UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

MAY - 9 2011

Ms. Kathleen C. Antoine, Environmental Director
HOVENSA L.L.C.
1 Estate Hope
Christiansted, Virgin Islands 00820-5652

Re: Final- Modified 1997 PSD Permit-Replacement of the Converter Heater at the Acid Plant

Dear Ms. Antoine,

On February 23, 2009, the U.S. Environmental Protection Agency's Region 2 Office (EPA) received HOVENSA's February 9th, application proposing modification of the 1997 PSD permit. On March 22, 2011, EPA issued a proposed modification to the 1997 PSD permit for public review that would allow HOVENSA to construct and operate a new ultra low nitrogen oxide (NOx) heater (Converter Heater) replacing an existing low NOx heater at the refinery's sulfuric acid plant. A public notice seeking comments from the public was published on March 29, 2011, in the Virgin Islands Daily News. EPA did not receive any comments during the public comment period which ended on April 28, 2011. Therefore, today EPA is issuing the final modified permit without any changes to the proposed modified permit.

This final modified PSD permit will allow HOVENSA to construct and operate the new ultra low NOx Converter Heater replacing the existing low NOx heater at the refinery's sulfuric acid plant. EPA has determined that this final modified permit meets all applicable requirements of the PSD regulations codified at 40 CFR § 52.21 and the Clean Air Act (the Act). Accordingly, EPA hereby approves HOVENSA's PSD permit modification for the new Converter Heater. This letter and its enclosures represent EPA's final permit decision. A summary of the changes are described in the attached Fact Sheet. The final modified PSD permit can be found in Enclosure I. This final permit decision becomes effective today. Since no comments were received during the public comment period, and EPA did not make any changes from the proposal to the final permit modification, this permit may not be challenged under the Consolidated Permit Regulations, codified at 40 CFR Part 124, that apply to EPA's processing of this permit decision and no judicial review is available. Notice of the Agency's final action with respect to this permit will be published in the Federal Register. Under Section 307(b) of the Act, this final Agency action shall not be subject to judicial review in civil or criminal proceedings for enforcement.

If you have any questions regarding this letter, please call Mr. Steven C. Riva, Chief, Permitting Section, Air Programs Branch, at (212) 637-4074.

Sincerely,

Kevin Bricke, Acting Director
Division of Environmental Planning and Protection

Enclosures

cc: Verline Marcellin, VIDPNR, w/
Angela Arnold, VIDPNR, w/

Fact Sheet

Clean Air Act
Prevention of Significant Deterioration of Air Quality (PSD)
Final Modified Permit – FCCU, Sulfuric Acid Plant, Process Heaters, Tail Gas Treatment Systems and VOC Fugitive Emission Sources
(May, 2011- Supersedes 1997 Permit)

HOVENSA, L.L.C.
ST. CROIX, U.S. VIRGIN ISLANDS

HOVENSA operates an oil refinery on the south shore of St. Croix in the Virgin Islands. This fact sheet was developed under provisions of the Clean Air Act (CAA) for the final PSD permit which the EPA Region 2 is issuing to HOVENSA, L.L.C. for a modification to their Acid Plant Converter Heater operation at its refinery. Today, this permit is revised to replace an existing low NOx "Converter Heater" with a new ultra low NOx "Converter Heater".

- December 12, 1997- HOVENSA received a PSD permit for its FCCU, Acid Plant, Process Heaters etc. for its petroleum refinery.

- February 15, 2009- HOVENSA requested a revision to replace a "Converter Heater" with a new heater to meet its Acid Plant reactor's startup heat load.

- March 17, 2009- EPA informed HOVENSA that this permit cannot be revised administratively because the hourly emission rates are increasing.

- March 2009-December 2010- EPA and HOVENSA considered merging this request with other changes at this refinery and HOVENSA also provided more information on the need for a new heater and why such minimal increases in hourly emission rates (e.g., 0.07 lbs/hr SO2) for the new heater will cause no change to any air quality impact when compared to other much higher emission rates (e.g., 45.8 lbs/hr SO2 from the Acid Plant). The BACT determination will also not change and any air quality impact would be negligible and would not affect the NAAQS or increment.

- HOVENSA also informed EPA that the new heater will help HOVENSA comply with the Acid Plant startup limit of 4 hours.

- EPA determined that since there will be an increase in hourly emission rates, HOVENSA's PSD permit can be revised only after providing an opportunity for a public review.

- EPA proposed the modified permit on March 22, 2011, and published a Public Notice in the Virgin Islands Daily News on March 29, 2011. A thirty (30) day

public comment period ended on April 28, 2011. EPA did not receive any comments on the proposed modification.

Administrative Procedures

The PSD regulations specify procedural requirements (40 CFR § 52.21(q)) which include administrative review of the final permit decision. Procedural requirements for administrative review are defined in the Consolidated Permit Regulations codified at 40 CFR Part 124. Only those persons who filed comments or participate in the public hearing on the preliminary determination may petition for administrative review except to the extent changes are made from the draft to final permit decision. EPA did not receive any comments during the public comment period, therefore, EPA finalized the permit modification without making any changes to the proposed modification to the permit. There is no judicial review available for this action.

MAY 2011, FINAL REVISED CONDITIONS:
(The revised conditions are indicated in bold below)

III. PROCESS HEATERS

A. Sulfuric Acid Plant Heaters (Process Air Heater, Converter Heater, and **Decomposition Furnace**): The maximum combined heat input shall be limited to **42** million British thermal units (MMBtu) per hour. The heaters shall be limited to burning refinery gas or propane as fuel (during all operations), with a hydrogen sulfide content not to exceed 0.1 grains per dry standard cubic foot (gr/dscf).

a. Sulfur Dioxide:

SO_2 emissions shall not exceed **0.79** pounds per hour, 3.2 TPY, 11 ppmv on a dry basis corrected to 7% oxygen.

b. Particulate Matter/PM_{10}:

PM/PM_{10} emissions shall not exceed 0.1 pounds per MMBtu of heat input, **4.2** pounds per hour, 13.4 TPY as determined by EPA RM 5, based on 3 successive test runs using a test protocol approved by EPA. See Section X.B.

c. Nitrogen Oxides:

1. NO_X emissions shall not exceed 0.14 pounds per MMBtu of heat input, **4.6** pounds per hour, 18.4 TPY, 96 ppmv on a dry basis corrected to 7% oxygen.

2. HOVENSA shall use **Ultra Low** NO_X burners in the Converter Heater and low NOx burners in the Process Air Heater and the Decomposition Furnace to control NO_X emissions at all times.

d. Carbon Monoxide:

CO emissions shall not exceed 0.03 pounds per MMBtu of heat input, **1.3** pounds per hour, 3.9 TPY, 32 ppmv on a dry basis corrected to 7% oxygen.

e. Volatile Organic Compounds:

VOC emissions shall not exceed **0.1** pounds per hour, 0.32 TPY or 5 ppmv as methane on a dry basis corrected to 7% oxygen.

VIII. NEW SOURCE PERFORMANCE STANDARDS (NSPS)/NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP):

A. This facility is subject to the General Provisions of the NSPS (40 CFR, Part 60, Subpart A), the NSPS for Sulfuric Acid Plants (40 CFR, Part 60, Subpart H), the NSPS for Petroleum Refineries (40 CFR, Part 60, Subparts J **and Ja (for Sulfuric Acid Plant Converter Heater)**), the NSPS for Volatile Organic Liquid Storage Vessels [Including Petroleum Liquid Storage Vessels](40 CFR, Part 60, Subpart Kb), the NSPS for Equipment Leaks for VOC in Petroleum Refineries (40 CFR, Part 60, Subpart GGG), and the NSPS for VOC Emissions from Petroleum Refinery Wastewater Systems (40 CFR, Part 60, Subpart QQQ).

ENCLOSURE I

Final Modified PSD Permit (May, 2011)
(Original- Hess Oil of Virgin Island Corporation's 1997 PSD Permit)
HOVENSA, LLC, St. Croix, U.S. Virgin Islands

The HOVENSA modification described in the Fact Sheet is subject to the following conditions **(Only Sections III A and VIII A are revised)**:

I. FLUID CATALYTIC CRACKING UNIT (FCCU) COMPLEX:

A. HOVENSA shall limit the maximum throughput to the FCCU to 150,000 barrels per calendar day, and the maximum coke burn-off rate to 105,000 pounds per hour.

B. Sulfur Dioxide (SO_2):

a. HOVENSA shall use a low sulfur content feedstock in which the sulfur content does not exceed 0.6 percent by weight.

b. The concentration of SO_2 in the FCCU stack shall not exceed 50 parts per million by volume (ppmv) on a dry basis corrected to 0% oxygen, as determined by continuous monitoring; or the SO_2 emissions to the atmosphere must be reduced by 90%, whichever is less stringent.

c. The emission rate of SO_2 from the FCCU shall not exceed 195.4 pounds per hour, 855.8 tons per year (TPY), based on the average value of 3 successive test runs using EPA Reference Method (RM) 6C, or the NSPS Method which would be applicable at the time of the test, following a test protocol approved by EPA. See Section X.B. Such tests shall be conducted simultaneously, upstream and downstream of the venturi scrubber.

C. Particulate Matter/PM_{10}:

PM and PM_{10} emissions shall not exceed 1.0 pound per 1000 pounds of coke burn-off or 105.0 pounds per hour (total emissions), or 459.9 TPY from the FCCU catalyst regenerator based on the average value of 3 successive test runs using a test protocol approved by EPA. See Section X.B.

D. Oxides of Nitrogen (NO_X):

a. The maximum concentration of NO_X in the stack gas for the FCCU, as determined by continuous monitoring, shall not exceed 296 ppmv of NO_X on a dry basis corrected to 7% oxygen. The rolling annual average NO_X

concentration shall not exceed 246 ppmv on a dry basis corrected to 7% oxygen. (The rolling annual average shall be calculated based upon a daily average of 24 hourly readings.)

b. The emission rate of NO_X from the FCCU shall not exceed 542.2 pounds per hour (calculated as NO), 1973.7 TPY based on the average value of 3 successive test runs conducted using EPA RM 7E, or the NSPS method which would be applicable at the time of the test following a test protocol approved by EPA. See Section X.B.

E. Carbon Monoxide (CO):

a. HOVENSA shall limit CO emissions to 432 ppmv on a dry basis corrected to 7% oxygen, as determined by continuous monitoring.

b. For any l-hour period the emission rate of CO from the FCCU shall not exceed 738.6 pounds per hour, 3235.0 TPY as tested using EPA RM 10, or the NSPS method which would be applicable at the time of the test following a test protocol approved by EPA. See Section X.B.

F. Volatile Organic Compounds (VOC):

a. HOVENSA shall limit VOC emissions to 20 ppmv on a dry basis corrected to 7% oxygen, 12.1 pounds per hour, 52.7 TPY based on the average of three successive test runs conducted using a test method approved by EPA.

b. EPA reserves the right to require continuous emission monitoring for VOC.

G. Opacity:

a. HOVENSA shall assure efficient scrubber operation by measuring and maintaining the pressure drop across the venturi scrubber throat.

b. The average opacity as measured by a visual emission observation shall not exceed 20 percent, except for one six-minute period in any one-hour period as specified under EPA RM 9.

H. Coke Burn-Off Rate:

a. The coke burn-off rate shall not exceed 105,000 pounds per hour and shall be calculated from the FCCU regenerator flue gas composition. The flue gas will be analyzed daily by EPA RM 3/3A or equivalent analytical method approved by EPA. The flue gas will be analyzed for the following parameters: CO, CO_2, O_2, and inert (Ar, N_2). Water content will be

determined by a psychrometric chart. This data will be input into to the unit's TDC-3000 computer and be used to calculate the coke burn-off rate by the following steps:

1. Continuously measure the air flow rate to the regenerator.

2. Calculate dry air flow rate with psychrometric chart.

3. Adjust regenerator flue gas oxygen analysis for argon (if gc method used). Argon is an inert and should not be included in the oxygen balance calculations (see step 5, below).

4. Calculate the coke carbon content by knowing 1 mol carbon is burned for each mol of CO or CO_2 produced. The CO and CO_2 concentrations are determined daily by analysis of the flue gas.

5. Calculate coke hydrogen content by an oxygen balance between the regenerator air concentration and the flue gas excess oxygen content.

6. Calculate the hourly coke burn-off rate by adding the coke carbon and hydrogen contents. The daily average coke burn-off will be calculated and reported as a rolling average for any 24-hour period.

I. Unit Start-Up

The FCCU is exempt from the concentration emission limits for CO and VOC, as described in sections I.E.a and I.F.a, above, for a maximum of 8-hours during start-up of the unit. This exemption shall only be afforded 3 times per year (based on a 365-day rolling average). Start-up of the FCCU begins with the introduction of feed to the reactor, and concludes when a stable regenerator combustion temperature of 1,280 degrees Fahrenheit (°F) has been achieved. Records relating to start-up of the FCCU must be maintained in accordance with section VI, below.

II. SULFURIC ACID PLANT:

A. HOVENSA shall limit the production of the sulfuric acid plant to a maximum of 320 tons per calendar day.

B. Sulfur Dioxide:

a. The emission rate of SO_2 from the sulfuric acid plant shall not exceed 4 pounds per ton of acid produced, 45.8 pounds per hour, 201 TPY based on

the average value of 3 successive test runs using EPA RM 6C, or the NSPS Method which would be applicable at the time of the test following a test protocol approved by EPA. See Section X.B.

b. The concentration of SO_2 in the stack gas from the sulfuric acid plant shall not exceed 375 ppmv on a dry basis corrected to 7% oxygen, as determined by continuous monitoring.

C. Nitrogen Oxides:

The emission rate of NO_X from the sulfuric acid plant shall not exceed 12.2 pounds per hour (as NO_2), 200 ppmv on a dry basis corrected to 7% O_2, 53.4 TPY based on the average value of 3 successive test runs using EPA RM 7E, or the NSPS method which would be applicable at the time of the test following a test protocol approved by EPA. See Section X.B.

D. Sulfuric Acid Mist (H_2SO_4) and SO_3:

The emission rate of sulfuric acid mist and $S0_3$ (as defined by NSPS) from the acid plant shall not exceed 0.15 pounds per ton of acid produced, 2.0 pounds per hour, 8.8 TPY based on the average of 3 successive test runs using EPA RM 8, or the NSPS Method which would be applicable at the time of the test following a test protocol approved by EPA. See Section X.B.

E. Opacity:

The opacity shall not exceed 10 percent as determined by visual emission observation made in accordance with RM 9.

F. Unit Start-Up

The Sulfuric Acid Plant is exempt from the SO_2 hourly mass emission limit and the SO_2 concentration emission limit, as described in sections II.B.a and II.B.b, above, for a maximum of 4-hours during start-up of the unit. The SO_2 hourly mass emission rate shall not exceed the PSD permitted limit of 45.8 pounds per hour, based on a 3-hour rolling average. This start-up exemption shall only be afforded 8 times per year (based on a 365-day rolling average). Start-up of the sulfuric acid plant begins with the introduction of acid gas or spent acid to the unit, and concludes when the fourth conversion bed achieves a stable temperature above 780°F. Records relating to start-up of the sulfuric acid plant must be maintained in accordance with section VI, below.

III. PROCESS HEATERS

A. Sulfuric Acid Plant Heaters (Process Air Heater, Converter Heater, and Decomposition Furnace): The maximum combined heat input shall be limited to 42 million British thermal units (MMBtu) per hour. The heaters shall be limited to burning refinery gas or propane as fuel (during all operations), with a hydrogen sulfide content not to exceed 0.1 grains per dry standard cubic foot (gr/dscf).

a. Sulfur Dioxide:

SO_2 emissions shall not exceed 0.79 pounds per hour, 3.2 TPY, 11 ppmv on a dry basis corrected to 7% oxygen.

b. Particulate Matter/PM_{10}:

PM/PM_{10} emissions shall not exceed 0.1 pounds per MMBtu of heat input, 4.2 pounds per hour, 13.4 TPY as determined by EPA RM 5, based on 3 successive test runs using a test protocol approved by EPA. See Section X.B.

c. Nitrogen Oxides:

1. NO_X emissions shall not exceed 0.14 pounds per MMBtu of heat input, 4.6 pounds per hour, 18.4 TPY, 96 ppmv on a dry basis corrected to 7% oxygen.

2. HOVENSA shall use ultra low NO_X burners in the Converter Heater and low NOx burners in the Process Heater and the Decomposition Furnace to control NO_X emissions at all times.

d. Carbon Monoxide:

CO emissions shall not exceed 0.03 pounds per MMBtu of heat input, 1.3 pounds per hour, 3.9 TPY, 32 ppmv on a dry basis corrected to 7% oxygen.

e. Volatile Organic Compounds:

VOC emissions shall not exceed 0.1 pounds per hour, 0.32 TPY or 5 ppmv as methane on a dry basis corrected to 7% oxygen.

f. Opacity:

The opacity shall not exceed 17 percent, as determined by continuous monitoring, except for 3 minutes in any consecutive 30 minute period during which 40 percent shall not be exceeded.

g. Unit Start-Up:

The sulfuric acid plant process heaters are exempt from the concentration emission limits for CO and VOC, as described in sections III.A.d and III.A.e, above, for a maximum of 1-hour during start-up of the unit(s). This exemption shall only be afforded 8 times per year (based on a 365-day rolling average). Start-up of a process heater begins with the introduction of feed to the unit, and concludes when minimum, stable temperatures are achieved. Records relating to start-up of the sulfuric acid plant process heaters must be maintained in accordance with section VI, below.

B. Visbreaker #2: The maximum heat input shall be limited to 250 MMBtu per hour. Visbreaker #2 shall be limited to burning only refinery gas or LPG with a hydrogen sulfide content not to exceed 0.1 gr/dscf.

a. Sulfur Dioxide:

SO_2 emissions shall not exceed 4.42 pounds per hour, 19.38 TPY, 13.0 ppmv on a dry basis corrected to 7% oxygen.

b. Particulate Matter/PM_{10}:

PM/PM_{10} emissions shall not exceed 0.1 pounds per MMBtu of heat input, 25.0 pounds per hour, 110 TPY, as determined by EPA RM 5, or the NSPS method which would be applicable at the time of the test following a test protocol approved by EPA. See Section X.B.

c. Nitrogen Oxides:

NO_X emissions shall not exceed 0.2 pounds per MMBtu of heat input, 50.3 pounds per hour, 219 TPY, 148 ppmv on a dry basis corrected to 7% oxygen as determined by continuous monitoring.

d. Carbon Monoxide:

CO emissions shall not exceed 10.2 pounds per hour, 45.1 TPY, 50.0 ppmv on a dry basis corrected to 7% oxygen.

e. Volatile Organic Compounds:

VOC emissions shall not exceed 1.6 pounds per hour, 7 TPY, 15 ppmv as methane on a dry basis corrected to 7% oxygen.

f. Opacity:

The opacity shall not exceed 17 percent as determined by continuous monitoring, except for 3 minutes in any consecutive 30 minute period during which 40 percent shall not be exceeded.

C. Existing Residual Fuel-Consuming Units:

a. The existing residual fuel-consuming units listed in this section shall operate in one of three operating scenarios. During times when persistent, on-shore wind conditions prevail, HOVENSA shall operate the affected units pursuant to the "supplemental control operating scenario." During all other times, HOVENSA shall operate the affected units pursuant to either the "reduced fuel-use operating scenario," or the "normal operating scenario," as described below.

b. HOVENSA shall monitor and record residual fuel-oil usage of all of the oil-fired units listed in this section, for each operating scenario. Monitoring and record keeping shall be performed in accordance with section VI of this permit.

c. Supplemental Control Operation

1. This scenario shall be implemented during times when persistent, on-shore wind conditions prevail, as described below. The residual fuel-oil used when this scenario is implemented shall have a sulfur content not greater than 0.5 percent by weight.

This supplemental control scenario may be modified by EPA to protect against exceedances of the SO_2 National Ambient Air Quality Standards (NAAQS). If it is determined that HOVENSA's use of this supplemental control scenario is causing or contributing to an exceedance of the NAAQS, EPA may terminate this plan through rulemaking procedures.

Specific procedures and protocols to be followed by HOVENSA to implement this supplemental control scenario are delineated in ***Appendix 1***, "Air Quality Control Fuel Switching Plan for Hess Oil Virgin Islands Corp."

2. The supplemental control scenario shall be implemented when any one of the following three conditions occurs:

i. When any one of HOVENSA's five ambient SO_2 monitoring stations records a rolling 24-hour average SO_2 concentration equal to or greater than 75 percent of the 24-hour NAAQS (that is, 274 ug/m^3 or 0.105 ppm).

The monitoring data will be collected according to EPA "SLAMS" procedures but will, for the purposes of this supplemental control scenario, be averaged by the hour, starting on the hour.

ii. During times of persistent on-shore wind conditions. That is, when the hourly average winds blow from a 45 degree sector, defined as 143 to 187 degrees, inclusive, where zero degrees is due north, for at least six consecutive hours during a 24-hour block period, or any 12 non-consecutive hours during a 24-hour block period.

Wind direction will be monitored by a meteorological tower located on HOVENSA property, and will be collected and reported as 1-hour averages, starting on the hour. If the average wind direction for a given hour is from within the designated 45 degree sector, the wind will be deemed to have flowed from within the designated sector for that hour. A 24-hour block period is defined as beginning at midnight, and ending on the following midnight.

iii. When HOVENSA's meteorological station is inoperable for six consecutive hours.

3. During the times when this supplemental control scenario is implemented, the lower sulfur fuel-oil (0.5% sulfur by weight) shall be burned in the following units:

Unit	Source Number(s)
No. 1 VIS	H-101, H-104
3 CDU/1 VAC	H-1401A, H-1401B
No. 2 CDU	H-401A, H-401B, H-401C
No. 2 VAC	H-2101, H-2102
No. 5 CDU	H-3101A, H-3101B
No. 6 CDU	H-4101A, H-4101B
No. 3 VAC	H-4201, H-4202
W UTIL	All West-Side Boilers (B-1151, B-1152A, B-1153, B-1154, B-1155)
E UTIL	All East-Side Boilers (B-3301, B-3302, B-3303, B-3304)

4. HOVENSA may switch back to the higher sulfur fuel-oil (a fuel-oil with a sulfur content of 1.0 percent by weight) in accordance with the following conditions:

   i. If the switch to the lower sulfur fuel-oil was triggered by III.C.c.2.i, above, the switch back to 1.0% sulfur fuel-oil may occur after all five of HOVENSA's ambient SO_2 monitors measure a 24-hour average SO_2 concentration that is less than 75 percent of the SO_2 NAAQS for at least one 24-hour block period, following any occurrence when at least one monitor measured a 24-hour average SO_2 concentration that was 75 percent of the NAAQS or greater.

   ii. If the switch to the lower sulfur fuel-oil was triggered by III.C.c.2.ii, above, the switch back to 1.0% sulfur fuel-oil may occur when the winds blow outside of the 143 to 187 degree sector for at least 3 consecutive hours, following the period during which the winds were blowing inside the designated sector.

   iii. If the switch to the lower sulfur fuel-oil was triggered by both III.C.c.2.i and III.C.c.2.ii, above, the switch back to 1.0% sulfur fuel-oil may occur when both of the conditions delineated under III.C.c.4.i and III.C.c.4.ii are met.

   iv. If the switch to the lower sulfur fuel-oil was triggered by III.C.c.2.iii, above, the switch back to 1.0% sulfur fuel-oil may occur when the meteorological station becomes operable, and 3 consecutive hours of wind conditions outside of the 143 to 187 degree sector have occurred.

d. <u>Reduced Fuel-Use Operation</u>

1. When the supplemental control operating scenario is not being implemented, HOVENSA shall implement either the reduced fuel-use operating scenario or the normal operating scenario, as described in section III.C.e, below. Reduced fuel-use operating scenario: HOVENSA recently improved waste heat recovery in several process units. That is, HOVENSA can recover heat in the form of steam, which reduces the need for steam production by east and west refinery boilers, thereby lowering fuel-use requirements. It is anticipated that, during times when routine, off-shore wind conditions prevail, HOVENSA will operate pursuant to the reduced fuel-use operating scenario a significant part of the time.

2. The units listed below will be limited to the following annual fuel-oil use, based upon operation at the maximum daily rate 90% of the year. [The annual fuel use is calculated by multiplying the number of days operated in this reduced fuel-use operating scenario by the calendar day barrel limit; the maximum annual limit equals 90% of maximum usage.] The residual fuel-oil used when this scenario is implemented shall have a sulfur content not greater than 1.0 percent by weight.

Unit	Source No.	Fuel Oil Limit (Barrels/Day)
No. 1 VIS	H-101, H-104	446
3 CDU/1 VAC	H-1401A, B	408
No. 2 CDU	H 401A,B,C	996
No. 2 VAC	H-2101, 2102	842
No. 5CDU	H-3101A, B	1260
No. 6 CDU	H-4101A,B	1260
No. 3 VAC	H-4201, 4202	1035
W UTIL	B-1155	760
W UTIL	All West Side Boilers (B1151, 1152A, 1153, 1154 1155)	1082
E UTIL	B3301,3302	800
E UTIL	All East Side Boilers (B3301, 3302, 3303, 3304)	1506

3. Should additional fuel be needed at these units, HOVENSA shall be limited to burning only refinery gas or LPG to accommodate such needs.

e. <u>Normal Operation</u>

1. This scenario shall be implemented during times when routine, off-shore wind conditions prevail, and HOVENSA is not operating pursuant to the reduced fuel-use operating scenario.

2. The units listed below will be limited to the following annual fuel-oil use, based upon operation at the maximum daily rate 90% of the year. [The annual fuel use is calculated by multiplying the number of days operated in this normal operating scenario by the

calendar day barrel limit; the maximum annual limit equals 90% of maximum

usage.] The residual fuel-oil used when this scenario is implemented shall have a sulfur content not greater than 1.0 percent by weight.

Unit		Fuel-Oil Limit (Barrels Per Calendar Day)
No. 1 VIS	H-101, H-104	415
3 CDU/1 VAC	H-1401A, H-1401B	0
No. 2 CDU	H-401A, H-401B, H-401C	282
No. 2 VAC	H-2101, H-2102	1,154
No. 5 CDU	H-3101A, H-3101B	1,210
No. 6 CDU	H-4101A, H-4101B	1,210
No. 3 VAC	H-4201, H-4202	1,273
W UTIL	B-1155	592
W UTIL	All West-Side Boilers (B-1151, B-1152A, B-1153, B-1154, B-1155)	2,261
E UTIL	B-3301, B-3302	1,138
E UTIL	All East-Side Boilers (B-3301, B-3302, B-3303, B-3304)	3,325

3. Should additional fuel be needed at these units, HOVENSA shall be limited to burning only refinery gas or LPG to accommodate such needs.

D. Existing Distillate Fuel-Consuming Units:

a. The existing distillate fuel-consuming units listed in this section shall operate in one of two operating scenarios. That is, HOVENSA shall operate the affected units pursuant to either the reduced fuel-use operating scenario, or the normal operating scenario, as described in sections III.C.d and III.C.e, respectively.

b. HOVENSA shall monitor and record the distillate fuel-oil usage of all of the oil-fired units listed in this section, for each operating scenario.

Monitoring and record keeping shall be performed in accordance with section VI of this permit.

c. Reduced Fuel-Use Operation

1. When the reduced fuel-use operating scenario is implemented, the units listed below will be limited to the following annual fuel-oil use, based upon operation at the maximum daily rate 90% of the year. [The annual fuel use is calculated by multiplying the number of days operated in this reduced fuel-use operating scenario by the calendar day barrel limit; the maximum annual limit equals 90% of maximum usage.] The distillate fuel-oil used when this scenario is implemented shall have a sulfur content not greater than 0.2 percent by weight.

Unit	Source Number(s)	Fuel-Oil Limit (Barrels Per Calendar Day)
W UTIL	G1101-E, G1101-F, G1101-G	1,800
E UTIL	G3404, G3405, G3406, G3407, G3408, G3409, G3410	4,000
E & W UTIL	All Turbines	4,800

2. Should additional fuel be needed at these units, HOVENSA shall be limited to burning only refinery gas or LPG to accommodate such needs.

d. Normal Operation

1. When the normal operating scenario is implemented, the units listed below will be limited to the following annual fuel-oil use, based upon operation at the maximum daily rate 90% of the year. [The annual fuel use is calculated by multiplying the number of days operated in this normal operating scenario by the calendar day barrel limit; the maximum annual limit equals 90% of maximum usage.] The distillate fuel-oil used when this scenario is implemented shall have a sulfur content not greater than 0.2 percent by weight.

Unit	Source Number(s)	Fuel-Oil Limit (Barrels Per Calendar Day)
W UTIL	G1101-E, G1101-F, G1101-G	1,539
E UTIL	G3404, G3405, G3406, G3407, G3408, G3409, G3410	3,888
E & W UTIL	All Turbines	5,427

2. Should additional fuel be needed at these units, HOVENSA shall be limited to burning only refinery gas or LPG to accommodate such needs.

e. Other Distillate Oil-Fired Units

The following distillate oil-fired units have no limits on the amount of 0.2% sulfur distillate fuel-oil that can be burned on a daily or annual basis.

P-1602:	Diesel driven standby pump seawater intake
P-1603:	Diesel driven standby pump seawater intake
P-1604:	Diesel driven standby pump seawater intake
P-1605:	Diesel driven standby pump seawater intake
P-1620:	Diesel driven standby pump desalination water

IV. TAIL GAS TREATMENT SYSTEM:

The tail gas treatment system at HOVENSA is comprised of four existing sulfur recovery units (Claus Plants) and two existing Beavon Units.

A. Except as provided below, HOVENSA shall vent all tail gas from the sulfur recovery units to the Beavon units at all times.

B. HOVENSA shall vent the tail gas from the sulfur recovery units in the following manner when one of the two Beavon units is not operating:

a. Transfer all acid gas streams (which may originate at the amine treating unit, sour water stripper, other gas sweetening processes, etc.), excluding that from the acid plant, to the sulfur recovery units associated with the operating Beavon unit.

b. Vent excess tail gas to any of the two existing incinerators when the operating Beavon unit is charged to capacity. HOVENSA shall provide written justification to the EPA describing the nature of the venting and provide planned mitigation procedures to the EPA for prior approval.

C. HOVENSA shall vent all Claus Plant tail gas to any of the two existing incinerators when neither Beavon unit is operating. HOVENSA shall provide written justification to the EPA describing the nature of the outage and provide planned mitigation procedures to the EPA for prior approval.

D. In addition to the conditions set forth in IV.B.a and IV.B.b, above, HOVENSA shall comply with the following when either one or both Beavon units are not operating and tail gas is being vented to an incinerator:

a. HOVENSA shall discontinue the use of 1.0 percent sulfur fuel-oil and revert to the use of 0.5 percent sulfur fuel-oil in all new and existing residual oil-burning sources within the HOVENSA plant.

b. HOVENSA shall limit SO_2 emissions from all incinerators associated with each pair of sulfur recovery units to a total of 30 tons per day.

c. In no event shall tail gas not be vented to the Beavon units for more than 30 days per calendar year, with a maximum of 14 continuous days.

E. HOVENSA shall operate in compliance a continuous emission monitoring system for SO_2/H_2S at the outlet of the sulfur recovery unit(s) in accordance with the Quality Assurance Plan.

F. HOVENSA shall maintain an operation log specifically for the Claus plants and the Beavon units. Such logs shall be made available upon request.

G. HOVENSA shall limit sulfur concentration emissions from both Beavon units to no more than 50 ppmv hydrogen sulfide (H_2S) dry at 0% oxygen as determined by a continuous monitor.

H. HOVENSA shall operate in compliance a continuous emission monitoring system to track the H_2S concentration, flow rate, and temperature at the Beavon stack.

V. VOC FUGITIVE EMISSION SOURCES:

Fugitive emission sources of VOCs include the wastewater treatment system conveyance lines, pump and compressor seals, cooling towers, valves and flanges, and storage and loading facilities.

A. HOVENSA shall monitor fugitive emissions from the FCCU complex in accordance with the requirements of NSPS Subpart GGG, Fugitive Equipment Leaks in Petroleum Refineries.

B. The wastewater treatment system conveyance lines shall incorporate traps and shall be enclosed, wherever possible.

C. The API (American Petroleum Institute) separator shall be covered.

D. HOVENSA shall utilize dual mechanical pump and compressor seals, wherever possible.

VI. MONITORING, RECORDING, and RECORD KEEPING:

A. The FCCU complex, the visbreaker, the sulfuric acid plant, the sulfuric acid plant process heaters, and the tail gas treatment plant shall be equipped with operable continuous emission monitors to measure the pollutants and/or operating parameters, as indicated below:

FCCU Complex:	CO, O_2, NO_X, and SO_2 (inlet and outlet of the venturi gas scrubber for SO_2), regenerator temperature, and pressure across the venturi scrubber throat
Sulfuric Acid Plant:	O_2, SO_2
Sulfuric Acid Plant Heaters:	Opacity, O_2
Visbreaker #2:	NO_X, Opacity, O_2
Tail Gas Treatment:	SO_2/H_2S analyzers at outlet of the sulfur recovery unit(s), and H_2S at outlet of the Beavon Unit(s)

B. HOVENSA shall install, calibrate and test each continuous emission monitor (CEM) and recorder listed in VI.A. Monitors must comply with EPA performance and siting specifications pursuant to 40 CFR Part 60, Appendix B, Performance Specifications 1-4. Equipment specifications, calibration and operating procedures, and data evaluation and reporting procedures shall be submitted to EPA in a Performance Specification Test protocol. EPA reserves the right to require the auditing of the CEMs by independent agents.

C. Records shall be kept to accurately maintain the following:

a. the daily fresh feed rate (barrels), and the sulfur content of the feed to the FCCU complex;

b. the daily coke burn-off rate (1000 pounds per hour) and hours of operation for the FCCU regenerator;

c. the daily tons of sulfuric acid produced;

d. the fuel-oil fired (in barrels and gallons) in all of the fuel-oil fired units listed in Sections III.C and III.D of this permit;

e. the date and time of each change in operating scenario under Sections III.C and III.D of this permit;

f. exceedance of the emission limitations of this permit, as determined by continuous monitoring;

g. the sulfur content of all fuel oil burned;

h. the H_2S content of all refinery gas burned;

i. Reference Method 9 readings at the sulfuric acid plant;

j. the scrubber water feed rate; and

k. the beginning, duration and completion of start-up episodes for the FCCU complex, the sulfuric acid plant and the sulfuric acid plant process heaters, pursuant to the emission exemptions of Sections I, II and III of this permit. Also, the reason(s) for the prior shutdown of these facilities must be recorded.

D. All records specified in this Section must be maintained for a period of five years after the date of record, and must be made available for inspection by the EPA and the Virgin Islands Department of Planning and Natural Resources (VIDPNR), upon request.

E. In each report quarter, a 95% quality data availability shall be maintained for all opacity monitors, and a 90% quality data availability shall be maintained for all gaseous monitors. There shall be a quality assurance plan coupled with a calibration and maintenance program.

F. HOVENSA shall continuously monitor wind conditions in accordance with the HOVENSA Meteorological Monitoring Plan dated September 5, 1991. Data on wind direction shall be monitored and recorded. The HOVENSA meteorological station shall be audited semiannually by an independent party. Maintenance and calibration records shall be maintained.

G. HOVENSA shall operate five ambient SO_2 monitoring stations, two to the west of the refinery and three to the north of the refinery, for purposes relating to the supplemental control scenario as delineated under section III.C.c of this permit. These monitors shall record hourly average and 24-hour rolling average SO_2 concentrations. In the event that monitoring data indicate an exceedance of the NAAQS, HOVENSA shall report the exceedance to EPA, and shall recommend corrective action and modifications to the supplemental control scenario, to ensure protection of the NAAQS.

H. HOVENSA shall develop a plan to monitor the residual and distillate fuel-oil usage pursuant to Sections III.C and III.D of this permit. Such a plan must be approved by EPA.

VII. REPORTING REQUIREMENTS:

A. All emission reports, testing reports, start-up notifications, and any other reports required under this permit shall be submitted to the EPA official named below. Three copies of any stack test report must be submitted within 60 days after completion.

Chief, Air Compliance Branch
Division of Enforcement and
Compliance Assistance
U.S. EPA Region 2 Office
290 Broadway
New York, NY 10007-1866

B. Upsets/Malfunctions:

a. Upsets/Malfunctions, changes in operating scenarios, and implementation of the HOVENSA supplemental control plan must be reported by telephone or facsimile within four hours, with a follow-up letter submitted within seven calendar days to:

Director, Division of Environmental Protection
Virgin Islands Department of Planning and Natural Resources
1118 Water Gut Homes
Christiansted
St. Croix, U.S. Virgin Islands 00820
Phone: (340) 773-1082

Fax: (340) 773-9310

b. HOVENSA shall submit a written report of excess emissions, the number of days operating under each operating scenario, and operation of the HOVENSA supplemental control plan to EPA every calendar quarter. All quarterly reports shall be postmarked by the 30th day following the end of each calendar quarter and shall include the information specified below:

1. For excess emissions from the FCCU complex, provide the following information:

   i. The magnitude of excess emissions computed in accordance with 40 CFR Part 60.13(h), all conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions.

   ii. Specific identification of each period of excess emissions that occurred during start-ups, shutdowns, and malfunctions of the affected facility.

   iii. The nature and cause of any malfunction of the affected facility (if known), and the corrective action taken or preventative measures adopted.

2. For apparent excess emissions due to CEM malfunction, provide the date and time identifying each period during which the continuous monitoring system was inoperative (not including zero and span checks), and the nature of the system repairs or adjustments.

3. When no excess emissions have occurred, or the continuous monitoring system(s) has not been inoperative, repaired or adjusted, such information shall be stated in the report.

4. For the existing fuel-consuming units, provide the number of days of operation for each operating scenario implemented during the reporting quarter.

5. For implementation of the HOVENSA supplemental control plan, provide the date(s) and time(s) for each period that this plan was operational. If the plan was triggered by SO_2 monitoring data, provide the monitoring data. If the plan was triggered by wind conditions, provide the wind data that resulted in plan implementation, as well as wind data for the duration and conclusion of plan implementation. Each semiannual

meteorological station audit report shall be submitted with the appropriate quarterly report.

c. The quarterly excess emission reports required in this section shall be sent to the following EPA official, and copies must also be sent to the Chief of the Air Compliance Branch, EPA Region 2, and the Director of the Division of Environmental Protection, VIDPNR, at the addresses listed above.

Region 2 CEM Coordinator
Monitoring and Assessment Branch
Division of Environmental Science and Assessment
U.S. EPA Region 2 Office
2890 Woodbridge Avenue
Edison, New Jersey 08837

VIII. NEW SOURCE PERFORMANCE STANDARDS (NSPS)/NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP):

A. This facility is subject to the General Provisions of the NSPS (40 CFR, Part 60, Subpart A), the NSPS for Sulfuric Acid Plants (40 CFR, Part 60, Subpart H), the NSPS for Petroleum Refineries (40 CFR, Part 60, Subpart J and Ja (for the Sulfuric Acid Plant Converter Heater)), the NSPS for Volatile Organic Liquid Storage Vessels [Including Petroleum Liquid Storage Vessels](40 CFR, Part 60, Subpart Kb), the NSPS for Equipment Leaks for VOC in Petroleum Refineries (40 CFR, Part 60, Subpart GGG), and the NSPS for VOC Emissions from Petroleum Refinery Wastewater Systems (40 CFR, Part 60, Subpart QQQ).

B. This facility shall demonstrate compliance with the General Provisions of the NESHAP (40 CFR, Part 61, Subpart A), the National Emission Standard for Equipment Leaks [Fugitive Emission Source] of Benzene (40 CFR, Part 61, Subpart J), the National Emission Standard for Equipment Leaks [Fugitive Emission Source] (40 CFR, Part 61, Subpart V), and the National Emission Standard for Benzene Waste Operations (40 CFR, Part 61, Subpart FF).

IX. OTHER PERMIT CONDITIONS:

A. HOVENSA shall meet all other applicable federal, state and local requirements, including those contained in the Virgin Islands State Implementation Plan (VISIP).

X. TESTING REQUIREMENTS:

A. HOVENSA shall conduct stack tests at the FCCU complex and at the sulfuric acid plant, in accordance with the test methods published in 40 CFR Part 60, Appendix A. All tests on a given unit must be conducted within 60 days after achieving maximum production rate at which the facility will normally be operated, but no later than 180 days after initial start-up at the revised rates established by this permit.

B. HOVENSA shall obtain approval of a stack test protocol. A detailed description of the sampling point locations, sampling equipment, sampling and analytical procedures, data reporting forms, quality assurance procedures and operating conditions for such tests must be submitted to the EPA at least 120 days prior to start-up of the facility.

C. HOVENSA shall notify EPA and VIDPNR at least 30 days prior to actual testing.

D. HOVENSA shall provide permanent sampling and testing facilities as may be required by the EPA to determine the nature and quantity of emissions from the FCCU. Such facilities shall conform with all applicable laws and regulations concerning safe construction and safe practice.

E. EPA reserves the right to require additional stack testing of the pollutants for which an emission limitation has been established in Sections I, II and III of this permit.