PM2.5), Particulate Matter less than or equal to 10 micron (PM10), Particulate Matter (PM), and Sulfur Dioxide (SO2) at this source.

I. PLANTWIDE APPLICABILITY LIMITS

Total plantwide emissions, based on a 12-month rolling total, shall not exceed the emission limits in Table I-1. The Permittee, starting from the effective date of this permit, shall sum the actual emissions of each emissions unit ("unit") across the entire plant by PAL pollutant every month, including the units in the Appendix to this permit and any newly added units, to demonstrate compliance with the Table I-1 limits. For each month during the first eleven (11) months from the PAL effective date, the Permittee shall add the emissions from each unit for the current month to the sum of the preceding monthly emissions since the PAL effective date to demonstrate compliance with the PAL listed in Table I-1 (40 CFR §52.21(aa)(4)(i)(a)). This condition does not supersede any applicable NSPS, NESHAP, PSD emission limits or other applicable federal or Virgin Islands requirements, except as provided under paragraph 40 CFR §52.21(aa)(1)(ii)(c) of the PAL regulations.

[1] This final Plantwide Applicability Limit permit is for seven pollutants. However, for ease of reading, EPA uses the abbreviation "PAL" throughout this document to include both the singular use of the term (one PAL pollutant) and the plural use of the term (two or more PAL pollutants).

Table I-1 PAL

Pollutant	**Plantwide Applicability Limit tons/year; 12-month rolling total basis**
VOC	6,094
NOx	5,594
CO	3,248
PM2.5	399
PM10	412
PM	466
SO2	1,482

II. GENERAL PERMIT CONDITIONS

A. Any physical change or change in the method of operation at the major stationary source, including construction of a new unit, which occurs during the effective period of this PAL permit shall not be considered a major modification under 40 CFR §52.21(b)(2)(i) or have to be approved through the PSD program for a particular PAL pollutant provided that the source continues to comply with the PAL for that particular pollutant through the terms delineated in this permit and the permittee maintains total source-wide emissions below the applicable PAL limit established in Table I-1 (40 CFR §52.21(aa)(1)(ii)).

B. If the Permittee applies to renew this PAL permit before the end of the PAL effective period, and in accordance with the timing and other requirements of 40 CFR §52.21(aa)(10), the PAL shall not expire at the end of the PAL effective period and it shall remain in effect until a renewed PAL permit is issued by the EPA. If the Permittee does not timely submit a complete application to renew the PAL permit in accordance with the procedures of 40 CFR §52.21(aa)(10), the PAL permit shall expire at the end of the PAL effective period and the permittee shall be subject to the requirements of 40 CFR §52.21(aa)(9).

C. Emissions from startups, shutdowns, malfunctions, and fugitive emissions, to the extent quantifiable, shall be included in the emission calculations to determine PAL compliance (40 CFR §52.21(aa)(4)(i)(*d*)). The Permittee shall make a demonstration to EPA, subject to EPA approval, for any emissions from startups, shutdowns, malfunctions and fugitive emissions that it seeks to exclude from the calculations as not quantifiable.

D. The Permittee shall monitor all units in accordance with the emission monitoring requirements in this permit and 40 CFR §52.21(aa)(12) and shall use the calculations procedures in Sections III and IV of this permit to convert emission monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total.

E. Failure to use an emission monitoring system or method that meets the requirements of this permit and 40 CFR §52.21(aa)(12) shall render the PAL permit invalid (40 CFR §52.21(aa)(12)(i)(*d*)).

F. The Permittee shall retain the records as required by this permit and in accordance with 40 CFR §52.21(aa)(13) for a period of at least 5 years from the date of record. The records may be retained in an electronic format.

G. The Permittee shall submit the reports as required by this permit and in accordance with 40 CFR §52.21(aa)(14) to the permitting authority (EPA Region 2) at the address in Section VII of this PAL permit. The reports may be submitted in electronic format.

H. Any reopening of this PAL permit shall be governed by the requirements of 40 CFR §52.21(aa)(8)(ii).

I. Any request by the Permittee to increase the PAL during the PAL effective period shall be governed by the requirements in 40 CFR §52.21(aa)(11).

J. Limetree Terminals, LLC and Limetree Bay Refining, LLC, are each required to comply with all conditions in this permit.

K. For PAL compliance purposes, the Permittee shall record and report the maximum potential emissions without considering enforceable emission limitations or operational restrictions for an emissions unit during any period of time when there are no monitoring data.

L. All site-specific emission factors that were used to establish the PAL pollutant limits in Table I-1 and demonstrate ongoing compliance with the PAL in Table I-1 after permit issuance must be re-validated through performance testing or other scientifically valid means approved by the EPA. Such testing must occur at least once every 5 years after issuance of the PAL permit. Site-specific emission factors shall be deemed to be re-validated if the difference between the initial factor and the validation factor is not statistically significant. If the validation factor is not statistically different from the initial factor, then no update to the emission factor derived from the initial data is required. If the validation factor is statistically different from the initial factor, then the PAL shall be

updated using the validation data-based emission factor. Permittee shall use a 95 percent confidence level to determine if a validation data-based emission factor statistically differs from the data or factor used to establish the PAL. The updated emission factor shall be used to 1) update the PAL in accordance with 40 CFR §52.21(aa)(8)(ii), and 2) determine future emissions for that unit for purposes of determining compliance with the applicable PAL. For the purposes of this permit the term "performance test" shall include stack testing conducted in accordance with the applicable referenced test method in 40 CFR Part 60 Appendix A.

M. In the event that EPA determines, on its own initiative or upon request of the permittee, that a new or updated emission factor or calculation methodology associated with AP-42 becomes available and should be incorporated into the permit, such change will be processed in accordance with 40 CFR §52.21(aa)(8)(ii)(*a*)(*1*).

N. For any unit that is idle on the effective date of this permit, the Permittee shall begin complying with the applicable monitoring, recordkeeping and reporting requirements of this permit immediately upon restart of the idle unit and shall complete all performance tests required by this permit within 6 months after restart.

O. Where the emissions from more than one unit are emitted from a single stack, the Permittee may conduct the validation, performance and stack test on the combined stack emissions provided that all the units are operating simultaneously during such tests.

III. MONITORING METHODS – GENERAL REQUIREMENTS

A. Specific monitoring methods for each unit included in the PAL application are addressed in Section IV and the units are listed in the Appendix to this permit. The Permittee shall comply with 40 CFR §52.21(aa)(12) using one of the following four general monitoring approaches, in order of the most preferred to the least preferred approaches, for: (1) any new unit that is not included in the Appendix to this permit; (2) any modification to an existing unit listed in the Appendix to this permit that requires a change in monitoring; and (3) any future monitoring changes to units listed in the Appendix (as amended) to this permit:

1. Continuous Emissions Monitoring System (CEMS) (40 CFR §52.21(aa)(12)(iv))
   If the Permittee uses CEMS to monitor PAL pollutant emissions, it shall meet the following requirements:

   a. The CEMS must comply with applicable Performance Specifications found in 40 CFR Part 60, Appendix B; and

   b. The CEMS must sample, analyze, and record data at least every 15 minutes while the emissions unit is operating.

2. Continuous Parameter Monitoring Systems (CPMS) or Parametric Emissions Monitoring Systems (PEMS) (40 CFR §52.21(aa)(12)(v))
   If the Permittee uses CPMS or PEMS to monitor PAL pollutant emissions, it shall meet the following requirements:

   a. The CPMS or the PEMS must be based on current site-specific data demonstrating a correlation between the monitored parameter(s) and the PAL pollutant emissions across the range of operation of the emissions unit; and

   b. Each CPMS or PEMS must sample, analyze, and record data at least every 15 minutes, or at another less frequent interval approved by the EPA, while the emissions unit is operating.

3. Emission Factors (40 CFR §52.21(aa)(12)(vi))
   If the Permittee uses emission factors to monitor PAL pollutant emissions, it shall meet the following requirements to establish the unit-specific monitoring method:

   a. All emission factors shall be adjusted, if appropriate, to account for the degree of uncertainty or limitations in the factors' development;

   b. The unit shall operate within the designated range of use for the emission factor, if applicable; and

   c. For major newly constructed units that rely on an emission factor to calculate PAL pollutant emissions, the Permittee shall conduct validation testing to determine a site-specific emission factor within 6 months of constructing the new unit. In addition, major existing or subsequently modified units listed in Section V of this PAL permit shall conduct validation testing within 6 months of issuance of this PAL permit. If any listed unit is not operational when this PAL permit is issued, the validation testing shall be conducted within 6 months after restart of the unit**.**

   d. Site-specific emission factors shall be deemed to be re-validated if the difference between the initial factor and the validation factor is not statistically significant. If the validation factor is not statistically different from the initial factor, then no update to the emission factor derived from the initial data is required. If the validation factor is statistically different from the initial factor, then the PAL shall be updated using the validation data-based emission factor. The Permittee shall use a 95 percent confidence level to determine if a validation data-based emission factor statistically differs from the data or factor used to establish the PAL. The updated emission factor shall be used to 1) update the PAL in accordance with 40 CFR §52.21(aa)(8)(ii), and 2) determine future emissions for that unit for purposes of determining compliance with the applicable PAL.

   e. EPA will review and determine, on a case-by-case basis, whether to grant a request by the Permittee to exempt a unit from validation testing, or delay the

validation testing of a unit, based on a demonstration by the Permittee of technical practicability.

4. Mass Balance (40 CFR §52.21(aa)(12)(iii))
   If the Permittee uses mass balance calculations to monitor PAL pollutant emissions from activities that use coating or solvents, it shall meet the following requirements to establish a unit-specific monitoring method:

   a. Provide a demonstrated means of validating the published VOC content of the PAL pollutant that is contained in or created by all materials used in or at the unit;

   b. Assume that the unit emits all of the PAL pollutant that is contained in or created by any raw material or fuel used in or at the unit, if it cannot otherwise be accounted for in the process; and

   c. Where the vendor of a material or fuel used in or at the unit publishes a range of pollutant content from such material, the Permittee must use the highest value of the range to calculate the PAL pollutant emissions unless the EPA determines there is site-specific data or a site-specific monitoring program to support another pollutant content within the range.

B. For (1) any new unit that is not included in the Appendix to this permit; (2) any modification to an existing unit listed in the Appendix to this permit that requires a change in monitoring; and (3) any future monitoring changes to units listed in the Appendix to this permit, the Permittee shall, in accordance with the semi-annual reporting requirements of Section VII of this Permit, submit to EPA the specific monitoring method for that unit, including formulas and calculation methods, along with a proposed amendment to the Appendix to this permit. In the event of a modification to a unit, the Permittee shall retain the name of the unit as it appeared in the Appendix to this permit upon permit issuance.

C. GENERAL REQUIREMENTS FOR CEMS-MONITORED UNITS

The following general CEMS monitoring requirements shall be incorporated into the calculation procedures in Section IV to determine actual emissions from the units:

1. Pursuant to 40 CFR §52.21(aa)(12)(iv), each CEMS used to monitor PAL pollutant emissions at the source shall comply with the performance specifications in 40 CFR Part 60, Appendix B and sample, analyze, and record data at least every 15 minutes while the unit is in operation. The Permittee shall monitor operating data required to determine compliance with the limit for each PAL pollutant. Operating data necessary to determine emissions of the PAL pollutant based on the CEMs results shall be monitored and recorded.

2. Calculation Procedures

   For CEMS-monitored PAL pollutants, the Permittee shall calculate the pounds-per-hour ("lbs/hr") emission rates from the 15-minute measurements made by the CEMS. The Permittee shall sum the hourly emission data to determine monthly totals, from which the 12-month rolling total emissions in tons/year shall be calculated. For each month during the first 11 months from the PAL effective date, the Permittee shall add the emissions for the current month to the sum of the preceding monthly emissions since the PAL effective date for each unit under the PAL.

D. GENERAL CONDITIONS FOR CONTINUOUS PARAMETER AND PARAMETRIC EMISSIONS MONITORING SYSTEMS

Units that combust refinery fuel gas and/or combust other fuels for which the sulfur content is monitored shall use the general CPMS or PEMS monitoring and calculation procedures in Condition III D(1) and (2) below. The heaters, boilers, sulfur recovery plant incinerators, gas turbines, and compressors that do not use CEMs or Emission Factors shall also use the following general methods to determine the actual emissions:

1. Pursuant to 40 CFR §52.21(aa)(12)(v), a CPMS or PEMS used to monitor PAL pollutant emissions at the source shall be based on the current site-specific monitoring that demonstrates a correlation between the monitored parameter(s) and the PAL pollutant emissions across the range of operation of the unit and must sample, analyze, and record at least every 15 minutes. A less frequent interval shall require EPA approval. The corresponding operating data shall be monitored to determine compliance with the limit for each PAL pollutant. The Permittee shall monitor and record the corresponding operating data.

2. Calculation Procedures
   For CPMS/PEMS-monitored PAL pollutants, the lbs/hr emission rates shall be calculated from the measurements made by the CPMS or PEMS in conjunction with the corresponding operating data. The hourly emission data shall be summed to determine monthly totals, from which the 12-month rolling total emissions in tons/year shall be calculated. For each month during the first 11 months from the PAL effective date, the Permittee shall add the emissions for the current month to the sum of the preceding monthly emissions since the PAL effective date for each unit under the PAL.

E. GENERAL REQUIREMENTS FOR EMISSION FACTOR-MONITORED EMISSIONS

The units that do not use CEMs or CPMS/PEMS emissions or mass balance calculations to monitor, shall use emission factors to calculate the actual emissions on a monthly basis according to the following requirements:

The Permittee shall perform monthly calculations using the best available emission factor based on stack or performance test data, vendor information, design/engineering

calculations, or literature. Unless a different time period is required in Section IV of this permit, the Permittee shall monitor and record, at a minimum on a monthly basis, the operational data necessary to calculate monthly and annual emissions of the PAL pollutants.

F. New units that undergo changes after they are initially added to the Appendix will be governed by permit conditions for existing units that undergo changes.

IV. SPECIFIC MONITORING REQUIREMENTS

A. FLARES

The Permittee shall monitor the SO2 emissions of the gases being flared from the units listed in Table IV-A-1 in accordance with the monitoring requirements in 40 CFR §60.107a(e). The LPG flare which fires a fuel gas that is inherently low in sulfur content as stated in §60.107a (b), shall use engineering calculations to determine SO2 emissions per 40 CFR §60.107a(e)(4). The SO2 emissions from the flares shall be calculated using either the sulfur content of the gases and the flare gas flow rate with the assumption that all sulfur will be converted to sulfur dioxide or the emission factor in 40 CFR Part 60, Subpart Ja for a fuel "inherently low in sulfur."

Table IV-A-1 Flares SO2

Flare	**Parameter**	**Monitored By**
FCCU Low Pressure Flare, FCCU High Pressure Flare, and Flares 2,3,5,6 and 7 40CFR § 60.107a(e)	H2S	CPMS
LPG Flare 40 CFR §60.107a(e)(4)	Inherently Low Sulfur	N/A

The NOx, CO, PM/PM10/PM2.5, and VOC emissions shall be calculated on a monthly basis using the emission factors described in AP-42, Volume I, Chapter 13.5 (February 2018) except where there is a site-specific emission factor in Table IV-A-2 , below.

Table IV-A-2 Flare Gas Monitoring

Pollutant	**Emission Factor lbs/MMBtu – Lower Heating Value (LHV)**	**Emission Factor lbs/MMBtu – Higher Heating Value (HHV)**	**Monitoring Parameters**
NOx	n/a	0.068	Monitor heat input to flare and other parameters necessary, at a minimum on a weekly basis, to calculate monthly emissions. (Monitoring is weekly but using the monitored data and calculation of emissions is monthly)
CO	0.31	n/a	Monitor heat input to flare and other parameters necessary, at a minimum on a weekly basis, to calculate monthly emissions.
PM	n/a	0.00186	Monitor heat input to flare and other parameters necessary, at a minimum on a weekly basis, to calculate monthly emissions.
PM10	n/a	0.00745	Monitor heat input to flare and other parameters necessary, at a minimum on a weekly basis, to calculate monthly emissions.
PM2.5	n/a	0.00745	Monitor heat input to flare and other parameters necessary, at a minimum on a weekly basis, to calculate monthly emissions.
VOC	n/a	n/a	Monitor flare gas speciation and use a 98% destruction efficiency

n/a = not applicable

B. TANKS

For each tank at the source, the Permittee shall monitor and record the following:

- tank size/volume;
- type of tank (e.g., fixed roof);
- liquid transferred/stored;
- throughput rates;
- tank turnovers;
- roof landings;
- true vapor pressure of the liquid;
- any other variable parameters necessary to calculate emissions on a monthly basis in accordance with the following procedures:

1. The VOC emissions from each tank's working and standing losses as well as roof landing and filling losses shall be calculated on a monthly basis using the methodology in the most recent AP-42, Chapter 7.

2. The CO and PM emissions from each tank storing asphaltic materials shall be calculated monthly using the procedures in the most recent edition of AP-42, Chapter 11 and the publication by David C. Trumbore et al., 1999 Environmental Progress Vol 18, "Estimates of Air Emissions from Asphalt Storage Tanks and Truck Loading," Asphalt Technology Laboratory.

C. FCCU Catalyst Regenerator (STK-7501)

1. The Permittee shall monitor and record the NOx, CO and SO2 emissions using the CEMS and calculate the monthly emissions by using the procedures in Table IV-C-1 by determining the exhaust flow rates per 40 CFR §§ 63.1564(b) and 63.1573 and in Section III.

2. For PM, PM10, PM2.5 and VOC emissions, the Permittee may use a correlation between feed rate to exhaust gas volume to calculate the emissions from the FCCU. For this method to be used, the Permittee shall conduct performance tests within 6 months of the effective date of this permit or 6 months after the restart of the unit, whichever is later, to develop the correlation of FCCU feed rate to exhaust gas volume to determine the gas concentrations. Any subsequent performance tests (See Table IV-C-1) shall be conducted at least once every five years but on a shorter period if required by any other permit or regulation. The FCCU feed rate shall be monitored and recorded, at a minimum, on a weekly basis. The PM, PM10, PM2.5 and VOC emissions from the FCCU shall be calculated on a monthly basis based on the most recent stack-test-based emission factor and the operating data specified in Table IV-C-1.

3. For PM, PM10, PM2.5 and VOC emissions, the Permittee may also use an alternate calculation method based on the coke burn rate in the catalyst generator according to the Low Sulfur Fuel Project's Prevention of Significant Deterioration (PSD) Permit.

Table IV-C-1 FCCU Monitoring

Pollutant	**Monitored by**	**Operating Data Required**
NO_x	CEMS	Exhaust gas flow rate determined by 40 CFR §§ 63.1564(b) and 63.1573 methodology
SO2	CEMS	Exhaust gas flow rate as determined by 40 CFR §§ 63.1564(b) and 63.1573 methodology
CO	CEMS	Exhaust gas flow rate as determined by 40 CFR §§ 63.1564(b) and 63.1573 methodology
PM, PM10 and PM2.5	Performance Testing	Exhaust gas flow rate as determined by 40 CFR §§ 63.1564(b) and 63.1573 methodology or determined by feed rate correlation. Alternatively, use coke burn rate in the catalyst regenerator and the method in the Low Sulfur PSD Permit. For PM10 and PM2.5, use particle size fractions of 0.97 for filterable PM10 and 0.80 for filterable PM2.5
VOC	Performance Testing	Exhaust gas flow rate as determined by 40 CFR §§ 63.1564(b) and 63.1573 methodology or feed rate correlation.

D. HEATERS

1. The Permittee shall record the NOx emissions for the unit H-4901 (Table IV-D-1) using the CEMS and calculate the emissions by the procedure specified in Conditions IV.D.2 and IV.D.3 below, and in Section III.

Table IV-D-1 (Heater H-4901)

Heater	**Pollutant**	**Monitored by**
H-4901	NO_x	CEMS

2. For a heater unit with site-specific emission factors in Table IV-D-2, emissions shall be determined using the emission factors listed in Table IV-D-2. For units without site-specific emission factors for any pollutant, emissions shall be determined using the Default Emission factors in Table IV-D-3.

3. The Permittee shall record the fuel flow rate and fuel heat content to determine the heat input rate to each heater. Emission calculations shall be performed and recorded on a unit-by-unit basis using the heat input rate and the listed emission factors in accordance with the procedures described here, at a minimum, on a monthly basis.

Table IV-D-2 Heaters – Unit-Specific Emission Factors based on Stack Tests/AP-42

Heater – Unit	**NOx [lb/MMBtu]**	**CO [lb/MMBtu]**	**PM [lb/MMBtu]**	**PM10 and PM2.5 [lb/MMBTU]**
H-200	0.191	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-201	0.150	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-801	0.094	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-2202	0.132	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-2501	0.085	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-4302	0.102	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H- 4401	0.130	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-4451/4452/ 4453/4454	0.152	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-4455	0.090	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-4602	0.107	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3

H-5302	0.118	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-5401	0.123	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-5451/5452/ 5453/5454	0.142	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
H-5455	0.119	See Table IV-D-3	See Table IV-D-3	See Table IV-D-3
Coker Heater H-8501A	0.0258	0.00264	0.00075	0.0047
Coker Heater H-8501B	0.0288	0.0025	0.000833	0.00225

Table IV-D-3 Heaters - Default Emission Factors – lb/MMBtu;
(Based Upon AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2)

Fuel	**Type**	**NOx**	**CO**	**VOC**	**PM**	**PM10**	**PM2.5**	**SO2**
		Emission Factor (lb/MMBtu)						
No. 6 fuel oil		47/HI	5/HI	0.76/HI	(Note1)	(Note2)	(Note2)	157/HI
Fuel Gas	> 100 MMBtu/ hr	280/ 1020	84/1020	5.5/1020	1.9/1020	7.6/1020	7.6/1020	n/a
Fuel Gas	<100 MMBtu/ hr	100/ 1020	84/1020	5.5/1020	1.9/1020	7.6/1020	7.6/1020	n/a
Fuel Gas	NSPS J	n/a	n/a	n/a	n/a	n/a	n/a	0.02
Fuel Gas	NSPS Ja	n/a	n/a	n/a	n/a	n/a	n/a	0.01

n/a = not applicable

Note 1. No. 6 Fuel Oil, PM (lb/MMBtu) = (9.19(S)+3.22)/HI where S is the weight percent of sulfur in No. 6 Fuel Oil, and HI is the No. 6 Fuel Oil heat input (MMBtu/Mgal)

Note 2. No. 6 Fuel Oil, PM10 (lb/MMBtu) or PM2.5 (lb/MMBtu) = (9.19(S)+3.22+1.5)/HI, where S is the weight percent of sulfur in No. 6 Fuel Oil, and HI is the No. 6 Fuel Oil heat input (MMBtu/Mgal)

E. COMPRESSORS

For compressor units with unit-specific emission factors identified in Table IV-E-1, emissions shall be determined using the unit-specific factors. For units without unit-specific factors for a particular pollutant, emissions shall be determined using the Default Emission factors in table IV-E-2 or based on the best, most current data available (e.g., CEMS, CPMS, PEMS, performance test data, vendor supplied data, or the literature) and be the most

representative of a given unit's operation. The Permittee shall record the fuel flow rate and fuel heat content to determine the heat input rate to each compressor. Emission calculations shall be performed and recorded on a unit-by-unit basis using the heat input rate and the listed emission factors in Table IV-E-1 and Table IV-E-2, at a minimum, on a monthly basis.

Table IV-E-1 Compressors – Unit-Specific Emission Factors based on Stack Tests

Compressor Unit	**NOx – lbs/MMBtu**	**CO - lbs/MMBtu**
C-200A	0.1550	1.6700
C-200B	0.1150	1.6950
C-200C	0.0825	1.0288
C-2400A	0.3783	1.3900
C-2400B	0.0650	0.9450
C-4601A	3.5885	n/a
C-4601B	3.4615	n/a
C-4601C	3.2350	n/a

n/a = not applicable

Table IV-E-2 Compressors – Default Emission Factors in lb/MMBtu
(AP-42, Volume I, Chapter 3.2, Tables 3.2-2 and 3.2-3)

Fuel	**Type**	**NOx**	**CO**	**VOC**	**PM**	**PM10**	**PM2.5**	**SO2**
		Emission Factor (lb/MMBtu)						
LPG	4SRB* ≥90% load	2.21	3.72	0.02963	0.0095	0.0194	0.0194	5.88E-04
LPG	4SRB <90% load	2.27	3.51	0.02963	0.0095	0.0194	0.0194	5.88E-04
LPG	4SLB** ≥90% load	4.08	0.317	0.118	7.7E-05	9.99E-03	9.99E-03	5.88E-04
LPG	4SLB <90% load	0.847	0.557	0.118	7.7E-05	9.99E-03	9.99E-03	5.88E-04

*4SRB - 4 Stroke Rich Bum ** 4SLB- 4 Stroke Lean Bum

F. BOILERS

For boiler units with unit-specific emission factors identified in Table IV-F-1, emissions shall be determined using the unit-specific factors. For units without unit-specific factors for a particular pollutant, emissions shall be determined using the Default Emission factors in Table IV-F-2 or based on the best, most current data available (e.g., CEMS, CPMS, PEMS, performance test data, vendor supplied data, or the literature) and be the most representative of a given unit's operation. The Permittee shall record the fuel flow rate and fuel heat content to determine the heat input rate to each boiler. Emission calculations shall be performed and recorded on a unit-by-unit basis using the heat input rate and the listed emission factors in Tables IV-F-1 and IV-F-2 at a minimum on a monthly basis.

Table IV-F-1 Boilers Unit-Specific Emission Factors Based on Stack Tests

Boiler	**NOx – lb/MMBtu**
#8 Boiler (B-3303)	0.227
#9 Boiler (B-3304)	0.257

Table IV-F-2 - Boilers – Default Emission Factors in lbs/MMBtu
(AP-42, Vol I, Chapter 1.4, Tables 1.4-1 and 1.4-2)

Boiler Fuel	**Type**	**NOx**	**CO**	**VOC**	**PM**	**PM10**	**PM2.5**	**SO2**
		Emission factor (lb/MMBtu)						
#6 Fuel Oil		=47/HI	=5/HI	=0.76/HI	(Note1)	(Note2)	(Note2)	=157(s)/HI
Fuel Gas	>100 MMBtu/hr	=280/ 1020	=84/ 1020	=5.5/ 1020	=1.9/1020	=7.6/1020	=7.6/ 1020	n/a
Fuel Gas	NSPS J	n/a	n/a	n/a	n/a	n/a	n/a	0.02
Fuel Gas	NSPS Ja	n/a	n/a	n/a	n/a	n/a	n/a	0.01
Gaseous Fuel	NSPS D	0.20	n/a	n/a	n/a	n/a	n/a	n/a
Liquid Fuel	NSPS D	0.30	n/a	n/a	n/a	n/a	n/a	0.80

n/a = not applicable

Note 1. No. 6 Fuel Oil, PM (lb/MMBtu) = (9.19(S)+3.22)/HI where S is the weight percent of sulfur in No. 6 Fuel Oil, and HI is the No. 6 Fuel Oil heat input (MMBtu/Mgal).

Note 2. No. 6 Fuel Oil, PM_{10} (lb/MMBtu) or $PM_{2.5}$ (lb/MMBtu) = (9.19(S)+3.22+1.5)/HI, where S is the weight percent of sulfur in No. 6 Fuel Oil, and HI is the No. 6 Fuel Oil heat input (MMBtu/Mgal).

G. GAS TURBINES

The Permittee shall record the NOx and CO emissions for Gas Turbines 9, 10 and 13 referenced in Table IV-G-1 using a CEMS and calculate the emissions by the procedure specified below and in Section III.

Table IV-G-1

Unit	**Pollutant**	**Monitored By**
Gas Turbines 9, 10 and 13	NOx and CO	CEMS

For gas turbine units with unit-specific emission factors identified in table IV-G-2, emissions shall be determined using the unit-specific factors. For units without unit-specific factors for a particular pollutant, emissions shall be determined using the Default Emission factors in Table IV-G-3 or based on the best, most current data available (e.g., CEMS, CPMS. PEMS, performance test data, vendor supplied data, or AP-42) and be the most representative of a given unit's operation. The Permittee shall record the fuel flow rate and fuel heat content to determine the heat input rate to each gas turbine. Emission calculations shall be performed and recorded on a unit-by-unit basis using the heat input rate and the listed emission factors in Table IV-G-2 and IV-G-3 at a minimum on a monthly basis.

Table IV-G-2 Gas Turbines Unit-Specific Emission Factors Based on Stack Tests

Gas Turbine	**NOx – lb/MMBtu**
GT – 4 (G-3404)	0.518
GT – 5 (G-3405)	0.522
GT- 7 (G – 3407)	0.666
GT – 8 (G- 3408)	0.625

Table IV-G-3 Gas Turbines – Default Emission Factors
(AP-42, Volume I, Chapter 3.1)

Fuel	**Type**	**CO**	**VOC**	**PM**	**PM10**	**PM2.5**	**SO2**
		Emission Factor (lb/MMBtu)					
Fuel Gas/ LPG	Uncontrolled- ≥80% load (Note 1)	0.082	0.0021	0.00192	0.0066	0.0066	n/a
Fuel Gas/ LPG	Steam Injection ≥ 80%	0.03	0.0021	0.00192	0.0066	0.0066	n/a
Fuel Gas/ LPG	NSPS J	n/a	n/a	n/a	n/a	n/a	0.02
Fuel Gas/LPG	NSPS Ja	n/a	n/a	n/a	n/a	n/a	0.01
Distillate Oil	Uncontrolled- ≥80% load	0.0033	0.00041	0.0043	0.012	0.012	1.01(s) Note2
Distillate Oil	Stem Injection ≥ 80%	0.076	0.00041	0.0043	0.012	0.012	1.01(s) (Note2)

n/a = not applicable

Note 1. For loads less than 80%, use emission factors as published in AP-42, Chapter 3.1 Background Document (April 2000).

Note 2. S is the weight percent sulfur in the fuel.

H. SULFUR RECOVERY PLANT (Sulfur Recovery Units, Beavon Units, Incinerators, Sulfur Pits, Cooling Towers)

1. Sulfur Recovery Units – The Permittee shall monitor the SO2 emissions from sulfur recovery units with an oxidation control system or a reduction control system followed by incineration using CEMS per 40 CFR §§ 60.102a(f) and 60.106a(a), and calculate the emissions by the procedure specified for CEMS monitored units in Section III. For the

units without any control system, SO2 emissions shall be monitored in accordance with the procedures in the 1997 PSD Permit.

2. SRU Incinerators

   Emissions of NOx, CO, PM, PM10, PM2.5, SO2 and VOC from the SRU incinerators shall be calculated monthly based on the heat input rate and the applicable emission factor which shall be based on Table IV-D-3. Fuel flow rate and heat content data shall be used to determine a given SRU incinerator's heat input rate. Any additional emissions due to accidental releases shall be added to the emissions estimates.

3. West Side Beavon Unit

   Emissions of NOx, CO, PM, PM10, PM2.5 from the Beavon Stack (T-1061) that are generated at the RGG heater (H-1061) shall be calculated monthly based on Conditions IV.D.2 and IV.D.3. Emissions of CO and VOC from the Beavon Units shall be calculated monthly based on the following equation and monitoring tail gas rate and concentration.

   The emissions in lbs/hour shall be calculated using the following equation:

$$BTGU = \frac{TGC \times F_1 \times [1/24] \times TGC \times MW}{MV}$$

   Where:

   BTGU = Beavon Tail Gas Unit Emissions (lb/hr)

   TGM = Tail Gas Flow Rate (MMScf/day)

   F_1 = 1,000,000 Scf/MMScf

   TGC = Tail Gas Concentration (ppmvd/1,000,000)

   MV = Molar Volume (Scf/lb mole)

   MW = Molecular Weight (lb/lb mole)

4. West Side Beavon Unit Cooling Towers

   To determine the PM, PM10 and PM2.5 emission rates from Beavon cooling towers, the Permittee shall monitor the cooling water flow (recirculation) rates, and the Total Dissolved Solids (TDS) content of the water. The Permittee shall use the calculation method below (AP-42, Chapter 13.4 – November 2006) to determine the cooling tower PM and PM10 emissions on a monthly basis. The Permittee shall assume a drift

loss of 0.005% of the flow rate. The Permittee shall calculate Average TDS data from WinBLISS/LIMS lab data system from 2006 or the equivalent.

The Beavon cooling towers PM emissions shall be calculated using the following equation:

$$(PM)_{BCT} = CWF \times F_2 \times OH \times Drift \times F_3 \times TDS \times F_4 \times [1/2000]$$

Where:

$(PM)_{BCT}$ = Beavon Cooling Towers PM Emissions (ton/year)

CWF = Cooling Water Flow Rate (gal/min)

F_2 = 60 min/hr

OH = Operating Hours (hour/year)

Drift = 0.005%

F_3 = 3.785 Liter/gal

TDS = Total Dissolved Solids data from WinBLISS/LIMS lab data system from 2006 or the equivalent

F_4 = 1 lb/453.59 g

PM_x emissions shall be calculated based on droplet size distribution using the method described in "Calculating Realistic PM10 Emissions from Cooling Towers" by Joel Reisman and Gordo Frisbie, where the weight % value for each droplet size can be found in Tables 2 and 3 contained therein.

$$PM_x \text{ (tpy)} = PM \text{ (tpy)} \times (PM_x)wt\%$$

For example:

$$PM_{10} \text{ (tpy)} = PM \text{ (tpy)} \times (PM_{10})wt\%$$

5. Sulfur Pits

   a. The Permittee shall monitor the hours of direct venting to the atmosphere from each sulfur pit, at a minimum, on a weekly basis. The sum of the emissions of PM, PM10 and PM2.5 from all of the sulfur pits shall be calculated using the Table IV-H-1 emission factors and the following calculation method:

      Total Sulfur Pits Emissions (tpy) = EF x MV x 1/2000

Where:

EF = hourly emission rate (lb/hr) from all sulfur pits[Table IV-H-1]

MV = Total Direct Venting Hours from all sulfur pits (hr/yr)

Table IV-H-1 Sulfur Pits Emission Factors

Pollutants from Sulfur Pits	West SRU Sulfur Pit (SRU-1 and SRU-2) (lbs/hr)	SRU-3 (lbs/hr)	SRU-4 (lbs/hr)
PM, PM10 and PM2.5	0.2	0.1	0.1

I. PLATFORMER VENTS

1. The Permittee shall monitor the annual hours of utilization, the annual throughput and the annual hours of venting of each platformer vent. The design capacities of Platformer # 2, #3 and #4 maximum will be 25,000, 45,000 and 45,000 Barrels per day, respectively.

2. The Permittee shall calculate the SO2, CO, and VOC emissions from each platformer catalyst regenerator vent (*i.e.*, #2 Platformer, #3 Platformer, and #4 Platformer) based on each unit's design capacity, annual hours of venting, and the appropriate emission factors as follows:

   SO2 and CO (tpy) emissions shall be calculated using the following equation:

   Emissions = EF x UT/7.5 MBPD x AHV x 1/2000

   Where:

   EF = Emission Factor for SO2 and CO are:

   SO2: 0.022 lb/hr for a 7500 Barrels/day Catalyst Regenerator

   CO: 0.15 lb/hr for a 7500 Barrels/day Catalyst Regenerator

   UT = Unit Throughput in MBPD (thousands of barrels per day)

   AHV = Annual Hours of Venting (hours/year)

   1/2000 = Conversion from pounds to tons

VOC (tpy) emissions shall be calculated using the following equation:

Emissions = EF x UT x ADV x 1/2000

Where:

EF = 0.24 lb/1000 Barrels of Throughput

ADV = Annual Days of Venting (days/year)

UT = Unit Throughput in MBPD

1/2000 = Conversion from pounds to tons

J. SULFURIC ACID PLANTS

Process Stack Emissions (STK-7802): The SO2 emissions from the sulfuric acid plant's process stack shall be monitored using a SO2 CEMS (Table IV-J-1).

Sulfuric Acid Plant Heaters H-7801, H-7802 and R-7801- (STK – 7801): The Permittee shall calculate NOx, SO2, PM10, and PM2.5 emissions on a monthly basis in accordance with Sections IV.D.2, IV.D.3 and Table IV.D.3.

Table IV-J-1 Sulfuric Acid Plant SO_2 Emissions

Unit	**Pollutant**	**Monitored By**
Sulfuric Acid Plant Process Stack (STK-7802)	SO2	CEMS

K. DELAYED COKER STEAM-VENT

1. The Permittee shall monitor the number of coke drum cycles, at a minimum, on a weekly basis.

2. The Permittee shall calculate the CO, PM, PM10, PM2.5, SO2 and VOC emissions from the coker steam vent monthly using performance test-based emission factors derived from testing of the steam vent emissions as listed in Table IV-K-1.

Table IV-K-1 - Emission Factors for the Coker Steam Vent

SO2	CO	PM, PM10, and PM2.5	VOC
2.8 lb/cycle	2 lb/cycle	32.9 lb/cycle	138.4 lb/cycle

L. PROCESS FUGITIVES

1. The Permittee shall monitor the equipment and their components within each process at the source in accordance with the requirements at 40 CFR §60.592 for process equipment subject to 40 CFR Part 60, Subpart GGG and 40 CFR §60.592a for process equipment subject to 40 CFR Part 60, Subpart GGGa.

2. The Permittee shall calculate the fugitive VOC emissions from all process equipment component leaks and compressor and pump seals monthly, except for compressor seals or other equipment equipped with a closed vent system consistent with 40 CFR §§60.592a, 60.482 4a(c), and 60.482 3a(h), using one of the following two methodologies depending on whether the components are subject to instrumental monitoring or are not subject to, or exempt from, monitoring requirements:

   a. Fugitive VOC emissions from components subject to monitoring shall be estimated using the appropriate correlations (*e.g., the Petroleum Industry Leak Rate/Screening Value Correlations*) found in the U.S. EPA's most current *Protocol for Equipment Leak Emission Estimates* and the Modified Trapezoidal method to estimate emissions over time. Fugitive VOC from monitored components shall be managed using LeakDAS software or equivalent. The Permittee may also use the specific applicable default monitored component emission factor in Table IV-L-1 to calculate the VOC emissions.

   b. Fugitive VOC emissions from components not subject to instrumental monitoring or exempt from monitoring requirements shall be calculated using the Refinery Average Emission Factors applicable to each component type (*e.g.*, valves in heavy liquid service) as found in EPA's most current *Protocol for Equipment Leak Emission Estimates*, Table 2-2. Also, where appropriate, the VOC content of the material in a given process area may be used in the emissions estimate to reflect the fact that not all of the material emitted is VOC (*e.g.*, ethane is not a VOC). The Permittee may also use the specific applicable default unmonitored component emission factor in Table IV-L-1 to calculate the VOC emissions.

Table IV-L-1 Monitored/Unmonitored Component Emission Factors

Monitored or Unmonitored Components	**Service**	**VOC Emission Factor lb/hr/components [Unmonitored]**	**Monitored Components' Control Efficiency %**
Valves	Gas/Vapor	0.059	97
	Light Liquid	0.024	97
	Heavy Liquid	0.0005	0
	SOCMI Rule – LL	0.0089	97
Connectors	Gas/Vapor	0.00055	30
	Light Liquid	0.00055	30
	Heavy Liquid	0.00055	0
	SOCMI Rule – LL	0.0005	30
Pressure Relief Valves	Gas/Vapor	0.35	97
Compressor Seals	Gas Vapor	1.399	85
Pump Seals	Light Liquid	0.251	85
	Heavy Liquid	0.046	0
	SOCMI Rule – LL	0.044	85
Open Ended Lines	Gas/Vapor	0.0051	0
	Light Liquid	0.0051	0
	Heavy Liquid	0.0051	0
	SOCMI Rule – LL	0.0038	0
Sampling Connections	Gas/Vapor	0.033	0

	Light Liquid	0.033	0
	Heavy Liquid	0.033	0

M. OILY WASTEWATER COLLECTION SYSTEM AND TREATMENT PLANT

1. The Permittee shall monitor the process drains and junction boxes within the Oily Wastewater Collection System in accordance with the frequencies specified in 40 CFR §61.346-354. Such observation data shall be used to calculate emissions in subparagraph M.2 below. The permittee shall monitor the variable parameter input data including but not limited to stream flows and compositions to calculate emissions from the Advance Wastewater Treatment Plant on a monthly basis per subparagraphs M.3 and M.4. below.

2. The Permittee shall determine the rate of VOC emissions from the Oily Water Collection System using the general uncontrolled emission factor of 0.07 lb/hr/equipment as published by the Texas Commission of Environmental Quality (TCEQ) "Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance" (TCEQ-APDG 6422v2, Revised 06/18), for process drains in refineries with a control efficiency based upon the observations noted during the visual inspections.

3. The Permittee shall determine VOC emissions, including fugitive emissions, from the wastewater pre-treatment units such as # 1, 2 and 3; API Separators #1, 2 and 3; WEMCO units using the emission factor of 0.2 lbs VOC per 1000 gallons of wastewater treated.

4. The Permittee shall determine the VOC emissions from the further wastewater treatment in the Advance Wastewater Treatment Plant using the most current version of EPA's WATER9 model. Variable (*i.e.*, non-static) elements such as stream flows and compositions shall be input into the WATER9 static emissions model to determine the monthly VOC emissions, including fugitive emissions, from the advanced wastewater treatment plant.

N. LOCAL SALES RACK AND SERVICE STATION

The Permittee shall monitor fuel throughput and the type of fuel handled on a weekly basis. The Permittee shall calculate the VOC emissions from truck loading and fuel pump operations monthly using the procedures outlined in Chapter 5.2 (July 2008) of EPA's AP-42 regarding "Transportation and Marketing of Petroleum Liquids."

O. MARINE LOADING OPERATIONS and THERMAL OXIDIZER CONTROL

1. Unless the Permittee uses Condition IV.O.2.b to calculate VOC emissions, the Permittee shall monitor material throughput, material vapor pressure, material molecular weight and ambient conditions in the marine loading operations area to calculate VOC emissions, at a minimum on a weekly basis. In the event that the Permittee uses the method in Condition IV.O.2.a to determine VOC emissions, the Permittee may use the material vapor pressure and the material molecular weight from the current Safety Data Sheets of the material loaded.

2. The Permittee shall use the more representative of the following two methods to determine VOC emissions:

    a. Calculate the VOC emission factors from marine loading operations monthly using the procedures outlined in Chapter 5.2 (July 2008) of EPA's AP-42 regarding "Transportation and Marketing of Petroleum Liquids;" or

    b. Use the default emission factors in Table IV-O-1 and monitor and record the throughput in gallons from the loading area at a minimum, on a weekly basis, to calculate the VOC emissions.

Table IV-O-1. Marine Loading VOC Emission factors

Product	**Barges- Loading Losses lb/1000 gallons**	**Ships – Loading Losses lb/1000 gallons**
Crude Oil	0.8	0.8
Gasoline/Gasoline Blends	3.4	1.8
Platformate	2.6	1.1
MTBE	7.2	2.9
Methanol	1.0	0.4
Toluene	0.6	0.3
Xylene	0.2	0.1
Jet Fuel	0.013	0.005
Kerosene	0.013	0.005

No. 2 Oil	0.012	0.005
Light Cycle Oil	0.04	0.02
CATFEED	0.0002	0.0001
SVGO	0.0002	0.0001
Slurry	0.0002	0.0001
No. 6 Oil	0.00009	0.00004

3. Thermal Oxidizer – Gasoline Transfer Emission Control (Stack H-1612):

   The Permittee shall record gasoline loading/unloading amounts, at a minimum, on a weekly basis. The Permittee shall use the following equations and emission factors to calculate NOx, CO, PM, PM10, PM2.5, and SO2 emissions from the thermal oxidizer on a monthly basis.

   $$MVE = [[HE \times (VOC)_u \times GL \times F_5] + (HR)_{PA}] \times EF \times 365 \times 1/2000$$

   Where:

   MVE = Marine Vapor Thermal Oxidizer Emissions (tons/year)

   HE = Hydrocarbon Enthalpy (John Zink: 19,852 Btu/lb)

   $(VOC)_u$ = 2.6 lbs/1000 gallons of gasoline (Uncontrolled VOC Loading Loss, AP-42 Chapter 5.2 – July, 2008))

   GL = Gas Loading (Mgal/day)

   F_5 = 1 MMBtu/1x10^6 Btu

   $(HR)_{PA}$ = Pilot & Assist Heat Release (John Zink: 138 MMBtu/day)

   1/2000 = Conversion from pounds to tons

   The Permittee shall calculate CO, NOx, SO2 and PM, PM10, and PM2.5 emissions from the Thermal Oxidizer total heat release, from the assist gas and the process gas, in MMBtu using the best, most current data available, or the following emission factors:

EF = Emission Factors (lb/MMBtu):

CO: 0.02lb/MMBtu

NO_x: 0.015 lb/MMBtu

SO2: 0.001 lb/MMBtu

PM, PM10 and PM2.5: 0.01 lb/MMBtu

The Permittee shall use the following equation to calculate VOC emissions from the thermal oxidizer on a monthly basis.

$$MVE_{VOC} = \left[(VOC)_u \times GL \times \frac{(HR)_{PA}}{(HC)_{PA} \times F_s}\right] \times (1 - DRE) \times 365 \times 1/2000$$

Where:

MVE = VOC Marine Vapor Thermal Oxidizer Emissions (tons/year)

(VOC)u = 2.6 lbs/1000 gallons of gasoline (Uncontrolled VOC Loading Loss AP-42 Chapter 5.2 (July 2008))

GL = Gas Loading (Mgal/day)

$(HR)_{PA}$ = Pilot & Assist Heat Release (monitored, MMBtu/day)

$(HC)_{PA}$ = Pilot & Assist Gas Heat Content, Btu/lb

Fs = 1 MMBtu/l xl0^6 Btu

DRE = Destruction Efficiency, (John Zink 99.9%)

1/2000 = conversion from pounds to tons

P. MATERIAL HANDLING

1. The Permittee shall monitor Coke, Sulfur, FCC Catalyst and any other solids handling in terms of production quantities/throughputs, rates, moisture content, and pile areas as well as the wind speed on a monthly basis from the storage areas of the East Dock, West Dock, Dry Dock, Catalyst Handling, and Coke Handling if it chooses to use the emission calculation methods in IV.P.2.a. If the Permittee opts to calculate emissions in accordance with emission factors in Condition IV.P.2.b, then the Permittee shall monitor the parameters whenever these materials are handled.

2. The Permittee shall use one of the following to calculate the PM, PM10 and, PM2.5 emissions from the material storage and handling areas:

    a. The procedures outlined in AP-42, Volume I, Chapter 13.2.4 (November 2006), see "Aggregate Handling and Storage Piles." The stockpile wind erosion calculations outlined in "Development of Emission Factors for Fugitive Dust Sources" (EPA-450/3-74-037), U.S. EPA, June 1974 and the control efficiencies outlined in CHEER (Coal Handling Emissions Evaluation Roundtable) Workshop, TNRCC (May 16, 1995); or

    b. Table IV-P-1, IV-P-2 and IV-P-3 emission factors to calculate monthly emissions for the sulfur handling area, coke handling activities and FCC catalyst handling, respectively.

Table IV-P-1 Sulfur Handling Area Emission Factors

Sulfur Handling Activity	**PM lb/ton**	**PM10 lb/ton**	**PM2.5 lb/ton**	**Control Eff%**
Drop points: SRU drop from conveyor to stockpile Load from Stock to Truck Drop from Truck to Stockpile Load from stockpile into Conveyor	0.013	0.006	0.001	N/A
Conveyor	0.024	0.012	0.002	50
Stockpile Wind Erosion	3.5 lb/acre-day			30%-Basin Stock-Pile 50%-West/East SRU Stockpile

Table IV-P-2 Coke Handling Emission Factors

Coke Handling Activity	**PM – lb/ton**	**PM10 – lb/ton**	**PM2.5- lb/ton**	**Control Efficiency %**
Drop points: Coke Drum to Below Grade Pit Clam shell (or Front-End Loaders) from below grade pit to concrete pad Clam shell (or Front-End Loaders) from concrete pad to crusher	0.001	0.001	0.0001	75
Drop into ships	0.001	0.001	0.0001	50
MC-8601 Crusher	0.02	0.02	0.02	90
Conveyors	(Note 1)	(Note 1)	(Note 1)	90
Dust Collectors	(Note 2)	(Note 2)	(Note 2)	(Note 2)

Note 1. Uncontrolled emission factor is estimated using the AP-42 drop point equation ratioed to the conveyor length: E (lb/ton) = k * 0.0032 * (U/5)^1.3 / (M/2)^1.4 * Conveyor Length (ft) / 300 ft. Where k is the particle size multiplier per AP-42, Ch. 13.2.4-4 (November 2006), U is the average wind speed in miles per hour and M is the moisture content.

Note 2. Emissions based on dust collector exhaust flow rate and efficiency of 0.005 grains per dry standard cubic foot.

Table IV-P-3 FCC Catalyst Handling Emission factors

Catalyst Handling Activity	**PM- lb/ton**	**PM10- lb/ton**	**PM2.5- lb/ton**	**Control Efficiency %**
Load Catalyst to Hopper	0.035	0.016	0.0025	0
Load Catalyst to Reactor, Catalyst Drop Out of Reactor	0.035	0.016	0.0025	50

Q. ROAD TRAFFIC

1. The Permittee shall record the vehicle operation data, using the number of vehicles owned or leased by the Permittee in service and their mileage, within the source on a monthly basis.

2. The Permittee shall calculate the PM, PM10, and PM2.5 emissions from the monthly vehicular traffic using the procedures outlined in AP-42, Volume I, Chapter 13.2.1 (January, 2011), related to "Paved Roads" or by using the default emission factors listed in Table IV-Q-1.

Table IV-Q-1 Road Traffic Emission Factors

	PM	**PM10**	**PM2.5**
EF – lbs/Vehicle Mile Travelled	0.044	0.009	0.002

R. PAINTING

1. The Permittee shall record operating data related to painting including but not limited to container size, number of containers, paint or thinner type, and VOC content, on a monthly basis.

2. The monitoring shall be performed pursuant to 40 CFR §52.21(aa)(12)(iv) as follows:
    - Provide a paint specification sheet from the vendor for validating the content of the VOC that is contained in or created by all materials used in or at the unit;
    - Assume that the unit emits all of the VOC that is contained in or created by any raw material used in or at the unit, if it cannot otherwise be accounted for in the process; and
    - Where the vendor of a material, which is used in or at the unit, publishes a range of pollutant content from such material, the owner or operator must use the highest value of the range to calculate the VOC emissions unless the EPA determines there is site-specific data or a site-specific monitoring program to support another content within the range.

3. The Permittee shall calculate the VOC emissions from painting performed at the source monthly by summing the amount of VOC contained within the paints and thinners that are consumed. In lieu of using consumed paint, the Permittee may use the total amount of paint and/or thinner containers issued by the warehouse and all other paint and/or thinner distribution locations at the source to calculate VOC emissions from painting performed at the source assuming all emissions occur upon a container's issuance in that month.

S. FIRE TRAINING

1. The Permittee shall record the amount of fuel (*i.e.,* gasoline, diesel, or propane) combusted and FireFOAM used on a monthly basis.

2. The Permittee shall calculate the SO2, NOx, CO, PM, and VOC emissions from fire training by using the emission factors published in "Calculation Methods for Criteria Air Pollutant Emission Inventories," Brooks Air Force Base, TX, July 1994. The VOC attributable to the quantity of FireFOAM used shall be added to the amount of VOC resulting from the fuel being used during fire training.

V. PERFORMANCE TESTS

For any major newly constructed emissions unit or units that rely on an emission factor to calculate PAL pollutant emissions, the Permittee shall conduct validation and re-validation testing to determine a site-specific emission factor within 6 months of constructing the new unit. In addition, major existing or subsequently modified units listed in Section V of this PAL permit shall conduct validation testing within 6 months of issuance of this PAL permit.

The Permittee shall conduct performance tests to determine unit-specific emission factor(s) for the process/units listed in Table V-1 within 6 months of the effective date of this permit for the major emissions units but if any listed unit is not operational when this PAL permit is issued, the testing shall be conducted within 6 months after restart of the unit. Where emissions from more than one unit are emitted from a single stack, the performance test may be conducted on a combined stack. For new and modified major emissions units, for the PAL pollutant for which a unit is classified as major, the performance test shall be conducted within 6 months after startup of the new or modified unit. A modified unit with respect to performance testing required in this condition means any unit at which a change will result in a change to the emission factor used to calculate that unit's emissions to comply with the PAL. The performance tests shall be conducted to determine the unit/pollutant-specific emission factors as stated in Table V-1. The unit/pollutant-specific emission factors for the units listed in Table V-1 shall be used to (1) update the PAL in accordance with 40 CFR §52.21(aa)(8)(ii), and (2) determine future emissions for that unit for purposes of determining compliance with the applicable PAL. Any updated site-specific emission factor based on the performance testing under this condition will supersede the previous emission factor from the month following the testing.

With respect to SO2, in lieu of performance testing, the permittee shall assume a 100% conversion of sulfur-in-fuel and sulfur in gases containing H2S being flared or combusted to SO2 in calculating the emissions for the units in Table V-1.

Table V-1 Performance Tests Required to Develop Unit-Specific Pollutant Emission Factors

Process/Unit	Unit ID	Pollutant
#2 Distillation Unit (DU) Fractionator Heaters	H-101, H-104	NOx,
Penex – Hot Oil Heaters	H-202	NOx
Penex – Stationary Reciprocating Engines	C-200A C-200C	CO CO
Utility Fractionation - Heater	H-160	NOx
#4 Distillate Desulfurizer (DD) Heater	H- 2202	NOx
#2 Sulfolane Heaters	H-4502, 4503, 4504 4505	NOx
#5 CDU Heaters	H- 3101A, H3101B	NOx, CO,
#6 CDU Heaters	H-4101A, H-4101B	NOx, CO,
#3 Platformer Heaters	H-4401, H-4402, H-4451, H-4452, H-4453, H-4455	NOx
#3 VAC Unit Heaters	H-4201, H-4202	NOx,
#4 Platformer Heaters	H-5401, H-5402, H-5451, H-5452, H-5453, H-5455	NOx
#6 DD Heater	H-4602	NOx
#6 DD Compressors	C-4601A, C-4601B, C-4601C	NOx
#7 DD Heater	H-4302	NOx
#9 DD Heater	H-5302	NOx

FCCU	Stack 7051	PM, PM10, PM2.5
West Sulfur Recovery Plant	H-1061 (T-1061), H-1032, H-1042,	CO, PM, PM10, PM2.5
East Sulfur Recovery Plant	H-4745	CO, PM, PM10, PM2.5
West Benzene Stripper	Stack - 3510	VOC
Utility Boilers	# 5, #7, #8, #9 and #10	NOx,
Utility Gas Turbines	# 4, #7, #8	NOx, CO,

VI. RECORDKEEPING

A. The Permittee shall retain on site a copy of all records necessary to determine compliance with any requirement of this permit and of the PAL, including determinations on a monthly basis of each unit's 12-month rolling total emissions for each PAL pollutant, for at least 5 years from the date of such record.

B. The Permittee shall retain a copy of the following records for the duration of the PAL effective period plus 5 years:

1. A copy of the PAL permit application and any applications for revisions to the PAL; and

2. Each annual certification of compliance pursuant to title V and the data relied on in certifying the compliance.

VII. REPORTING AND NOTIFICATIONS

The Permittee shall submit semi-annual monitoring reports and prompt deviation reports to the EPA in accordance with the applicable title V operating permit program. The reports shall meet the requirements below.

A. <u>SEMI-ANNUAL REPORT</u>

The semi-annual report shall be submitted to the EPA on August 31 (for the period January 1-June 30) and February 28 (for the period July 1-December 31) each year. Each semi-annual report shall contain the information and documentation required in paragraphs (1) through (8) below:

1. The identification of the Permittee (owner and operator) and the permit number.

2. Total annual emissions (expressed in tons per year) based on a 12-month rolling total for each month in the reporting period recorded and, for the first two semi-annual reports, sums of emissions for the first eleven months after the effective date of the PAL permit.

3. All data relied upon, including, but not limited to, any Quality Assurance or Quality Control data in calculating the monthly and annual PAL pollutant emissions.

4. A list of each unit at the source that is either new or modified per 40 CFR §52.21(b)(2)(iii) during the preceding six-month reporting period. The list shall include the specific monitoring method for each unit, including formulas and calculation methods. The Permittee shall also include a proposed amendment to the Appendix to this permit, for review by EPA, to reflect these changes.

5. A notification of a shutdown of any monitoring system, whether the shutdown was permanent or temporary, the reason for the shutdown, and the anticipated date that the monitoring system will be fully operational or replaced with another monitoring system. The notification should also indicate whether the unit monitored by the shutdown monitoring system continued to operate, and the calculation of the emissions of the pollutant based on maximum potential emissions.

6. A list of each change in the monitoring method during the preceding six-month period for any unit already listed in the Appendix to this permit. The list shall include the specific new monitoring method for each such unit, including formulas and calculation methods. The Permittee shall also include a proposed amendment to the Appendix to this permit, for review by EPA, to reflect these changes.

7. The number, duration, and cause of any deviations or monitoring malfunctions (other than the time associated with zero and span calibration checks), and any corrective action taken.

8. A signed statement by the responsible official (as defined by the applicable title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.

B. DEVIATION REPORT

With the exception of exceedances of the PAL limits in Section I of this permit, the Permittee shall submit a report in accordance with 40 CFR §52.21(aa)(14)(ii) within two working days, of any deviations or exceedance of the PAL requirements, including periods when no monitoring is available. Exceedances of the PAL emission limits in Section I of this permit shall be submitted to EPA in a report within 15 days of the end of the month in which the PAL was exceeded. A report submitted pursuant to the

Permittee's title V permit shall satisfy this reporting requirement, provided that it is submitted to EPA in accordance with the deadlines in this subsection and the Permittee indicates on the deviation report that it serves dual purposes, and it is submitted to EPA.

The deviation reports shall contain the following information:

1. The identification of owner and operator and the permit number;
2. The PAL requirement that experienced the deviation or that was exceeded;
3. Emissions resulting from the deviation or the exceedance; and
4. A signed statement by the responsible official (as defined by the applicable title V operating permit program) certifying the truth, accuracy, and completeness of the information provided in the report.

C. VALIDATION AND RE-VALIDATION RESULTS

The owner or operator shall submit to the EPA the results of any validation or re-validation test or method within 3 months after completion of such test or method, as required in Section V.

D. SUBMISSION OF REPORTS/NOTIFICATIONS BY MAIL AND ELECTRONIC DELIVERY

All reports required by Sections VII(A)(1)-(6), VII(B) and VII(C) shall be sent to the following address:

Chief, Air Compliance Branch
EPA-Region 2
290 Broadway, New York, NY 10007
Buettner.Robert@EPA.gov

All other deliverables shall be sent to the following address:

Chief, Permitting Section
Air Programs Branch
EPA-Region 2
290 Broadway, New York, NY 10007
Chan.Suilin@EPA.gov

VIII. AMBIENT AIR MONITORING REQUIREMENTS

A. The Permittee shall procure, install, and maintain an ambient air monitoring network to monitor the NO2, SO2, and PM2.5 NAAQS in accordance with the following requirements:

1. The monitoring network for each pollutant shall be designed to measure compliance with their respective National Ambient Air Quality Standards (NAAQS) as identified at *https://www.epa.gov/criteria-air-pollutants*, 40 CFR §50, 40 CFR §50.1 (definition

of NAAQS exceedance) and 40 CFR Part 51, Appendix W (definition of NAAQS violation).

2. The Permittee shall submit to EPA a proposed monitoring plan and proposed Quality Assurance Project Plan (QAPP) that includes monitoring for NO2, SO2, and PM2.5 no later than 2 months after the effective date of this permit.

3. The monitoring plan and QAPP for each pollutant must be approved by EPA prior to the installation and operation of the monitors.

4. The Permittee shall install and commence operation of the NO2, SO2, and PM2.5 ambient monitors no later than 6 months after the effective date of this permit.

5. The monitoring network shall include a site-specific meteorological monitor that is installed and operated in accordance with EPA Meteorological Monitoring Guidelines **(**Quality Assurance Handbook for Air Pollution Measurement Systems - Volume IV: Meteorological Measurements (EPA-454/B-08-002), and Meteorological Monitoring Guidance for Regulatory Modeling Applications (EPA-454/R-99-005)) and approved by EPA within the monitoring plan. The meteorological monitor shall be, at a minimum, 10 meters in height and shall be located at the former Cottage Meteorological Station.

6. Permittee shall install and operate five SO2, two NO2, and one PM2.5 ambient air monitors at the following locations:

    a. SO2 Monitoring
        i. Station #1, WEST GATE MARTIN MARIETTA ALUMINA, Lat/Long: 17.7050, -64.7801
        ii. Station #3, PLOT 25, ESTATE CLIFTON HILL, Lat/Long: 17.7205, -64.7763
        iii. Station #4, PLOT 487 ESTATE BARREN SPOT, Lat/Long: 17.7325, -64.7829
        iv. Station #5, PLOT 214 ESTATE RUBY, Lat/Long: 17.7397, -64.7515
        v. New SO2 Station: UTM: 314200.00, 1960100, 36

    b. NO2 Monitoring
        i. Station #1, WEST GATE MARTIN MARIETTA ALUMINA, Lat/Long: 17.7050, -64.7801
        ii. New NO2 Station: UTM: 314300.00, 1960100, 25

    c. PM2.5 Monitoring
        i. New PM2.5 Station: UTM: 314400.00, 1960100, 23

7. In the event that it is infeasible for the Permittee to locate a monitor at the specific coordinates for the new SO2, NO2, and PM 2.5 station, referenced in Condition VIII.A.6 above, the Permittee shall propose to EPA a nearby alternate site and

provide a detailed explanation for the proposed change in the monitoring plan submitted to EPA. This alternate site must be approved by EPA prior to installation of the monitor and implementation of the program.

B. The Permittee shall implement a NO2, SO2, and PM2.5 NAAQS ambient air monitoring program according to the following requirements:

1. The Permittee shall implement the monitoring program in accordance with the NO2, SO2, and PM2.5 ambient air monitoring plan and QAPP which is approved by EPA. No data may be accepted prior to the approval of the monitoring plan and QAPP.

2. After the Permittee receives EPA's approval of the monitoring plan and QAPP, the Permittee shall submit interim status reports to EPA and the Virgin Islands Department of Planning and Natural Resources (DPNR) every month on the progress made by the Permittee until it begins implementing the monitoring program.

3. The Permittee shall follow the Quality Assurance/Quality Control (QA/QC) procedures as specified under 40 CFR Part 58.

4. Monitoring sites must meet EPA siting criteria identified in 40 CFR Part 58 and all methods for monitoring ambient air should be designated as either a reference method or equivalent method in accordance with 40 CFR Part 53.

5. The Permittee must provide the easting and northing locations and the elevation of the new monitors.

6. The monitoring data collection shall continue for the duration of the PAL permit.

7. In collecting the monitoring data, the Permittee shall comply with the EPA approved monitoring plan and QAPP.

8. EPA may re-evaluate its approval of the monitoring plan and QAPP and require changes to one or more of the plans if the Permittee seeks to modify the PAL permit or adds or modifies one or more of the source's units.

9. In the event that EPA approves a change to the monitoring plan or QAPP, all conditions in this Section shall continue to apply.

10. The Permittee shall notify EPA and DPNR of the date of commencement of operation of the monitoring program.

11. The data collection must be done continuously and contain sufficient data capture for determining compliance with the NAAQS consistent with the EPA approved monitoring plan.

12. If an exceedance of any of the NAAQS is measured, the Permittee shall notify EPA and DPNR of such an exceedance in writing within 15 days of Permittee's completion of normal QA/QC procedures for the specified month.

13. In the event that the monitoring data shows a violation of any of the NAAQS, as described in the 40 CFR Part 51, Appendix W, including the longer term averages of these pollutants based on their respective design values, the Permittee shall contact EPA and DPNR immediately, but no later than 15 days after detection of the violation so that action may be taken to resolve the violation which may include reopening the PAL pursuant to 40 CFR §52.21(aa)(8)(ii)(*b*)(*3*).

C. The Permittee shall submit reports of the ambient air monitoring data in the following manner:

1. The monitoring data shall be uploaded to EPA's Air Quality System (AQS) on a quarterly basis ("quarterly reports") as follows:

   a. Quarterly reports shall be uploaded to AQS within 90 days of the end of the last day of each quarter.

   b. An annual report shall be uploaded to AQS within 90 days of the end of the last quarter of the calendar year.

2. In addition, on a quarterly basis, the Permittee shall send a letter to EPA and DPNR confirming that the data was uploaded to AQS along with a summary report of the findings which shall include, at a minimum, an overview of the monitoring data, the percent data capture, and reference to any exceedances or violations of NAAQS.

LIMETREE BAY TERMINALS and LIMETREE BAY REFINING

PAL PERMIT

APPENDIX – Abbreviations and List of Units

Abbreviations

DU	Distillate Unifier	LPG	Liquified Petroleum Gas
H	Heater	C	Compressor
CDU	Crude Distillation Unit	SRU	Sulfur Recovery Unit
VAC	Vacuum Unit	SWS	Sour Water Stripper
DD	Distillate Desulfurizer	GT	Gas Turbine
VIS	Visbreaker	MTBE	Methyl Tertiary Butyl Ether
LSG	Low Sulfur Gasoline	TAME	Tertiary Amyl Methyl Ether
FCCU	Fluid Catalytic Cracking Unit	LP	Low Pressure
GRU	Gas Recovery Unit	HP	High Pressure
WWTP	Wastewater Treatment Plant	API	American Petroleum Institute
TK-TKD	Tank & Tank-Drum	R	Reboiler
PD	Pump Driver	UTT1	Name of the Tank
WEMCO	Manufacturer – Air Flotation Unit	CT	Cooling Tower

FCCU STK-7051
H-101
H-104
H-401A
H-401B
H-401C
H-200
H-201
H-202
H-160
H-601
H-604
H-605
H-800A
H-800B
H-801
H-2201A
H-2201B
H-2202
H-2400
C-2400A
C-2400B
H-2501
H-4502
H-4503
H-4504

H-4505
H-3101A
H-3101B
H-4101A
H-4101B
H-4401
H-4402
H-4451
H-4452
H-4453
H-4454
H-4455
H-4201
H-4202
H-5401
H-5402
H-5451
H-5452
H-5453
H-5454
H-5455
H-4601A
H-4601B
H-4602
C-4601A
C-4601B
C-4601C
H-4301A
H-4301B

H-4302
H-5301A
H-5301B
H-5302
H-1061 (and T-1061)
H-1032
H-1042
H-4761 (and T-4761)
H-4745
H-4901
STK-7801
H-7801
H-7802
R-7801
H-8501A
H-8501B
C-1500A
C-1500B
C-1500C
C-200A
C-200B
C-200C
#5 Boiler (B-1155)
#6 Boiler (B-3301)
#7 Boiler (B-3302)
#8 Boiler (B-3303)
#9 Boiler (B-3304)
#10 Boiler (B-3701)
GT No. 4 (G-3404)

List of PAL Permit Units

GT No. 5 (G-3405)
GT No. 7 (G-3407)
GT No. 8 (G-3408)
GT No. 9 (G-3409)
GT No. 10 (G-3410)
GT No. 13 (G-3413)
H-3413
PD-1602
PD-1603
PD-1604
PD-1605
PD-1620
Unit No. 1030
Unit No. 1040
Unit No. 4740
Unit No. 4750
Beavon CT #1
Beavon CT #2
#2 Flare (H-1105)
#3 Flare (H-1104)
#5 Flare (H-3351)
#6 Flare (H-3352)
#7 Flare (H-3301)
FCC Flare (L.P. Flare - STK 7941)
Ground Flare (H.P. Flare - STK 7942)
LPG Flare (STK 7921)
TK-01PR

TK-02PR
TK-03PR
TK-04PR
TK-05PR
TK-06PR
TK-07PR
TK-0702
TK-1061
TK-1062
TK-1063
TK-1064
TK-1065
TK-1066
TK-1071
TK-1118
TK-1151
TK-1156
TK-1157
TK-1201
TK-1202
TK-1203
TK-1204
TK-1205
TK-1206
TK-1207
TK-1208
TK-1236
TK-1301
TK-1302

TK-1304
TK-1305
TK-1401
TK-1600
TK-1621
TK-1622
TK-1626
TK-1627
TK-1628
TK-1629
TK-1630
TK-1631
TK-1632
TK-1633
TK-1653
TK-1663
TK-2653
TK-2654
TK-3201
TK-3202
TK-3203
TK-3204
TK-3205
TK-3208
TK-3209
TK-3301
TK-3302
TK-3303
TK-3304

List of PAL Permit Units

TK-3305	TK-6817	TK-6859
TK-3306	TK-6818	TK-6860
TK-3384	TK-6819	TK-6871
TK-3385	TK-6820	TK-6872
TK-3386	TK-6821	TK-6873
TK-4501	TK-6822	TK-6874
TK-4502	TK-6823	TK-6875
TK-4503	TK-6824	TK-6876
TK-4761	TK-6825	TK-6877
TK-4762	TK-6831	TK-6880
TK-4763	TK-6832	TK-6881
TK-4764	TK-6833	TK-6883
TK-4765	TK-6834	TK-6884
TK-6801	TK-6835	TK-6887
TK-6802	TK-6836	TK-6888
TK-6803	TK-6837	TK-7051
TK-6804	TK-6838	TK-7201
TK-6805	TK-6839	TK-7202
TK-6806	TK-6840	TK-7206
TK-6807	TK-6841	TK-7207
TK-6808	TK-6842	TK-7208
TK-6809	TK-6843	TK-7209
TK-6810	TK-6851	TK-7210
TK-6811	TK-6852	TK-7211
TK-6812	TK-6853	TK-7301
TK-6813	TK-6854	TK-7302
TK-6814	TK-6856	TK-7401
TK-6815	TK-6857	TK-7402
TK-6816	TK-6858	TK-7403

List of PAL Permit Units

TK-7404	TK-7435	TK-7510
TK-7405	TK-7436	TK-7511
TK-7406	TK-7437	TK-7512
TK-7407	TK-7438	TK-7513
TK-7408	TK-7439	TK-7514
TK-7409	TK-7440	TK-7515
TK-7410	TK-7441	TK-7516
TK-7411	TK-7443	TK-7517
TK-7412	TK-7444	TK-7521
TK-7413	TK-7445	TK-7522
TK-7414	TK-7446	TK-7523
TK-7415	TK-7447	TK-7524
TK-7416	TK-7448	TK-7525
TK-7417	TK-7449	TK-7526
TK-7418	TK-7451	TK-7528
TK-7421	TK-7452	TK-7541
TK-7422	TK-7453	TK-7542
TK-7423	TK-7454	TK-7571
TK-7424	TK-7455	TK-7601
TK-7425	TK-7456	TK-7602
TK-7426	TK-7501	TK-7603
TK-7427	TK-7502	TK-7604
TK-7428	TK-7503	TK-7605
TK-7429	TK-7504	TK-7931
TK-7430	TK-7505	TK-7932
TK-7431	TK-7506	TK-7933
TK-7432	TK-7507	TK-7934
TK-7433	TK-7508	TK-7943
TK-7434	TK-7509	TK-7951

List of PAL Permit Units

TK-7955
TK-7956
TK-7966
TK-7971
TK-7973
TK-7974
TK-S-7974
TK-7975
TK-S-7975
TK-7976
TK-7977
TK-7978A
TK-7978B
TK-7979A
TK-7979B
TK-7981
TK-7982
TK-7983
TK-7984
TK-7986
TK-7987
TK-7988
TK-8001
TK-8002
TK-8501
TK-8502
TK-8503
TK-8505
TK-8508

TK-8511
TK-8701
UTT1
TKD-290 (formerly D1301)
TKD-1609
TKD-1610
#2 Plat Vent
#3 Plat Vent
#4 Plat Vent
STK-7802
Coker Steam Vent
2 CDU
3 CDU / 1 VAC
5 CDU
6 CDU
2 VAC
3 VAC
1 VIS (2 DU FRAC)
2 VIS
2 DD
3 DD
4 DD
5 DD
6 DD
7 DD
9 DD
UT. FRAC.
PENEX

2 PLAT/2 HYDROBON
3 PLAT / 3 HYDROBON
4 PLAT / 4 HYDROBON
LSG
2 SULFOLANE
DISULFIDE
NAP FRAC.
DEISO-HEXANIZER
AMINE (3,4,5 & T-931)
MEROX
1&2 GRU/H2 CON
1&2 LPG TREATER
3 LPG FRAC
FCC & GASCON
DIMERSOL
6 AMINE & SHU
ALKY & ACID PLANT
LIGHT ENDS TREAT
MTBE
TAME
SELECTIVE HYDRO
1 BEAVON / 1&2 SRU
2 BEAVON / 3&4 SRU
SRU
3 SWS

List of PAL Permit Units

4 SWS
5 SWS
6 SWS
DELAYED COKER
Utilities (Powerhouse and Boilers)
EAST FUEL GAS SYSTEM
WEST FUEL GAS SYSTEM
TERMINAL (OFFSITES/RUNDOWNS/XFERS)
West Refinery Oily Water
East Refinery Oily Water
FCC/DCU Oily Water
Terminal Oily Water
#1 API (Unit No. 1660)
#1 WEMCO
#2 API (Unit No. 1661)
#2 WEMCO
West Benzene Stripper (STK-3510)
#3 API (Unit No. 1662)
#3 WEMCO
East Benzene Stripper (STK-3530)
Advanced Waste Water Treatment
Unit No. 1651

Service Station
Unit No. 1600
East Sulfur H&S
West Sulfur H&S
Sulfur Storage, Handling & Shipping
Coke handling, storage, and loading system
FCC Catalyst Handling
Road Dust
Painting
Firefighter Training