



Region 6 Compliance Assurance and Enforcement Division
INSPECTION REPORT

Inspection Date(s):	8/22-24/2017		
Media:	Air		
Regulatory Program(s)	Consent Decree, Civil Action 07-CV-00248-MAC		
Company Name:	Total Petrochemicals and Refining USA, Inc.		
Facility Name:	Port Arthur Refinery		
Facility Physical Location:	7600 32 nd Street		
(city, state, zip code)	Port Arthur, TX 77642-7901		
Mailing address:	P.O. Box 849		
(city, state, zip code)	Port Arthur, TX 77641-0849		
County/Parish:	Jefferson County		
Facility Contact	Jannetta Ned	Environmental Engineering Advisor	
	409/985-0268		
FRS Number:	110000755200		
Identification/Permit Number:			
Media Number:	EIS #		
NAICS:	324110		
SIC:	2911		
Facility Representatives:	Jannetta Ned	Consent Decree Coordinator	409/985-0268
EPA Inspectors:	Jim Gold	Region 6, 6EN-ASH	281/983-2153
	Prince Nfodzo	Region 6, 6EN-AA	214/665-7491
State Inspector(s):			
Other Inspector(s):	NA		
Metadata	Title:	Total Petrochemicals and Refining, Port Arthur, Texas, Jefferson County	
	Author:	US EPA Region 6 Compliance Assurance and Enforcement Division Dallas TX	
	Subject:	Partial Compliance Evaluation Inspection Report	
	Keywords:	refinery consent decree (CD)	
EPA Lead Inspector	Jim Gold	<i>Jim Gold</i>	10/31/2017
Signature/Date	Report delayed due to Hurricane Harvey and RSC duty.		Date
Supervisor	Sam Tates	<i>Samuel Tates</i>	11/9/2017
Signature/Date			Date

Section I - INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Region 6 inspectors Jim Gold and Prince Nfodzo conducted an inspection of the Total Petrochemicals and Refining USA, Inc. Port Arthur, Texas Refinery. At 1:00 pm on August 22, 2017, we met with Jannetta Ned, Environmental Engineering Advisor for the facility, for an opening conference. I presented my credentials to Ms. Ned and informed her that this was an EPA inspection to determine compliance with the federally issued Consent Decree (Civil Action Number 07-CV-00248-MAC). I also informed Ms. Ned that the inspection would be a Partial Compliance Evaluation (PCE), which includes an evaluation of the four marquee issues addressed by the Consent Decree (CD): NO_x/SO₂ reductions, leak detection and repair (LDAR), benzene waste operations (BWON) and flaring of both acid gases and hydrocarbons.

The CD consists of 15 Parts designated by Roman numerals I through XV. Of these, Parts V through IX require affirmative relief and is the focus of this inspection. These Parts address the requirements of NO_x, SO₂, CO, particulate, VOC, and benzene emission reductions through various construction projects, process additives, and process and program enhancements. The consent decree was amended in 2013 to a 6BQ option for Benzene Waste NESHAP and an Alternative Monitoring Plan was approved for wet gas scrubber (WGS) monitoring serving the fluidized catalytic cracking unit (FCCU). Note that these inspection findings pertain only to the compliance status affecting Total's Port Arthur refinery. Photos taken during the inspection (25) are included as **APPENDIX 1**. Sign in sheets for the opening conference and each day of the inspection is included as **APPENDIX 2**.

FACILITY DESCRIPTION

The facility has had multiple upgrades since original construction and now has the capacity to refine 232,000 barrels per day and operates as a fully integrated refinery with crude distillation, FCCU, alkylation (sulfuric acid), catalytic reforming, hydrodesulphurization, sulfur recovery, and fuel blending. Main products are transportation fuels. Crude oil is obtained primarily by ship and pipeline, products leave the facility by pipeline, railcar, tank truck, and marine shipping. A plant wide process flow diagram, written facility description and aerial photo are included as **APPENDIX 3**.

A detailed list of processes and descriptions can be found in Appendix A of the CD. The CD can be accessed via internet at <https://www.epa.gov/sites/production/files/documents/total-cd.pdf>

Section II - OBSERVATIONS

Part V, New Source Review/Prevention of Significant Deterioration Requirements ("NSR/PSD")

A. Control of NO_x Emissions from FCCUs

Status: Complete.

Program Summary: TOTAL shall limit NO_x emissions from any FCCU to 30 ppmvd NO_x or less on a 365 day rolling average and 60 ppmvd NO_x or less on a 7-day rolling average.

TOTAL operates one FCCU at the Port Arthur facility.

APPENDIX 4 contains the NO_x emission trends from August 1 2016 to August 1, 2017. for both rolling averages. The trends demonstrate compliance for the 12 months preceding the inspection with the exception of exceeding the 60 ppmvd 7-day rolling average due to a flaring incident that occurred February 7, 2017. The flaring event was a reportable event and was reported in the State of Texas Environmental Electronic Reporting System (STEERS).

I observed the FCCU Continuous Emission Monitoring System (CEMS) and that the calibration gases are of the correct concentration and current. I reviewed the relative accuracy test audit (RATA) performed December 21-23, 2016 for each CEMS and found the relative accuracies for the CEMS to be within allowable requirements of 40 CFR, Part 60, Appendix F.

B. Control of SO₂ Emission from FCCUs

Status: Complete.

Program Summary: TOTAL shall limit SO₂ emissions from any FCCU to 25 ppmvd on a 365 day rolling average and 50 ppm on a 7 day rolling average.

APPENDIX 5 contains SO₂ emissions trends for the FCCU from August 1, 2016 to August 1, 2017.

The trends demonstrate compliance for the 12 months preceding the inspection with the exception of exceeding the 50 ppmvd 7-day rolling average due to a flaring incident that occurred February 7, 2017. The flaring event was a reportable event and was reported in STEERS.

I observed the SO₂ CEMS to be properly installed and that the calibration gases are current and of the proper concentrations. I reviewed the RATA performed December 21-23, 2016 for each CEMS and found the relative accuracies for the CEMS to be within allowable requirements of 40 CFR, Part 60, Appendix F.

C. Control of Particulate Emissions from FCCUs

Status: Complete.

Program Summary: TOTAL shall limit PM emissions from any FCCU to 0.5 pounds or less per 1000 pounds of coke burned in a 3-hour average basis.

TOTAL Port Arthur FCCU operates in full burn mode and PM emissions are controlled by a wet gas scrubber. Continuous parameter monitoring of pressure drop and liquid to gas (L/G) ratios. A 0.022 L/G ratio for the wet gas scrubber and a minimum pressure drop of 15.0 inches of water has been established by stack testing.

APPENDIX 6 contains both pressure drop and L/G ratio trends for the wet gas scrubber from August, 2016 to August 2017. The trends demonstrate compliance with the established minimums with the exception of the February 7 flaring incident reported in STEERS.

The FCCU was tested for particulate emission in May, 2013.

I observed the opacity from the wet has scrubber to be less than 10% throughout the inspection.

D. Control of CO Emissions from FCCUs

Status: Complete.

Program Summary: TOTAL shall limit CO emissions from any FCCU to 500 ppmvd or less on a 1-hour average basis and 100 ppmvd or less on a 365-day average basis.

APPENDIX 7 contains the FCCU CO emission trends for the FCCU from August 1, 2016 to August 1, 2017. The 1-hour 500 ppm limit was exceeded due to the flaring incident of February 7, 2017 as reported in STEERS. The 365-day average of 100 ppmvd was exceeded four times during the time period due to hydrocarbon flaring incidents.

I observed the CEMS to be properly installed and that the calibration gases are current and of the proper concentrations. I reviewed the RATA performed December 21-23 for the FCCU CEMS and found the relative accuracies for the CEMS to be within allowable requirements of 40 CFR, Part 60, Appendix F.

E. NSPS Subparts A and J Applicability to FCCU Regenerator

Status: Complete.

Program Summary: TOTAL shall comply with all requirements of 40 CFR Part 60, Subparts A and J for each relevant pollutant.

The emission trends demonstrate that the emission limits contained in NSPS Subparts A and J are being met with the exception of flaring incidents.

F. Control of NO_x Emissions from Heaters and Boilers

Status: Complete.

Program Summary: TOTAL shall install NO_x control technology covered heaters and boilers as listed in Appendix A of the CD with a refinery wide NO_x emission limit of no greater than 0.052 pounds of NO_x per mmBTU.

APPENDIX 8 is an up to date list of heaters and boilers at the refinery covered by Appendix A to the CD. **APPENDIX 8** also contains a list of heaters and boilers with installed NO_x controls (lo-NO_x burners) Trends for heaters with NO_x CEMS from August 1, 2016 to August 1, 2017 is also included in **APPENDIX 8**. In addition, **APPENDIX 8** includes a bar chart showing NO_x emission prior to and after implementation of the CD based on stack tests and CEM data.

I reviewed the RATA results for each heater and boiler CEMS performed November 2, 2016 and found the relative accuracies for the CEMS to be within allowable requirements of 40 CFR, Part 60, Appendix F.

G. Control of SO₂ Emissions from, and NSPS Applicability to, Heaters and Boilers

Status: Complete.

Program Summary: TOTAL shall comply with 40 C.F.R. Part 60, Subparts A and J for fuel combustion devices.

TOTAL 's Port Arthur refinery operates a single fuel gas system. A written description is included in **APPENDIX 9**. Also included in APPENDIX 9 is a fuel gas H₂S trend for August 1, 2016 to August 1, 2017. The NSPS H₂S fuel gas content limit of 160 ppm was exceeded once due to a hydrocarbon flaring incident occurring October 27, 2016 as reported in STEERS.

I reviewed the relative accuracy test audit (RATA) results for the H₂S CEMS and found the relative accuracies for the CEMs to be within allowable requirements of 40 CFR, Part 60, Appendix F. I observed that the H₂S analyzers were installed correctly and that the calibration gases are of the correct concentration and current.

Part VI, New Source Performance Standards ("NSPS") and Flaring

Status: Complete, pending review by EPA Region 6.

Program Summary: TOTALs Sulfur Recovery Plants (SRP's) shall comply with 40 CFR 60 Subparts A and J.

TOTAL's Port Arthur refinery operates four SRP's (SRU-1, SRU-3, SRU-4 and SRU-5) SRUs 1 and 3 share a common tail gas treatment unit and thermal oxidizer. SO₂ emission trends for the three thermal oxidizers from August 1, 2016 to August 1, 2017 are included in **APPENDIX 10**.

The trends show compliance with NSPS emission limits for the 12-month period preceding the inspection. I observed that the sulfur pits were vented to the tail gas treatment units.

Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

I reviewed the relative accuracy test audit (RATA) results for the CEMs and found the relative accuracies for the CEMs to be within allowable requirements of 40 CFR, Part 60, Appendix F. I observed that the analyzers were installed correctly and that the calibration gases are of the correct concentration and current.

TOTAL's Port Arthur refinery operates four flaring devices. The East flare was installed in 2010 after the CD was entered to serve a delayed coker unit. All four flares are subject to NSPS requirements. All four flares are tied together with a flare gas recovery system, however the Middle flare is now isolated and used only for maintenance. The refinery operates two flare gas recovery units. Flare Gas Recovery Unit No. 1 consist of three two-stage compressors while Flare Gas Recovery System No. 2 uses one two-stage compressor.

Appendix 11 are operational trends of the four compressors from August 1, 2016 to August 1, 2017.

The chart indicates that the operational capacity of the system is adequate to recover the flare gases under normal operating conditions.

Appendix 12 contains a list of all hydrocarbon and acid gas flaring events since the CD was entered. Reports have been generated and submitted to EPA as required.

The preventive maintenance and operating plan was submitted to EPA January 8, 2008.

I observed no smoke or flames being emitted by the flares. I also observed the flares using an infrared gas imaging device and did not observe any abnormal flaring activity (e.g. puffing or indications of incomplete combustion). All flares observed were operating on pilot fuel only.

VII. Benzene Waste Operations NESHAP ("BWON") Program Enhancements

Status: Complete.

Program Summary: In addition to complying with 40 CFR 61 Subpart FF (Benzene Waste NESHAP) TOTAL shall comply with the 6BQ compliance option (40 CFR 61.342(e)).

TOTAL's Port Arthur refinery is implementing the 6BQ compliance option of Subpart FF following the first amendment to the CD file September 20, 2013 using upstream controls and covered enhanced biological waste water treatment system. A written description of the system and simplified process diagram are included in **APPENDIX 13**. Also included in **APPENDIX 13** is a list of above ground storage tanks in BWON service. I reviewed the most recent inspection record for these tanks and found the inspections frequency and findings consistent with BWON tanks seal gap requirements. I reviewed the analytical result of the treatment plant effluent for May – July, 2017 and found benzene results were all non-detectable.

A master list of all carbon canisters in BWON service is also included in **APPENDIX 13**. I reviewed canister inspection records for July, 2017 that indicate canisters experiencing break-through have been replaced as required. The canister systems observed during the inspection were double canister system arranged in series as required. Monitoring personnel were observed monitoring the canisters at the

outlets of the primary canister as required. However, monitoring personnel are using a TVA 1000 to monitor breakthrough of the primary canister. I recommended an instrument with more accuracy in the low ppm range be used.

I reviewed the sampling procedure and standard operating procedures (SOPs) used by the facility and found the procedures written in a formal SOP and consistent with BWON sampling techniques required by 40 CFR § 61.355.

VII. Leak Detection and Repair ("LDAR") Program

Status: Complete.

Program Summary: TOTAL shall implement measures to enhance the refinery's LDAR program under 40 CFR Subpart GGG, Part 61 Subparts J and V and Part 63 Subparts F, H and CC.

TOTAL Port Arthur refinery uses Dexter Field Services to conduct repairs and follow-up monitoring. Chronically leaking components are tracked and replaced. Drill and tap repair techniques are being used on leaking valves if the 500 ppm limit is exceeded and cannot be repaired using conventional methods. The plant wide delay of repair list was found to be up to date and lists approximately 300 components that currently require a shut down for repair. I reviewed instrument calibration logs. Dexter Field Services has implemented an end of day drift check required by the CD as well as a mid-day drift check.

I reviewed the quarterly precision test results for the instruments being used at the facility and calibration gas certificates. I reviewed calibration records for July, 2017 and found the records to be consistently being logged with instrument drift calculations included. Calibration gases observed were up to date and approximately equal to the leak definitions required by EPA Method 21.

I observed that electronic data collection for LDAR monitoring is being conducted by using data loggers and leak tracking and reporting software (Leak DAS 4.0).

Records indicate annual training is being conducted and is incorporated into new employee orientation.

I walked through the FCCU, Crude Unit, DeMex Unit, the SRU Units, Boiler House 's 300 and 350, NHT Reformer, Waste Water Treatment Plant, fuel gas area, and covered boilers process units and observed no open ended lines or valves.

A third party audit of the LDAR program was conducted by EMSI Environmental Services June 26-29, 2017. The audit found the facility to be meeting the CD requirements.

IX. Permitting

Status: Complete.

APPENDIX 14 contains excerpts from the most recent NSR operating permits 18936, 46396, PSD-TX-1073M2 and NO44 imposing emission limits and CEM QA requirements contained in the CD.

Section III – AREAS OF CONCERN

The affirmative relief items contained in part V of the CD appear to have been met. Alternative Monitoring Plans addressing equipment pertaining to the CD have been approved. CD imposed limits and continuous emission monitoring requirements are incorporated in federally enforceable operating permits and the permits.

I recommended that a more sensitive instrument be used to monitor breakthrough of primary carbon canisters in BWON service.

Section IV – FOLLOW UP

N/A

Section V – LIST OF APPENDICES

Appendix 1 - Photo Log

Appendix 2 - Opening conference sign-in sheet.

Appendix 3 - Plant wide process flow diagram, written description.

Appendix 4 - FCCU NO_x emission trend.

Appendix 5 - FCCU SO₂ emission trend.

Appendix 6 - FCCU Wet Gas Scrubber Parameter Monitoring.

Appendix 7 - FCCU CO emission trends with excursion explanations.

Appendix 8 - Updated list of boilers, heaters with NO_x controls, NO_x trends, NO_x emission prior to and after implementation of the CD.

Appendix 9 - Refinery fuel gas system written description, mix drum H₂S analyzer trend.

Appendix 10 - SRP's SO₂ emission trends.

Appendix 11 – Flare Gas Recovery Compressors Recorded Operational Parameters.

Appendix 12 – Hydrocarbon and Acid Gas Flaring Events

Appendix 13 – BWON description and Flow Diagram, Carbon Canisters and BWON Storage tanks.

Appendix 14 – Operating Permits Excerpts.

Appendix CBI (None)

Total Petrochemicals and Refining USA Inc./Port Arthur Refinery
Inspection Date: 08/22-24/20167

Appendix 1

Photograph Log

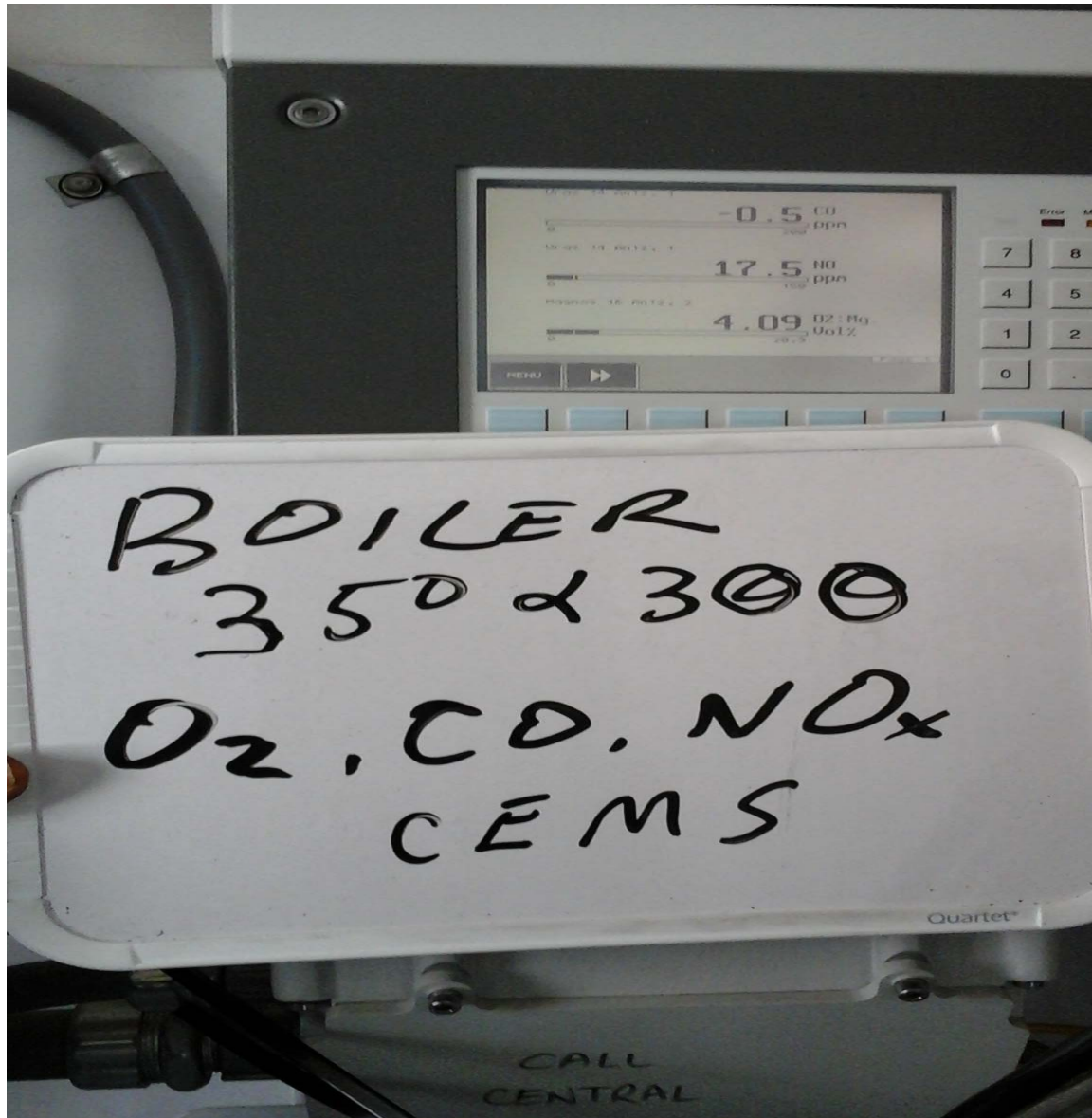


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 1

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Boiler's 350 and 300 CEMS. (Shared stack)

NO_x = 17.5 ppm

CO = -0.5 ppm

O₂ = 4.9%



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Photograph Log

Photo No. 2

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Condensate Splitter CEMS.

 $\text{NO}_x = 28.1 \text{ ppm}$ $\text{CO} = -5.0 \text{ ppm}$ $\text{O}_2 = 5.14\%$



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 3

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Crude Heater 101 CEMS.

NO_x = 28.0 ppm
CO = 1.35 ppm



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Photograph Log

Photo No. 4

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

 $O_2 = 4.33\%$ Crude Heater 101 Lo-NO_x burners



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Photograph Log

Photo No. 5

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Crude Heater 201 CEMS

NO_x = 20.3 ppm

CO = -1.6 ppm



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Photograph Log

Photo No. 6

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

 $O_2 = 4.97$ ppmCrude Heater 201 Lo-NO_x burners.



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Photograph Log

Photo No. 7

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Crude Heater 202A CEMS.

NO_x = 39.15 ppm



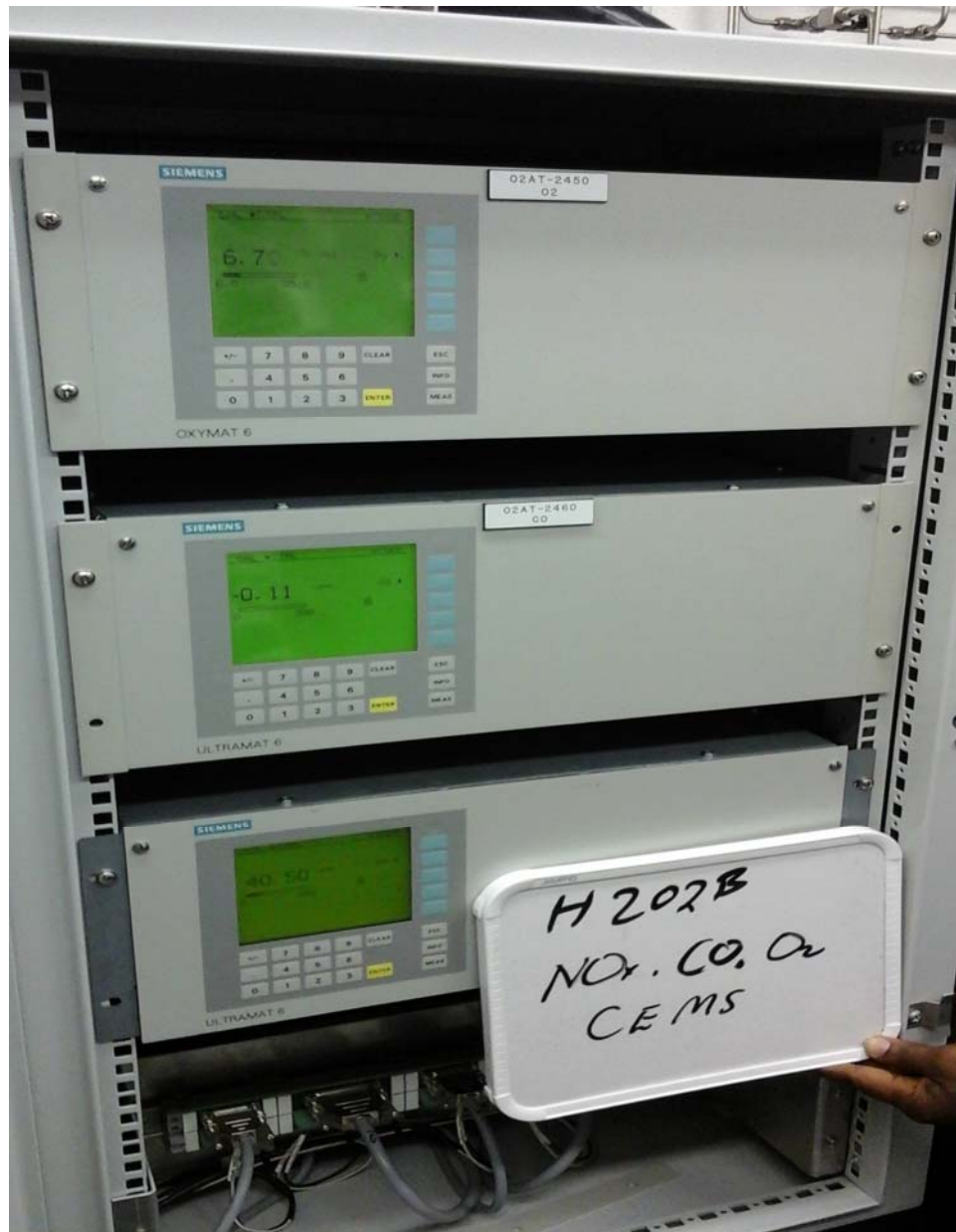
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 8

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

CO = -0.27 ppm

O₂ = 6.84 ppm

Crude Heater 202B CEMS.

NO_x = 40.50 ppm

CO = -0.11 ppm



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Photograph Log

Photo No. 9

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

 $O_2 = 6.7\%$ 

Crude Heater 301 CEMS

$NO_x = 21.1$ ppm
 $CO = 0.08$ ppm



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Photograph Log

Photo No. 10

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

 $O_2 = 3.09 \%$ Crude Heater 301 Lo-NO_x burners.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 11

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Reformer Heaters 1 – 6 CEMS. Shared Stack.

NO_x = 16.3 ppm

CO = -2.2 ppm

O₂ = 6.94 %



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Photograph Log

Photo No. 12

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

Reformer Heater H-101 Lo NO_x burners.



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Photograph Log

Photo No. 13

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

Reformer Heater H-102 Lo NO_x burners.

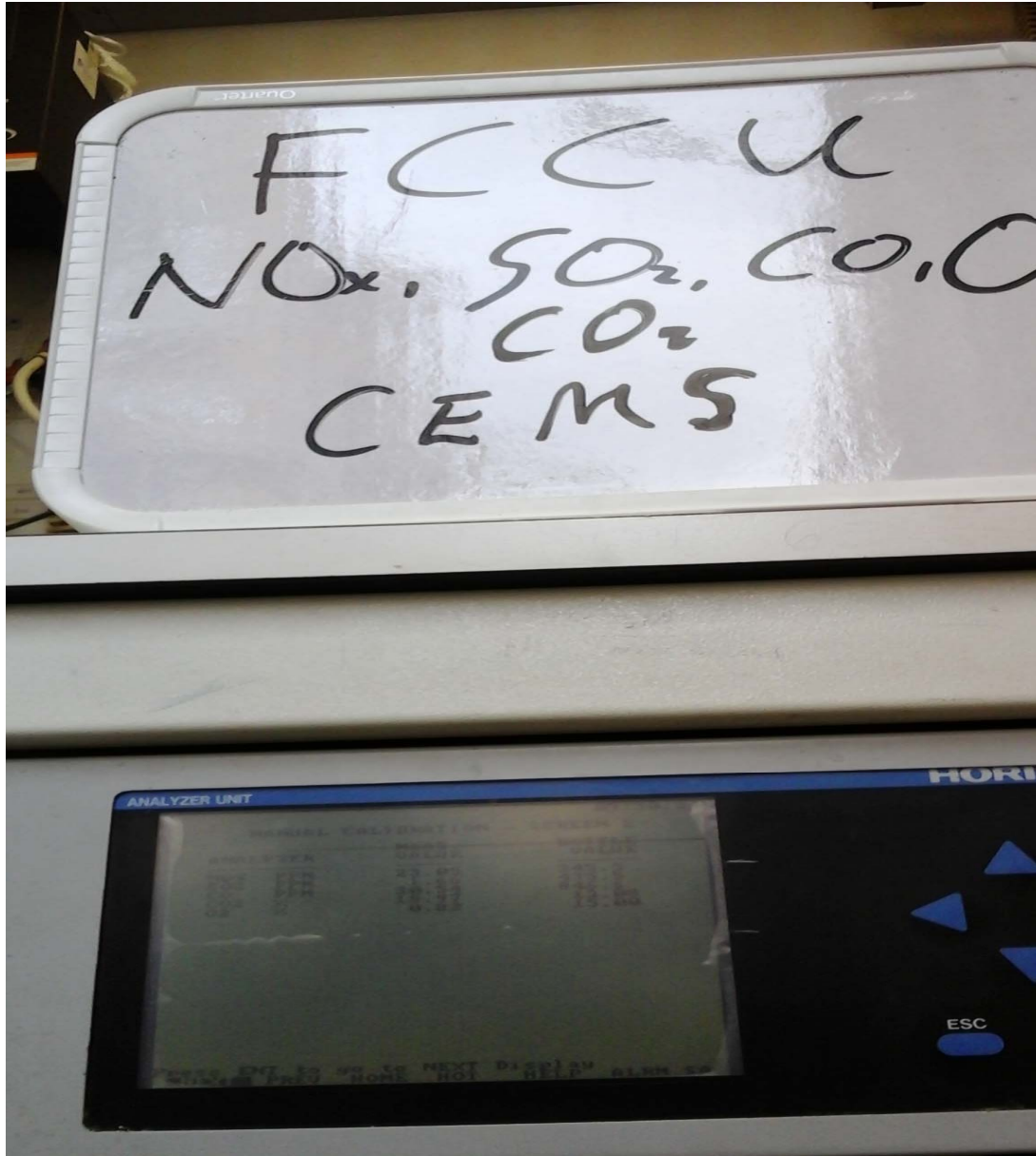


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 14

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



FCCU CEMS.

NO_x = 23.93 ppmSO₂ = 1.96 ppm

CO = 30.32 ppm

O₂ = 0.95 %



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Photograph Log

Photo No. 15

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



FCCU Wet Gas Scrubber Stack



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 16

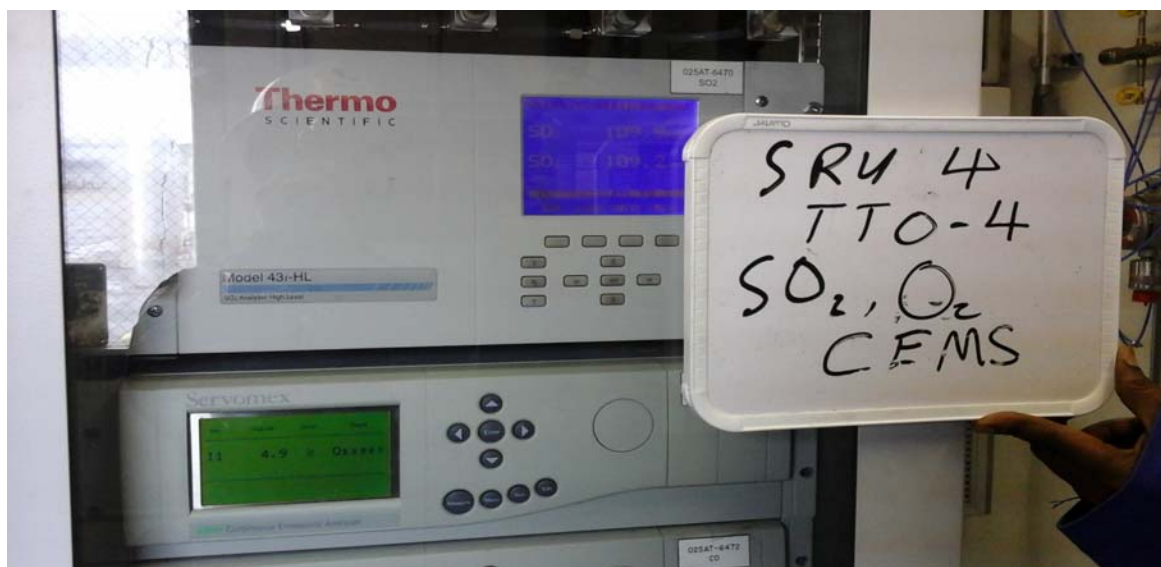
Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



SRU 4 CEMS

NO_x = 19.5 ppm

CO = 5.8 ppm



SRU 4 CEMS

SO₂ = 109.2 ppmO₂ = 4.9 %



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



SRU 5 CEMS

NO_x = 17.7 ppm

CO = 21.4 ppm



SRU 5 CEMS

SO₂ = 98.8 ppmO₂ = 5.99 %

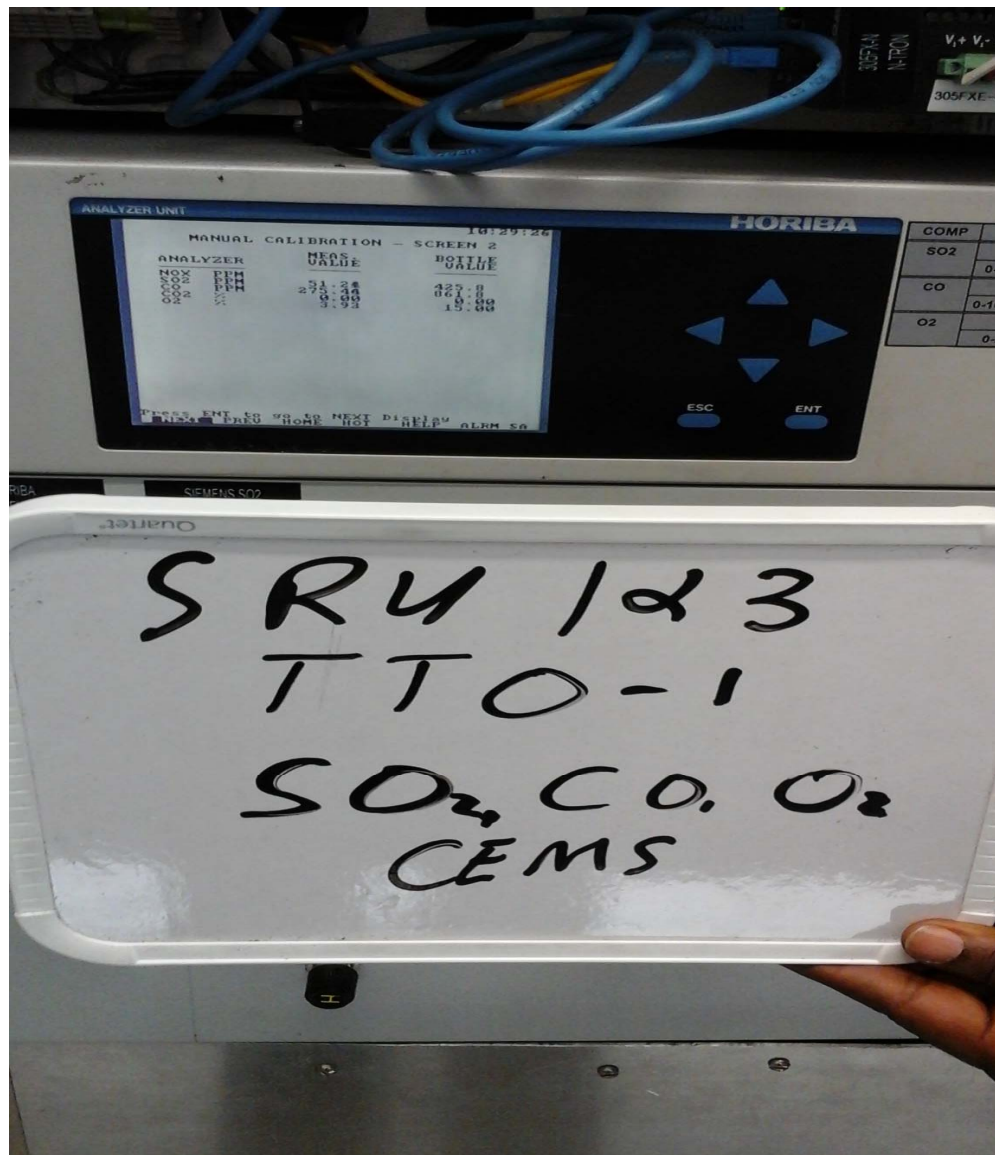


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Photograph Log

Photo No. 18

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



SRU 1 and 2 CEMS (Shared Stack) Photo shows calibration span gas concentrations, stack concentrations below:

SO₂ = 51.18 ppm

CO = 28.2 ppm

O₂ = 4.02 %



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Photograph Log

Photo No. 19

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Unibon CEMS.

NO_x = 17.8 ppm

CO = -0.1 ppm

O₂ = 6.13 %

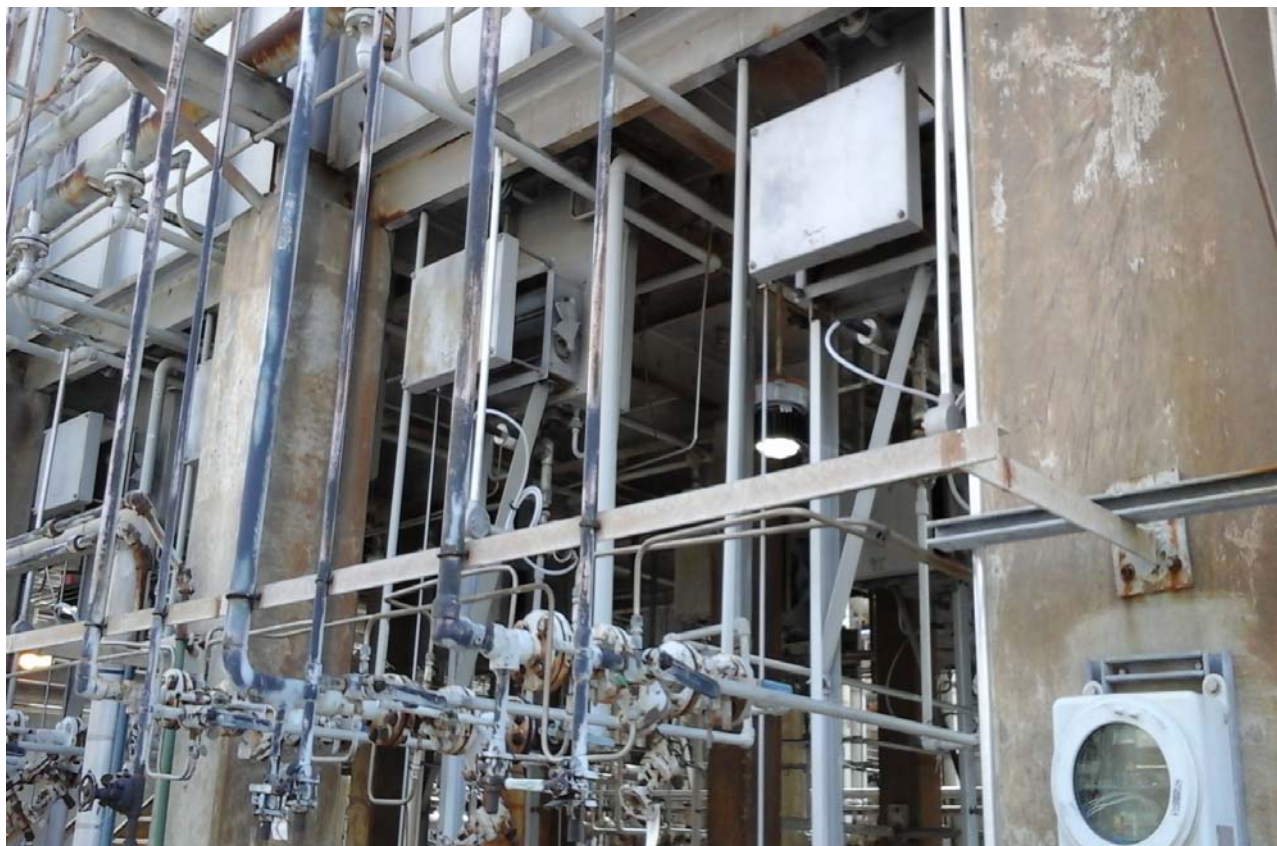


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Photograph Log

Photo No. 20

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Unibon Heater Lox burners.

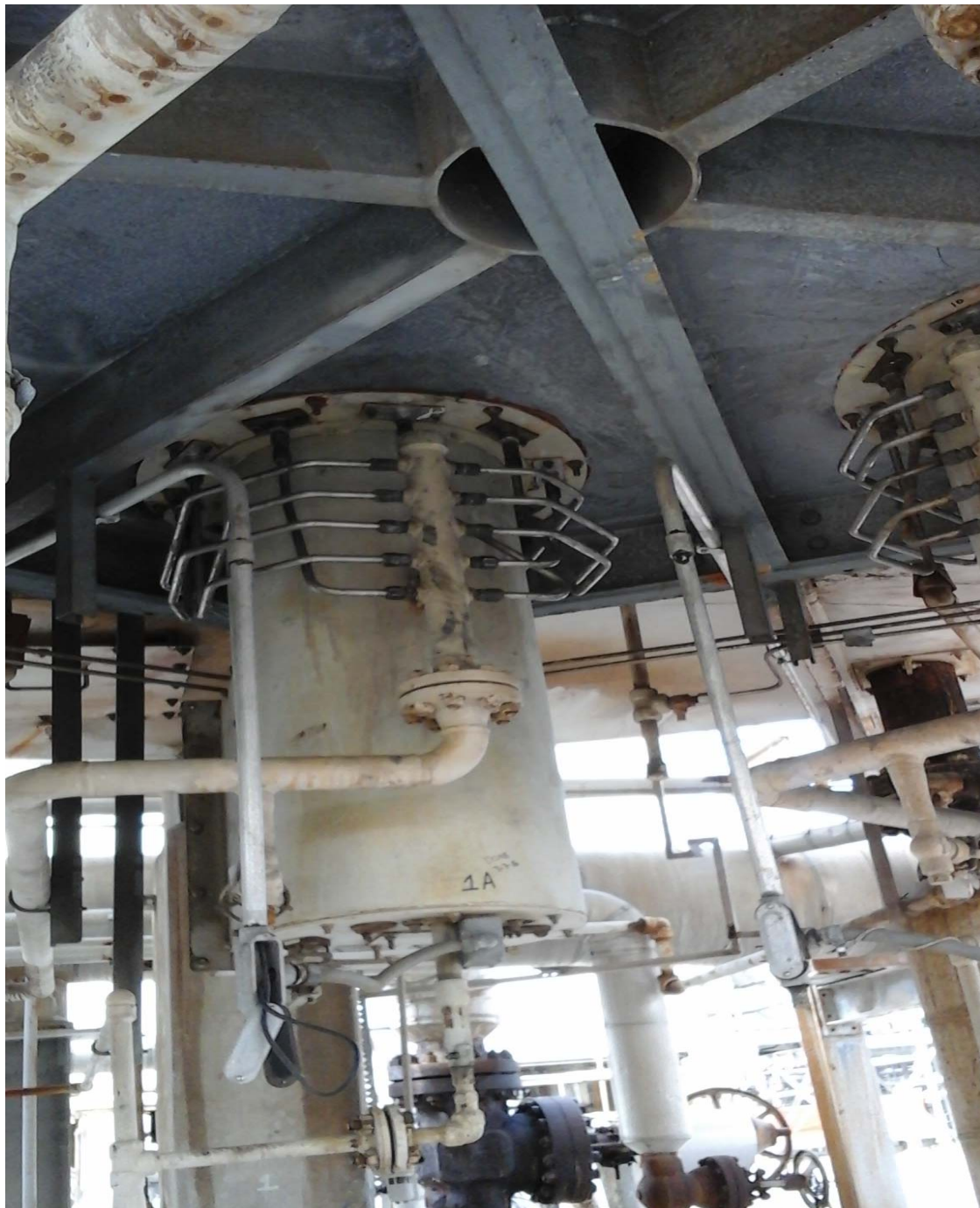


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Photograph Log

Photo No. 21

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

Demex Heater 4 Lo NO_x burners.

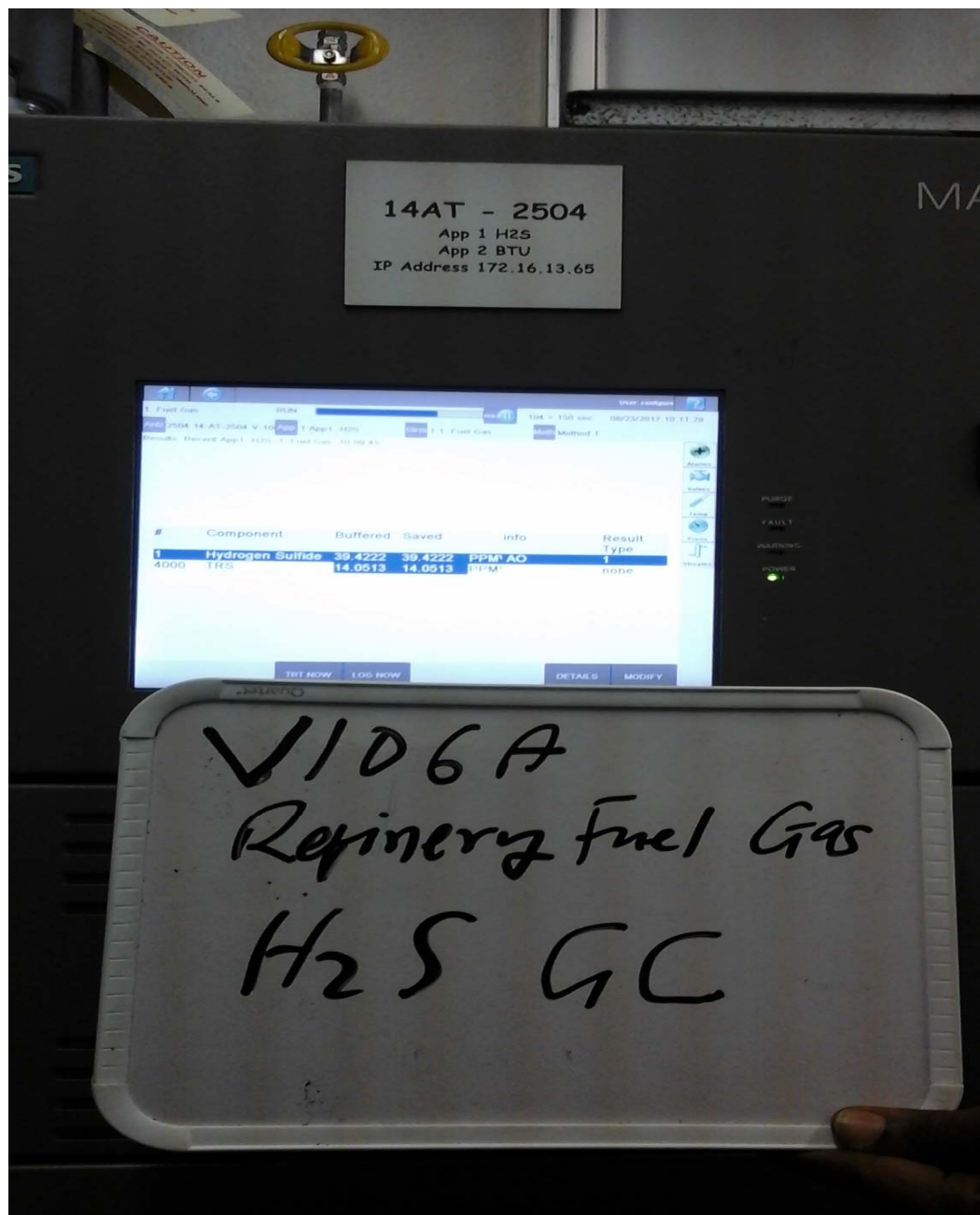


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 22

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

Refinery Fuel Gas Mix Drum H₂S Analyzer.H₂S = 39.42 ppm



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Photograph Log

Photo No. 23

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Flare Gas Recovery 1 Compressors



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Photograph Log

Photo No. 24

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas



Flare Gas Recovery 2 Compressors.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 25

Location: Total Petrochemicals and Refining USA Inc.		
City: Port Arthur	County/Parish: Jefferson	State: Texas

Heaters 1 – 4 Lo-NO_x burners

Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 2

Opening conference sign-in sheet.



TOTAL PETROCHEMICALS & REFINING USA, INC.

TOTAL

EPA Region VI – Agency On-site Audit
 August 22-25, 2017
 Consent Decree Reference Case No. 90-5-2-1-08283/3
 TOTAL Petrochemicals USA, Inc.
 Port Arthur Refinery, Port Arthur, Texas



DATE: August 22, 2017

Sign-In Sheet

Name	Title (print)	SIGNATURE	Contact Information (telephone, e-mail address)
Tim Gold	Asst.		281 783 2153 Gold.Tim@epa.gov
Prince Nforozo	Environmental Engineer		
ABRAM TASHIN	ENV GROUP LEADER		
Jannetta Nled	Environmental Engineering Advisor		409 985-0268 jannetta.bowden-nled@total.com

**TOTAL PETROCHEMICALS & REFINING USA, INC.**

EPA Region VI – Agency On-site Audit

August 22 -25, 2017

Consent Decree Reference Case No. 90-5-2-1-08283/3

TOTAL Petrochemicals USA, Inc.

Port Arthur Refinery, Port Arthur, Texas



DATE: August 23, 2017

[illegible]



TOTAL

TOTAL PETROCHEMICALS & REFINING USA, INC.



EPA Region VI - Agency On-site Audit

August 22 - 25, 2017

Consent Decree Reference Case No. 90-5-2-1-08283/3

TOTAL Petrochemicals USA, Inc.

Port Arthur Refinery, Port Arthur, Texas

DATE: August 24, 2017

Sign-In SheetExit Review Meeting

Name	Title (print)	SIGNATURE	Contact Information (telephone, e-mail address)
DOROTHY BARTEL	HSSSE Manager		409-985-0353 dorothy.bartel@total.com 409-985-0626
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ADAM YASSIN	Env Grp Leader		ADAM.YASSIN@total.com 409-985-0173
Jon Fleener	Area 2 Ssr		jonathan.fleener@total.com
RYAN RIFFER	OPS MGR		ryan.riffer@total.com 409-985-0154
Prince Nfodzo	ENVIRONMENTAL ENGINEER, EPA		Princenfodzo@epa.gov 214 665 7491
Jim Gool	Env. Eval EPA		281 983 2153 Gool.Jim@epa.gov



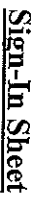
EPA Region VI – Agency On-site Audit

August 22-25, 2017

Consent Decree Reference Case No. 90-5-2-1-08283/3

TOTAL Petrochemicals USA, Inc.

Port Arthur Refinery, Port Arthur, Texas



Exit Review Meeting

DATE: August 24, 2017

[illegible]

Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 3

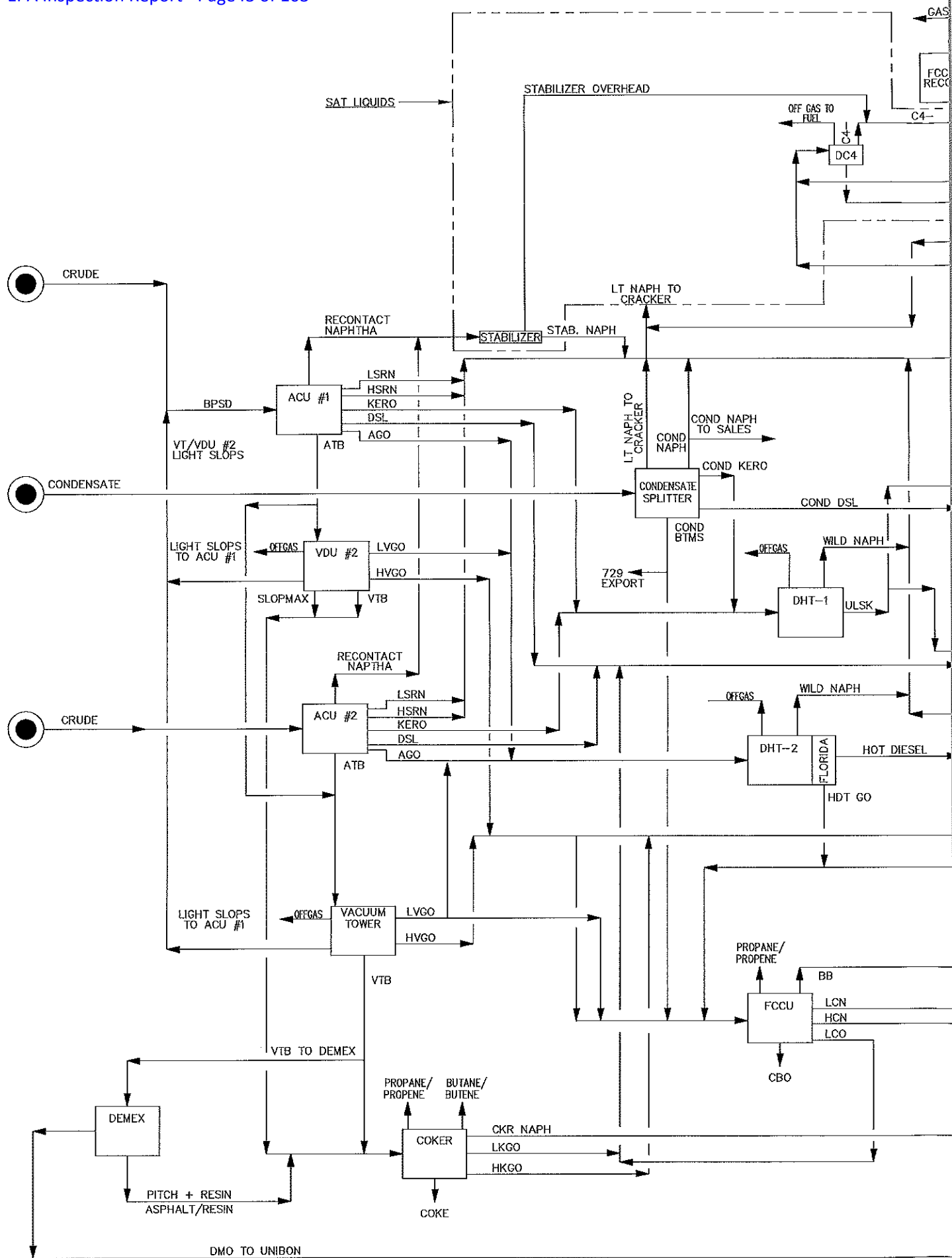
Plant wide process flow diagram, written description.

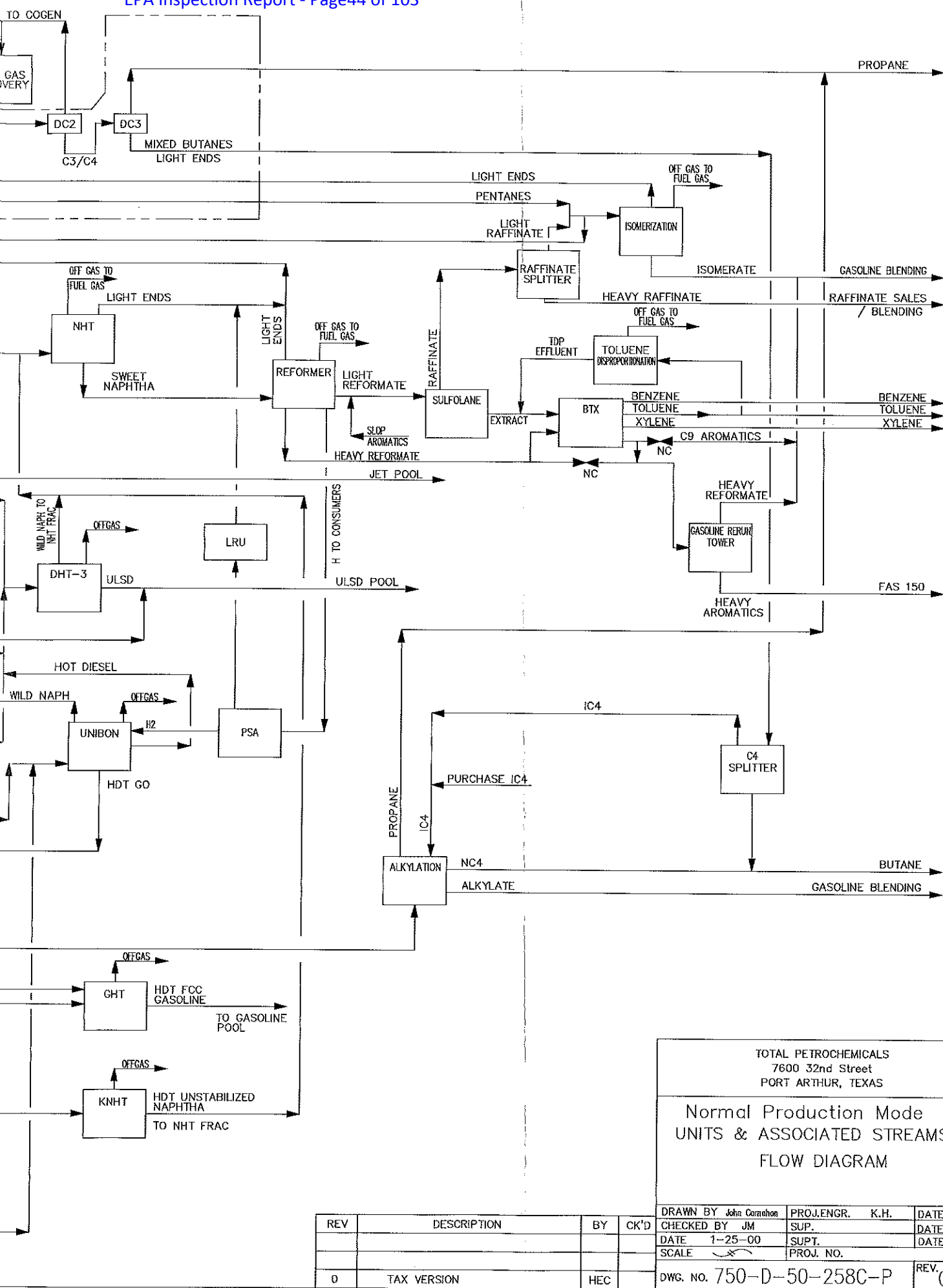
EPA Region VI – Agency On-site Audit
August 22 -25, 2017
Consent Decree Reference Case No. 90-5-2-1-08283/3
TOTAL Petrochemicals USA, Inc.
Port Arthur Refinery, Port Arthur, Texas
General

A plant-wide PFD has been provided as requested. The plant-wide process flow diagram, 750-d-50-258C, was altered by removing the process stream flows and crude names/rates in order to submit a “non-confidential” PFD as requested by EPA. A new unit, the Liquids Recovery Unit (LRU), had not been included in the referenced PFD and was added to the altered PFD. The altered PFD is 750-d-50-258C-P.

PROCESS DESCRIPTION

The TOTAL Port Arthur Refinery manufactures transportation fuels such as gasoline, diesel, jet fuel, propane, butane, bunker oil, etc. The refinery also makes petroleum coke and recovers benzene, toluene, and xylene – the basic building blocks for plastics – from its fuel products. The refinery is a high conversion facility. The following units are authorized and/or operated at the refinery: Total Isomerization Unit, Saturate Liquids Unit, Benzene/Toluene/Xylene (BTX) Unit, Sulfolane Unit, Naphtha Hydrotreater (NHT), Continuous Catalytic Reformer Unit, Distillate Hydrotreaters No. 1, No. 2, and No. 3, Delayed Coker Unit, Toluene Disproportionation (TDP) Unit, Sour Water Strippers No. 1, No. 2, No. 3, and No. 4, Amine Recovery Unit No. 1 and No. 2, Gas Rerun Unit, Sulfur Recovery Units No. 1, No. 3, No. 4, and No. 5, SCOT Tail Gas Units, UNIBON, DEMEX, Alkylation Unit, Fluid Catalytic Cracking Unit (FCCU), Vacuum Towers No. 1 and No. 2, Atmospheric Crude Units No. 1 and No. 2, Marine Docks and Vapor Recovery Unit, Oil Movements and Storage Tanks (OM&S), Truck Loading Rack, LPG Loading Rack, Asphalt Plant & Loading Rack, Cogeneration Unit, Boiler House, Process Wastewater Collection and Treatment Complex, Condensate Splitter, Vacuum Distillation Unit, Coker Naphtha Hydrotreater, Liquids Recovery Unit, Tail Gas Thermal Oxidizers for SRU No. 1/No.3, SRU 4 and SRU 5, and Pressure Swing Absorption unit.





TOTAL PETROCHEMICALS
7600 32nd Street
PORT ARTHUR, TEXAS

Normal Production Mode
UNITS & ASSOCIATED STREAMS
FLOW DIAGRAM

REV	DESCRIPTION	BY	CK'D	DRAWN BY	PROJ. ENGR.	K.H.	DATE
				John Cornish			1-00
				JM	SUP.		DATE
				1-25-00	SUP.		DATE
				SCALE	PROJ. NO.		
0	TAX VERSION	HEC		DWG. NO. 750-D-50-258C-P			REV. 0

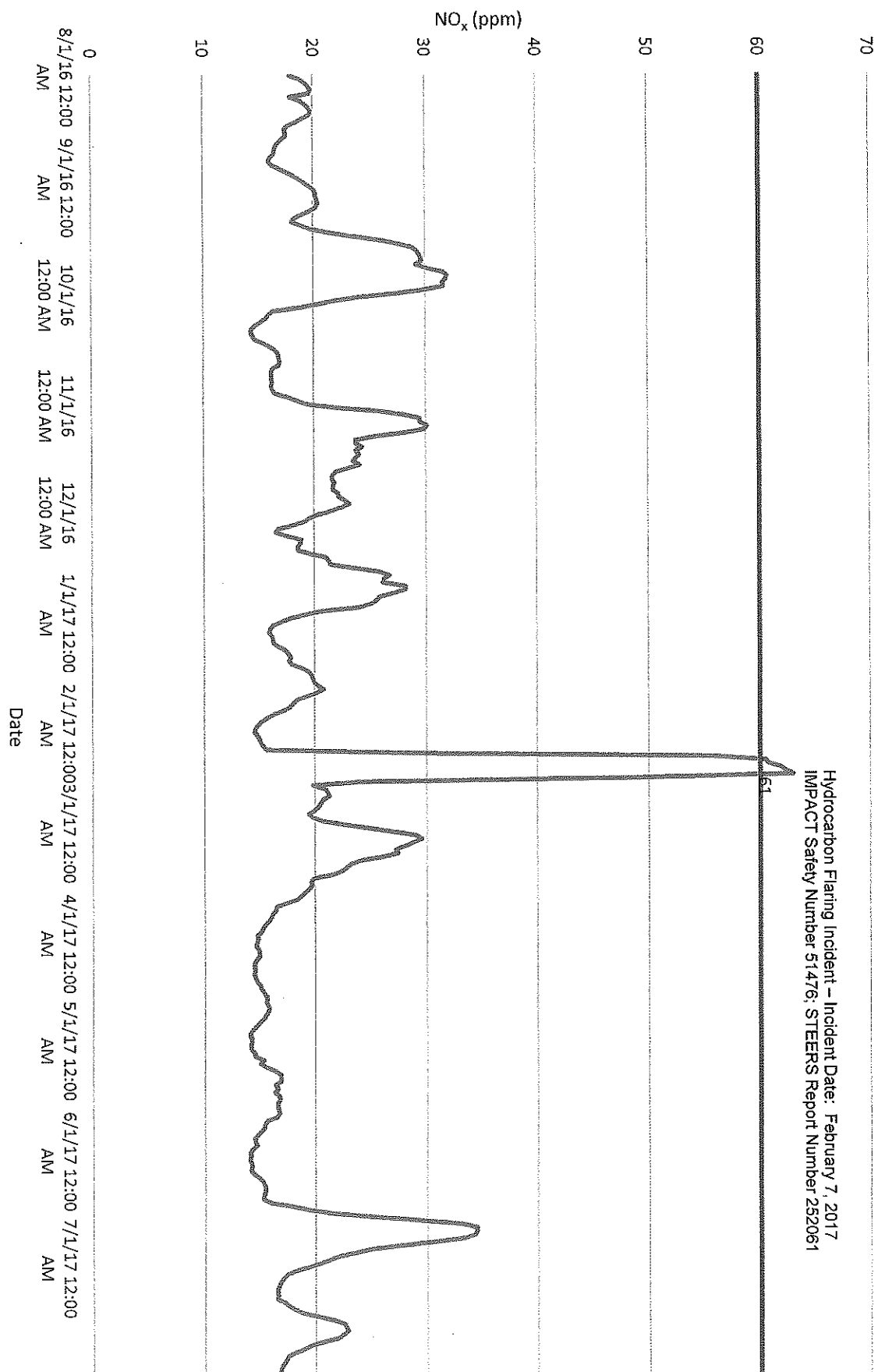
Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

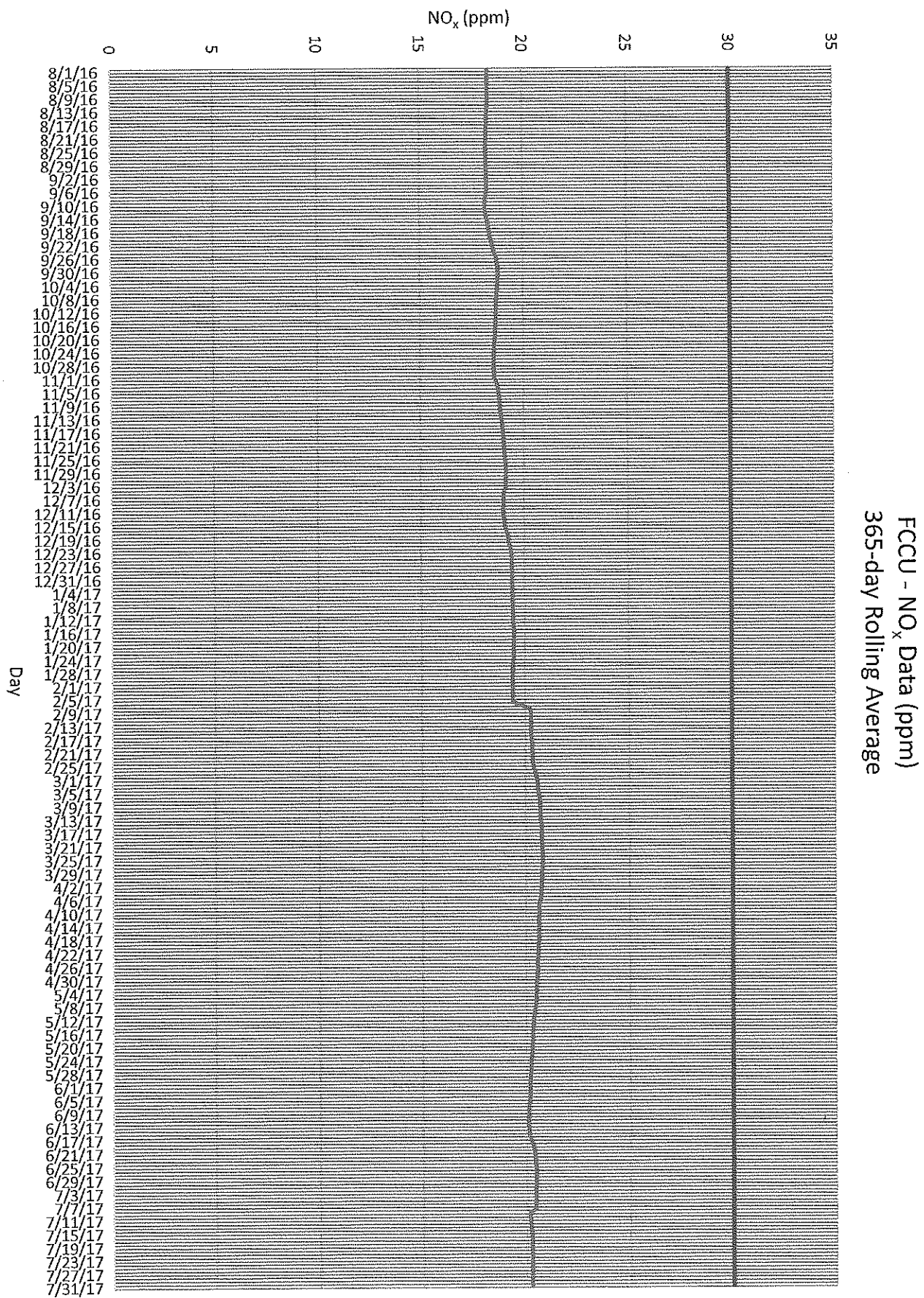
Appendix 4

FCCU NO_x emission trend.

FCCU - NO_x Data (ppm) 7-day Rolling Average

Hydrocarbon Flaring Incident – Incident Date: February 7, 2017
IMPACT Safety Number 51476; STEERS Report Number 252061





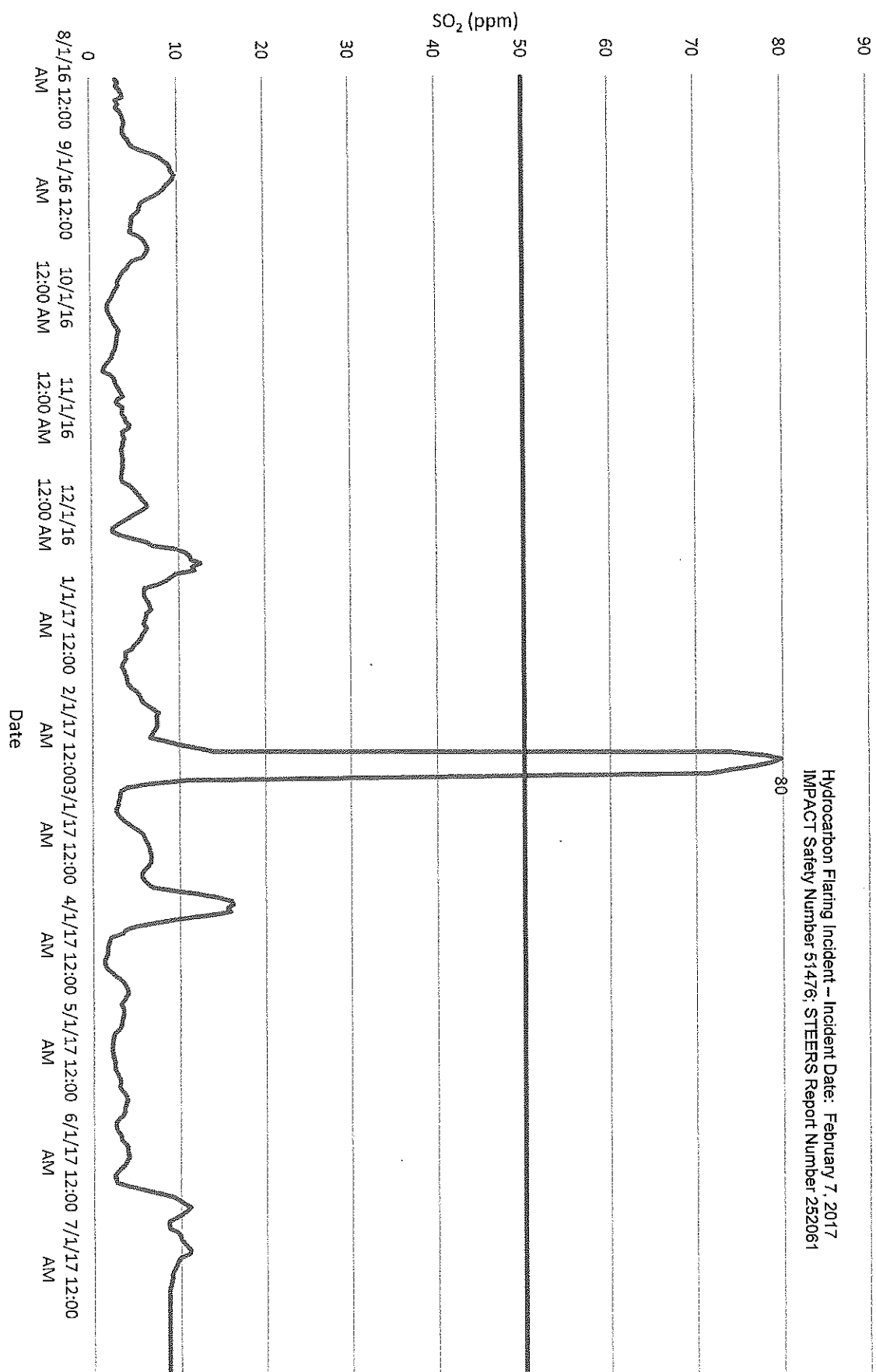
Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 5

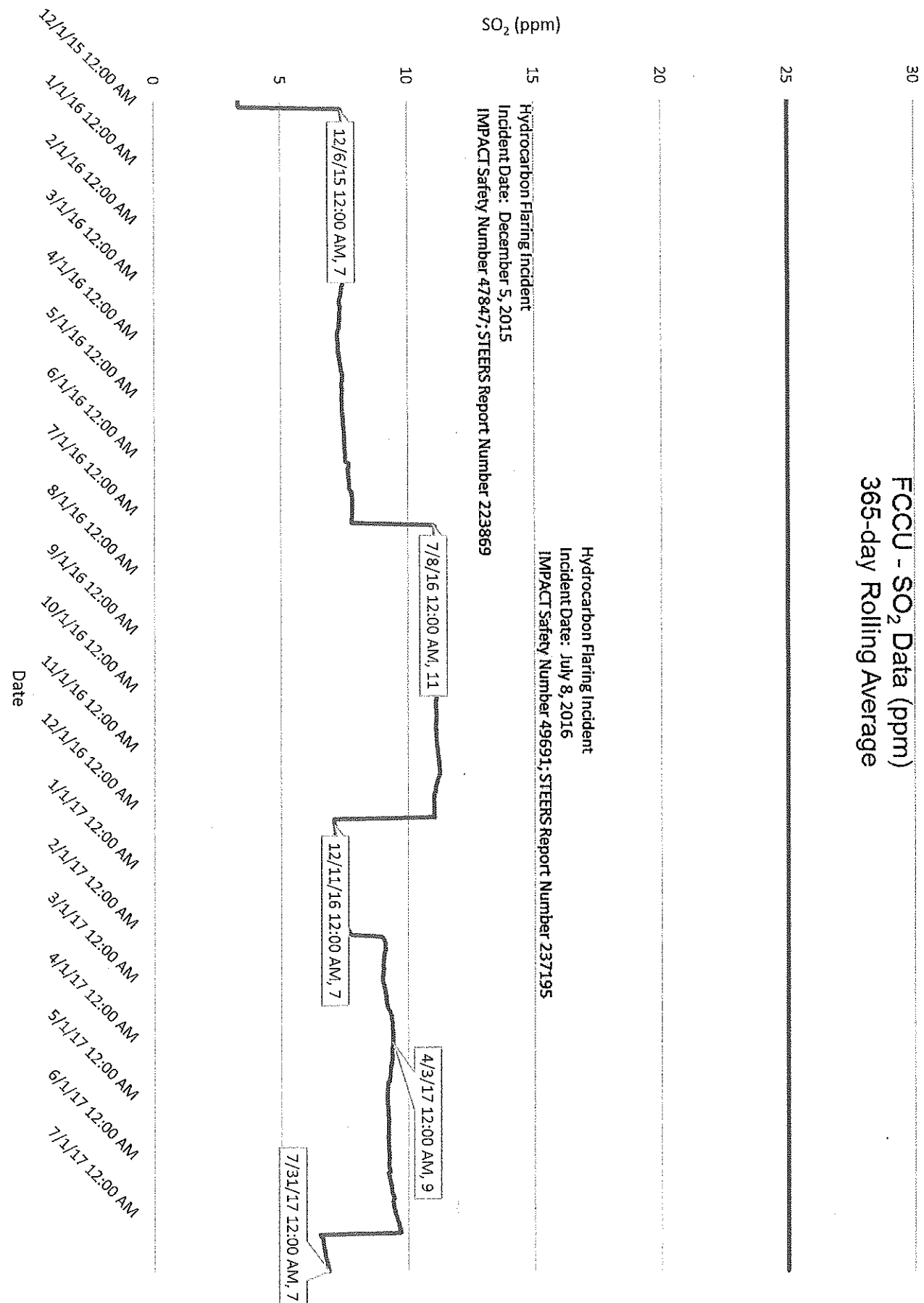
FCCU SO₂ emission trend.

FCCU - SO₂ Data (ppm) 7-day Rolling Average

Hydrocarbon Flaring Incident – Incident Date: February 7, 2017
IMPACT Safety Number 51476; STEERS Report Number 252061



FCCU - SO₂ Data (ppm) 365-day Rolling Average

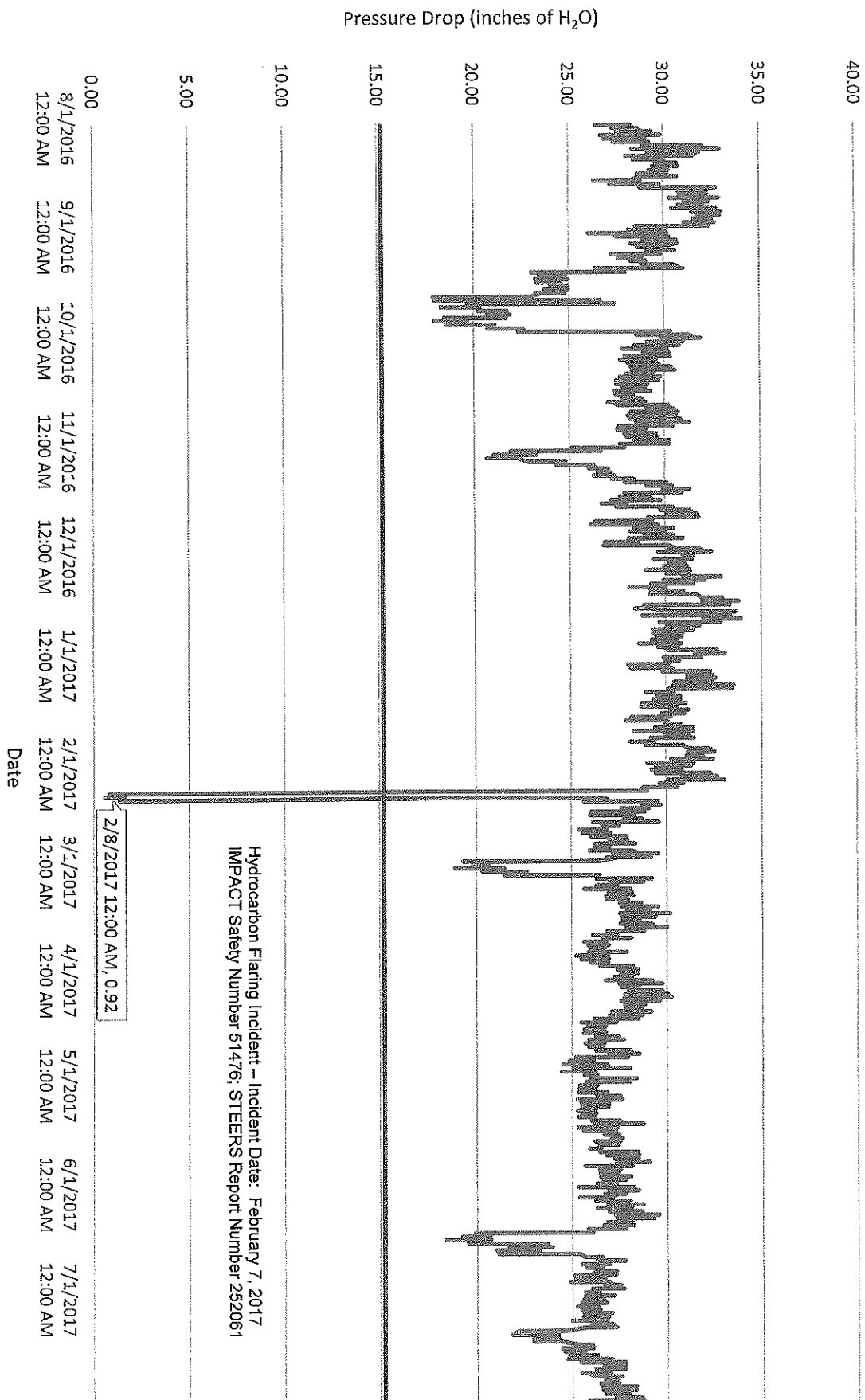


Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

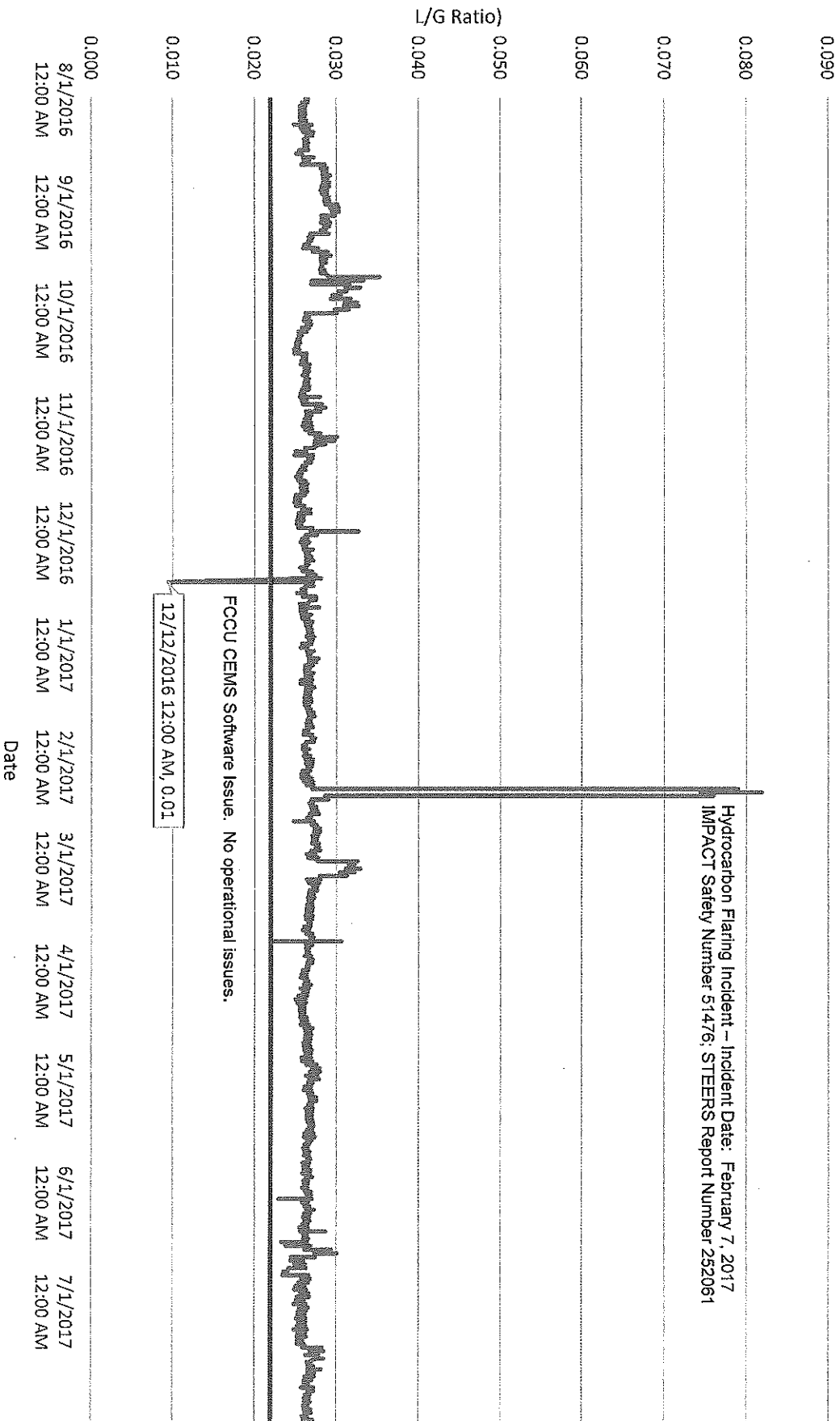
Appendix 6

FCCU Wet Gas Scrubber Parameter Monitoring.

FCCU - Pressure Drop 3-Hour Rolling Average Cannot Drop Below 15.2 inches of H₂O



FCCU - L/G Ratio 3-Hour Rolling Average Cannot Drop Below 0.022



0.022
8/24/17
Based on
Stack
Test.

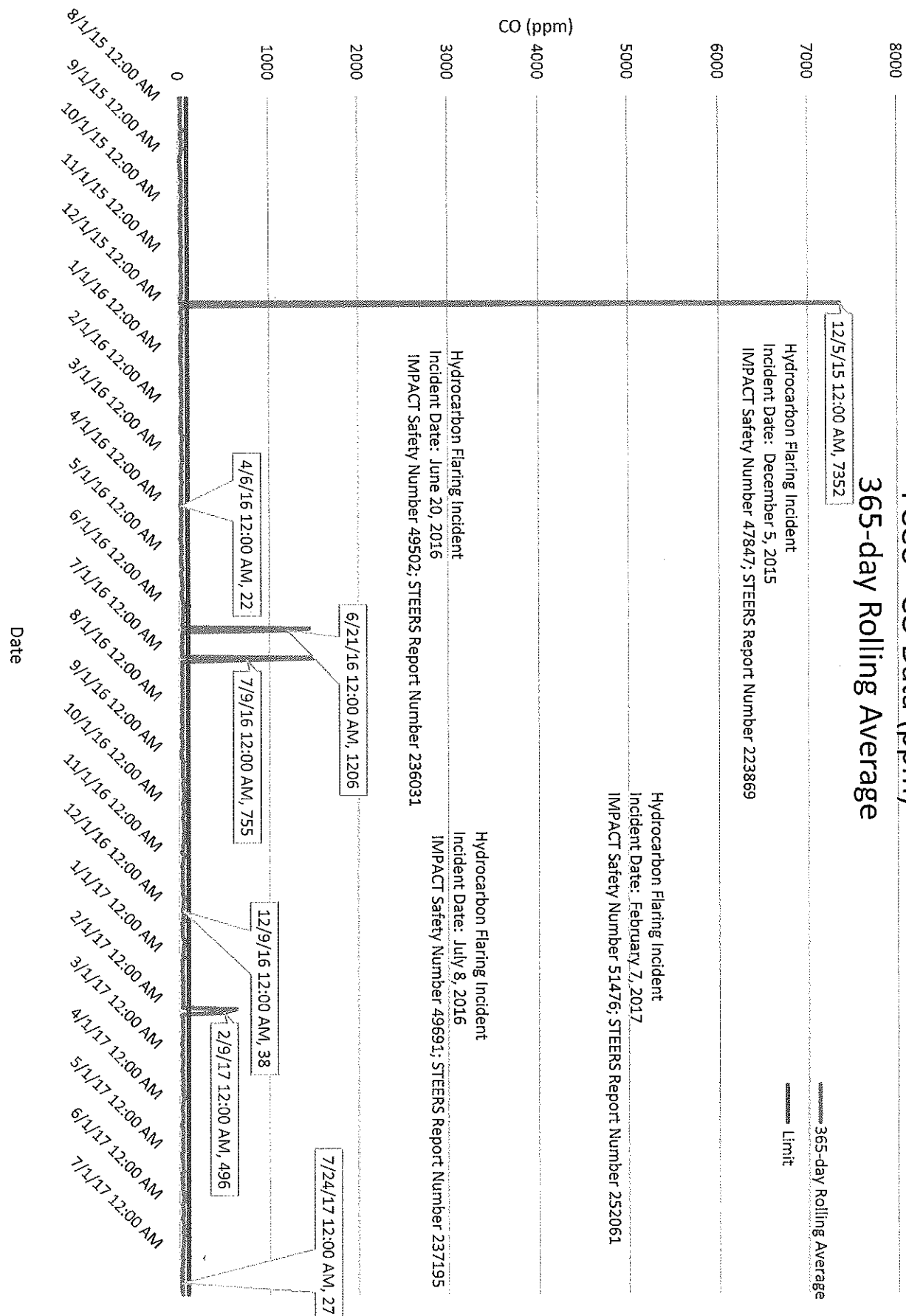
Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 7

FCCU CO emission trends with excursion explanations.

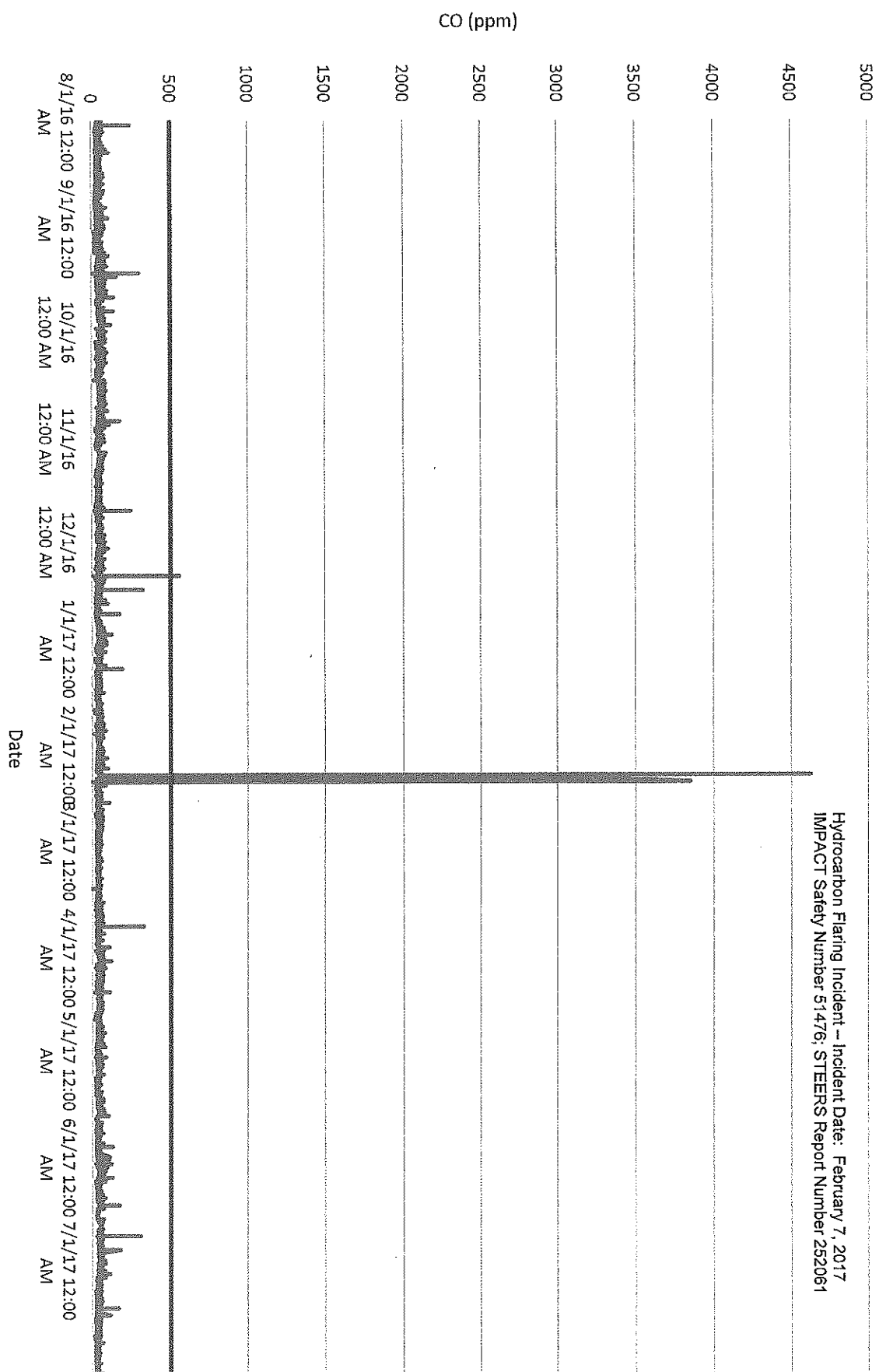
FCCU - CO Data (ppm)

365-day Rolling Average



FCCU - CO Data (ppm) Hourly Average

Hydrocarbon Flaring Incident - Incident Date: February 7, 2017
IMPACT Safety Number 51476; STEERS Report Number 252061



Appendix 8

Updated list of boilers, heaters with NO_x controls, NO_x trends, NO_x emission prior to and after implementation of the CD.

Total Petrochemicals & Refining USA, Inc.
Port Arthur Refinery
APPENDIX A
Initial Inventory of Covered Heaters and Boilers
Annual Update for Calendar Year 2016 - Submitted March 30, 2017

A/A/EN/110000755200

Unit	Source Type	Emission Point Number (EPN)	Description	Current NOx Limit (lb/MMBtu)	CEM Equipped and Operational	Heat Input Capacity, (MMBtu/hr)	Source for Heat Input Capacity
No. 1 Crude	Heater	01ACU1H101	ACU-1 Charge, H-101 ¹	0.040	Y	145.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
No. 2 Crude	Heater	02ACU2H201	ACU-2 Charge, H-201 ¹	0.030	Y	129.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
No. 1 Crude	Heater	01ACU1202A	ACU-1 Charge, H-202A	0.060	Y	187.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
No. 1 Crude	Heater	01ACU1202B	ACU-1 Charge, H-202B	0.060	Y	187.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Vacuum Distillation Unit 1	Heater	01VAC1H301	VDU-1 Charge, H-301 ¹	0.030	Y	105.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
Demex	Heater	10DEMEXH-2	DEMEX Asphalt, 3H-2	0.035	N	70.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Demex	Heater	10DEMEXH-4	DEMEX DMO Phase, 3H-4 ²	0.035	N	98.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Unibon	Heater	13UNIBH301	Unibon Charge, 13H-1	0.030	Y	100.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
NHT 1	Heater	17NHTHTRS	NHT 17H-101 ¹	0.030	N	56.60	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
NHT 1	Heater	17NHTHTRS	NHT 17H-102 ¹	0.030	N	69.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Reformer	Heater	17NHTHTRS	Reformer Charge 1 ^{1,2}	0.033	Y	127.16	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Reformer	Heater	17NHTHTRS	Reformer Charge 2 ^{1,3}	0.033	Y	144.12	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Reformer	Heater	17NHTHTRS	Reformer Charge 3 ^{1,3}	0.033	Y	79.52	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Reformer	Heater	17NHTHTRS	Reformer Charge 4 ^{1,2}	0.033	Y	56.21	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
BTX	Heater	04BTXH-53	Xylene Trim Heater, 4H-53	0.060	N	65.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
BTX	Heater	04BTXH-52	Toluene Trim Heater, 4H-52	0.060	N	63.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
DHT 1	Heater	51DHT1H-1	DHT Charge, 51H-1	0.040	N	46.44	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
DHT 2	Heater	52DHT2H-1	DHT-2 Charge, 52H-1	0.035	N	46.45	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
DHT 2	Heater	52DHT2H-2	DHT-2 Florida, 52H-2	0.035	N	52.63	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
Condensate Splitter	Heater	40CSPLTH-1	Condensate Splitter H-1	0.050	Y	230.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package) February 3 2012
Utility	Boiler	61BLRH300	Boiler H-300 ³	0.035	Y	249.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
Utility	Boiler	61BLRH350	Boiler H-350 ³	0.035	Y	249.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)

¹ Heaters routed to common stack - CEMS on common stack.² NOx Controls proposed on heaters for netting on NSR Permit (#N067) submitted on June 20, 2006, to the EPA/TCEQ. TOTAL may use 106 tons or less of offsets from NOx emissions from these heaters for the offsets required by NSR Permit application #N067 should a permit be issued under that application or under another application for the same project.³ Boilers routed to common stack - CEMS on common stack.

No changes occurring during calendar year 2014.

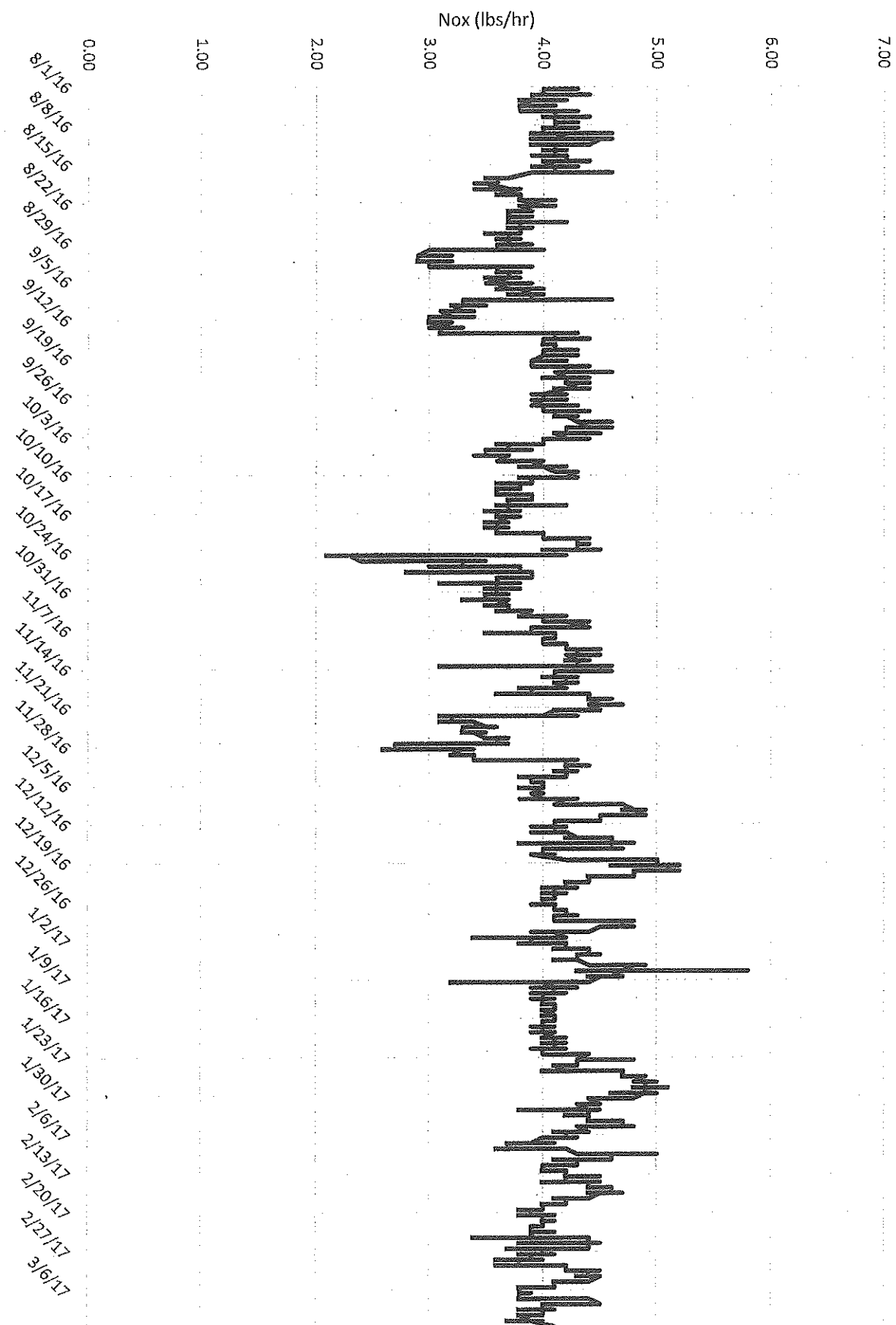
NOx Controls were installed on the Unibon Charge Heater October 12, 2013.

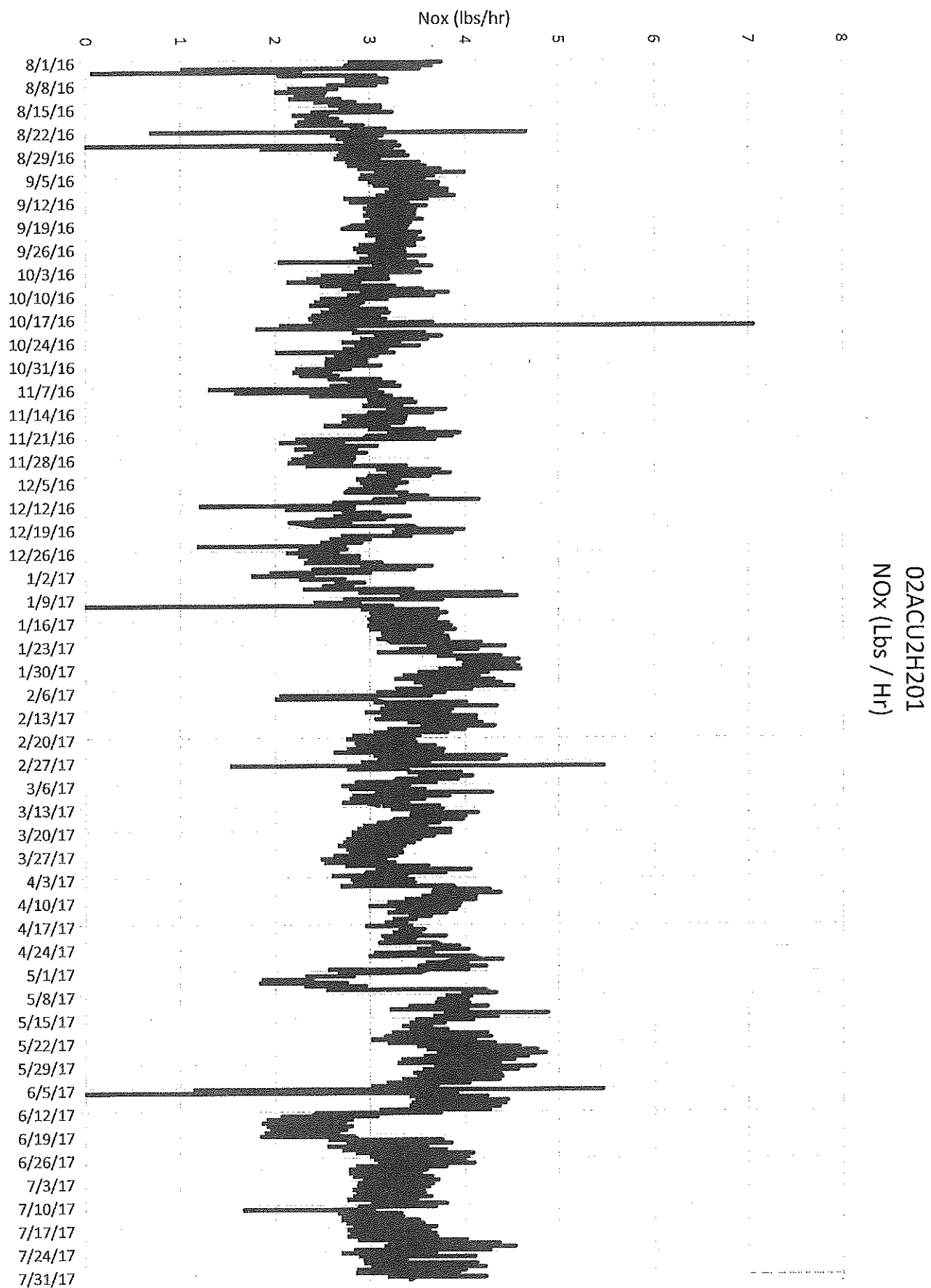
Appendix A – Initial Covered Heaters and Boilers Heaters Installed with Low NOx Burners

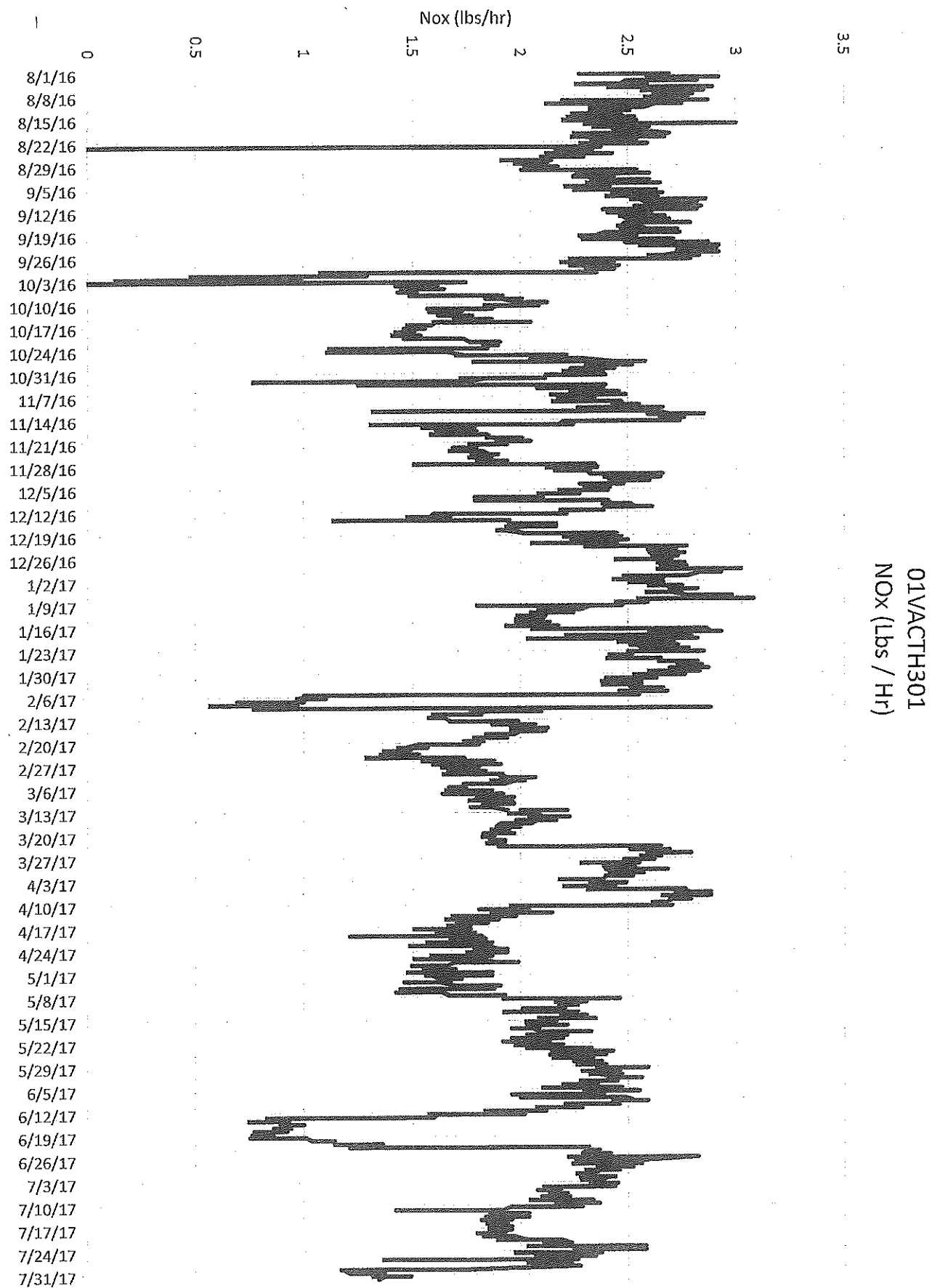
Unit	Source Type	Emission Point Number	Description	Current NOx Limit (lb/MMBtu)	Annualized Heat Input (MMBtu/hr)	Interim NOx Limit (lb/MMBtu)	Installation Date
NHT 1	Heater	17NHTHTRS	NHT 17H-101	0.100	56.60	0.030	April/May 2008
NHT 1	Heater	17NHTHTRS	NHT 17H-102	0.100	69.00	0.030	April/May 2008
Reformer	Heater	17NHTHTRS	Reformer Charge 1	0.068	127.16	0.033	April/May 2008
Reformer	Heater	17NHTHTRS	Reformer Charge 2	0.065	144.12	0.033	April/May 2008
Reformer	Heater	17NHTHTRS	Reformer Charge 3	0.060	79.52	0.033	April/May 2008
Reformer	Heater	17NHTHTRS	Reformer Charge 4	0.050	56.21	0.033	April/May 2008
Reformer	Heater	17NHTHTRS	Reformer Charge 5	0.145	19.00	0.033	April/May 2008
Reformer	Heater	17NHTHTRS	Reformer Charge 6	0.145	24.00	0.033	April/May 2008
Demex	Heater	10DEMEXH-4	DEMEX DMO Phase, 3H-4	0.120	98.00	0.030	October 2009
No. 1 Crude	Heater	01ACU1H101	ACU-1 Charge, H-101	0.080	145.00	0.030	October 2009
Vacuum Distillation Unit No. 1	Heater	01VACTH301	VDU-1 Charge, H-301	0.100	105.00	0.030	October 2010
No. 2 Crude	Heater	02ACU2H201	ACU-2 Charge, H-201	0.077	129.00	0.030	1 st Quarter 2011
Unibon	Heater	13UNIBH301	Unibon Charge, 13H-1	0.120	100.00	0.030	October 2013

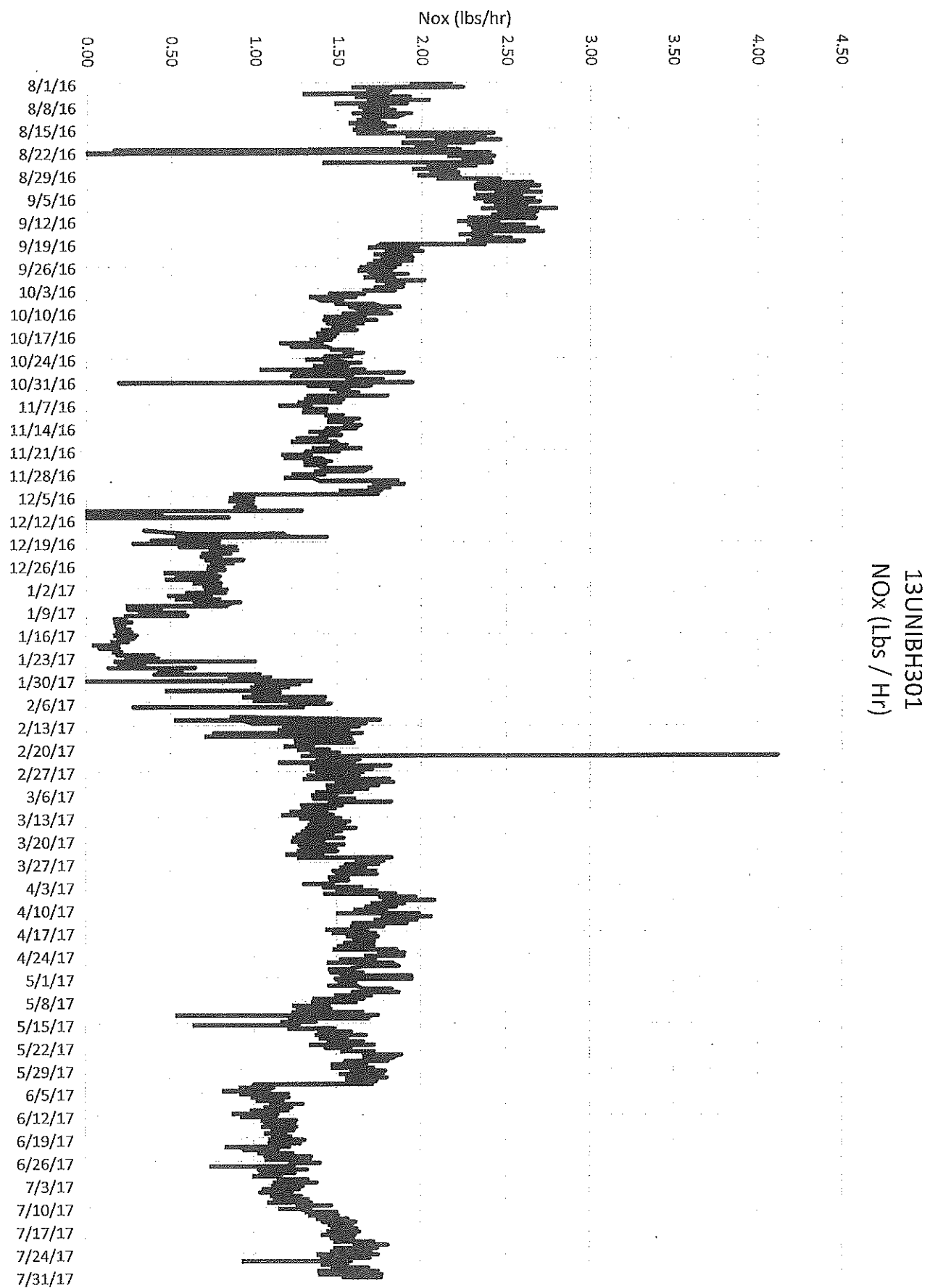
Note: The NHT Heaters share a common stack. The Reformer Heaters also share a common stack. Vacuum Distillation Unit No. 1 (VDU-1) previously referenced as Vacuum Unit.

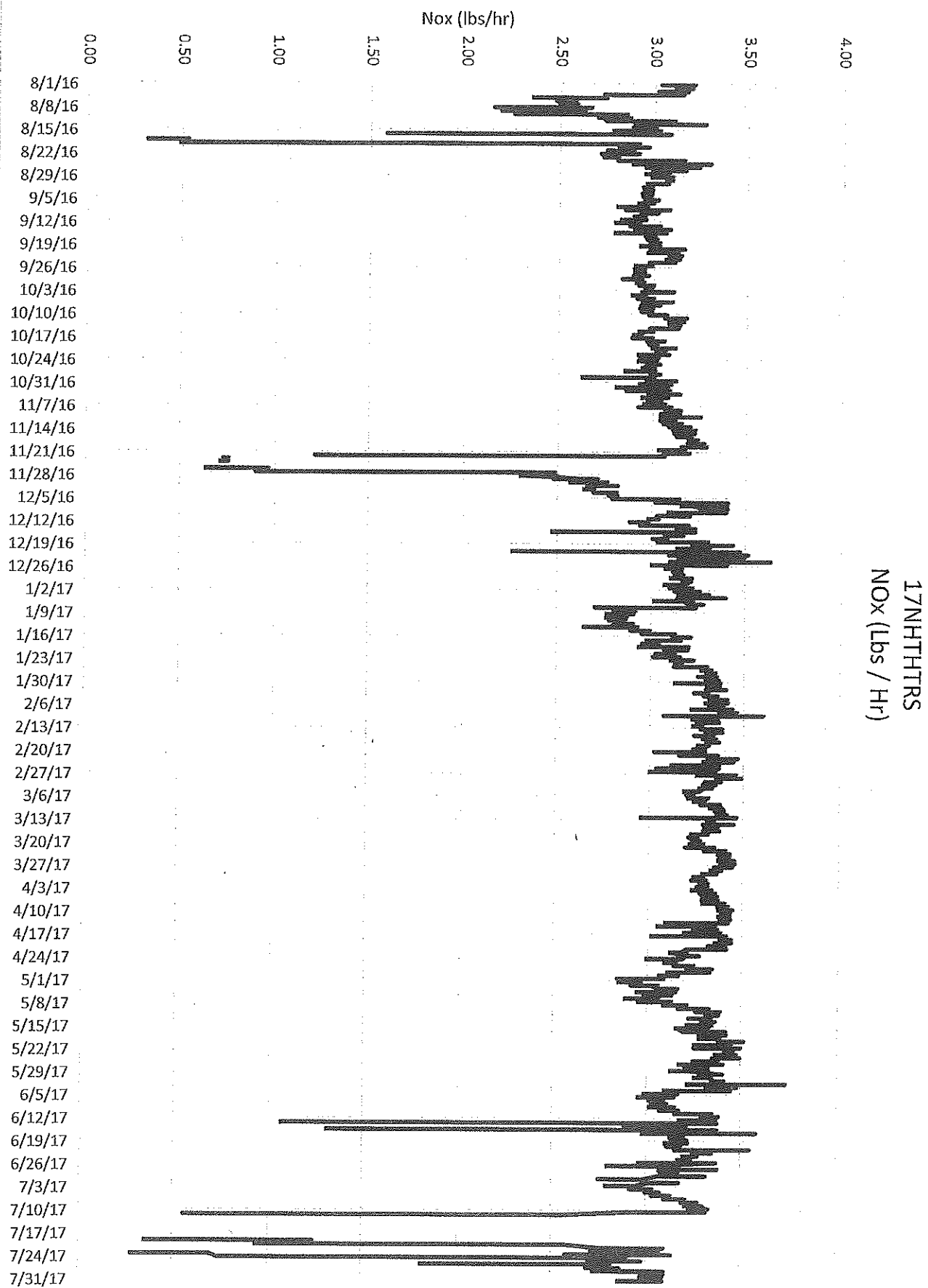
01ACU1H101
NOX (Lbs / Hr)

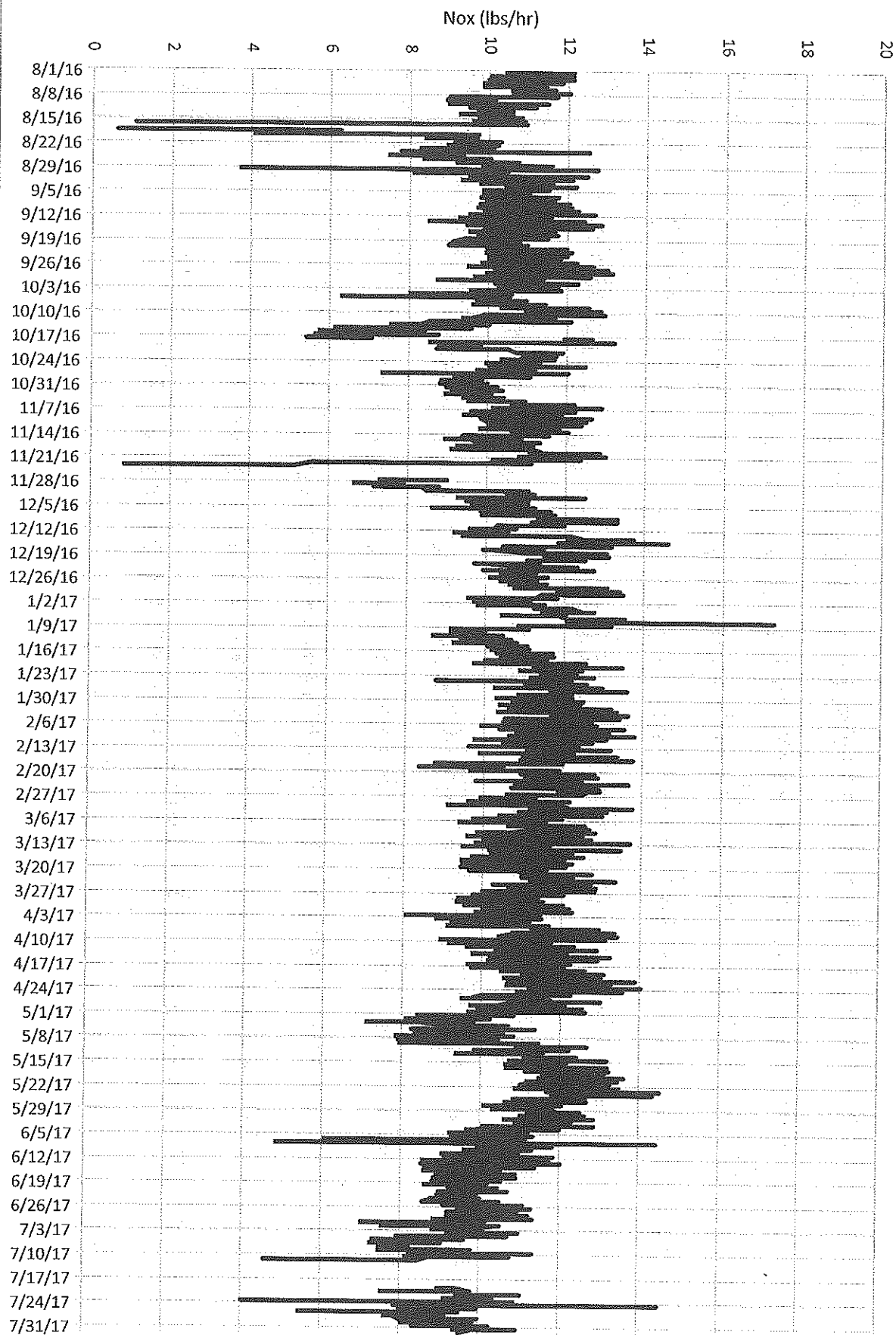






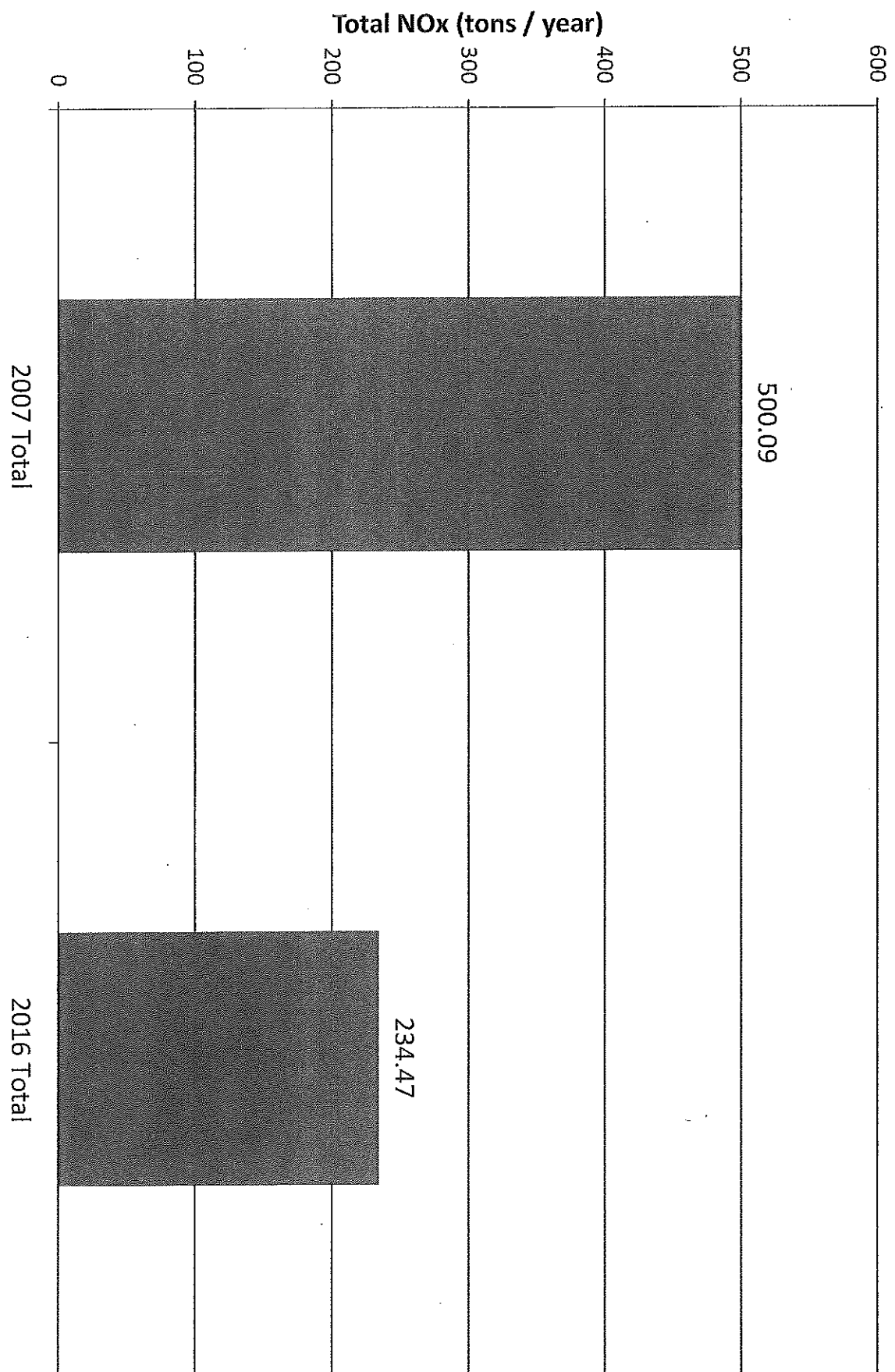




17REFHTRS
NOx (Lbs / Hr)

Total Annual NOx Emissions

Appendix A - Initial Inventory of Covered Heaters and Boilers



Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 9
Refinery fuel gas system written description, mix drum
H₂S analyzer trend.

EPA Region VI – Agency On-site Audit
August 22 -25, 2017
Consent Decree Reference Case No. 90-5-2-1-08283/3
TOTAL Petrochemicals USA, Inc.
Port Arthur Refinery, Port Arthur, Texas
Heaters / Boilers

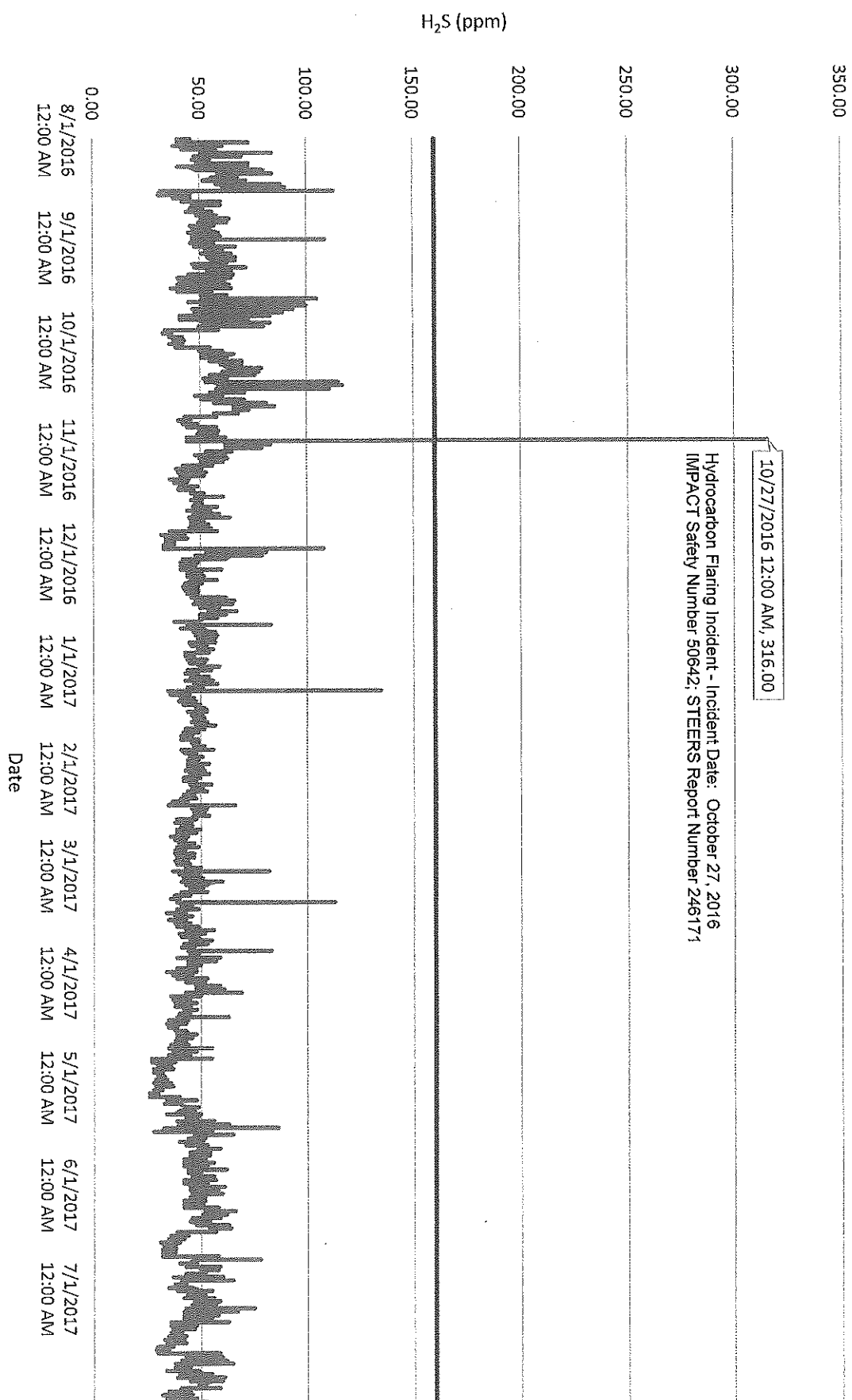
FUEL GAS SYSTEM OVERVIEW

In refining crude oil that contains sulfur and nitrogen produces products, fuel gas and waste water streams containing hydrogen sulfide (H_2S), ammonia (NH_3), organic sulfur, and carbon dioxide (CO_2) is produced. Burning sour fuel gas in refinery furnaces forms sulfur dioxide (SO_2) and air quality regulations now limit SO_2 emissions from furnace stacks.

Total Petrochemicals & Refining USA INC., Port Arthur Refinery has an extensive fuel gas system that consist of numerous off-gas producers and consumers. Due to the nature of the crude processed by the Port Arthur Refinery, off-gas treating facilities are needed to remove H_2S , and CO_2 from the off-gas, prior to being utilized in a fired source. The units responsible for the treatment of these sour gases are, Amine-1, and Amine -2. A vast majority of the refinery off-gas streams are routed to these two units for treatment. There are several off-gas producing units that produces a “sweet-gas”, i.e. off-gas containing no H_2S . This “sweet gas” does not require further treatment and is sent directly into the fuel gas system.

Once the off-gas is treated, all the treated gas, sweet gas, and natural gas streams are routed the Low Pressure Fuel Gas Mix Drum 14V-106A. This drum serves as a surge drum for the incoming gas streams before the gas is utilized in the refinery process. The sweet gas that is distributed to the refinery from this drum is monitored continuously for stream composition. One of the constituents monitored is H_2S . This treated refinery fuel gas, is then used throughout the refinery in the fired sources.

V-106A Fuel Gas Drum Data (H₂S) (Compliance Point) 3-Hour Rolling Average

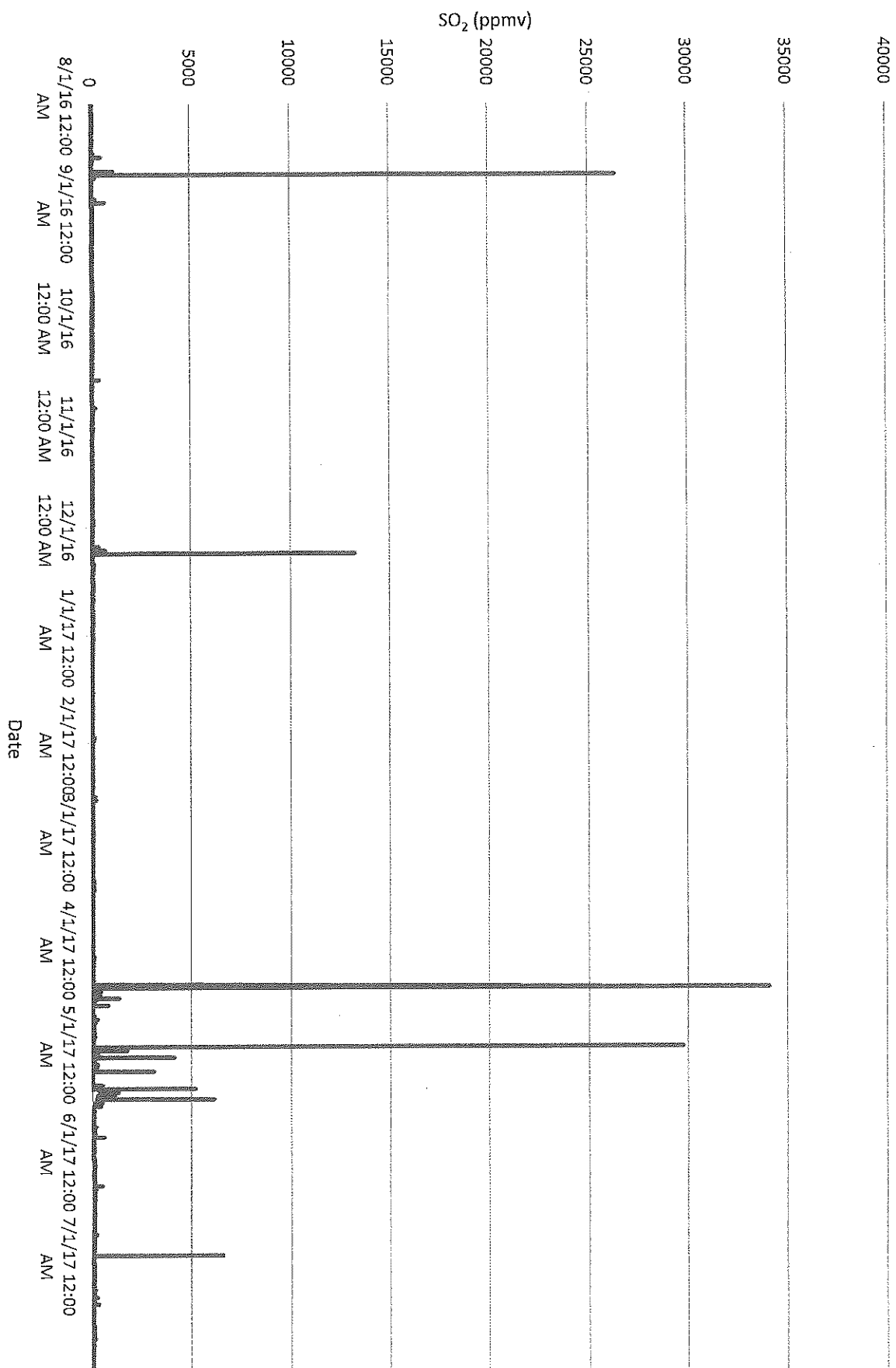


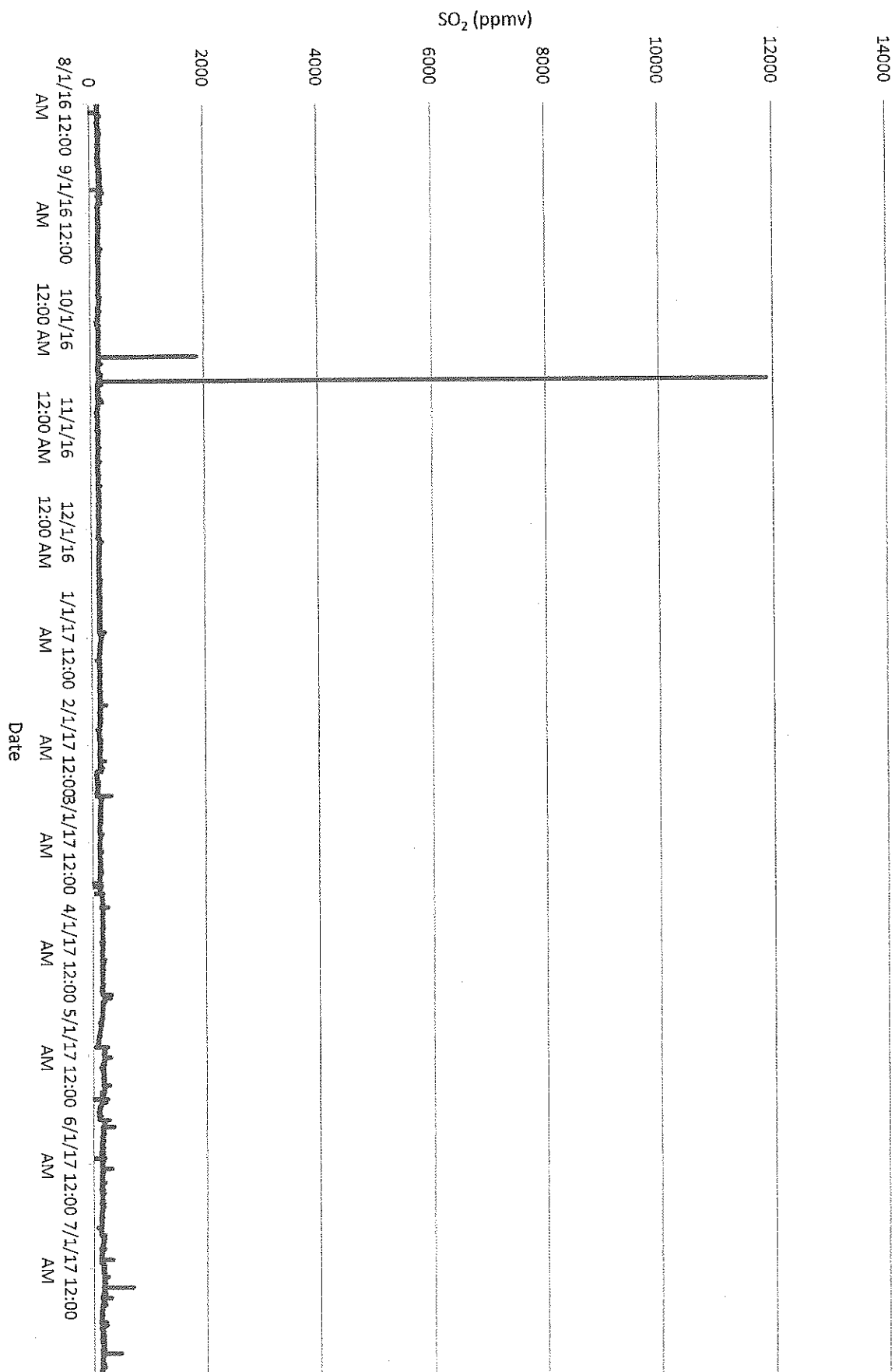
Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 10

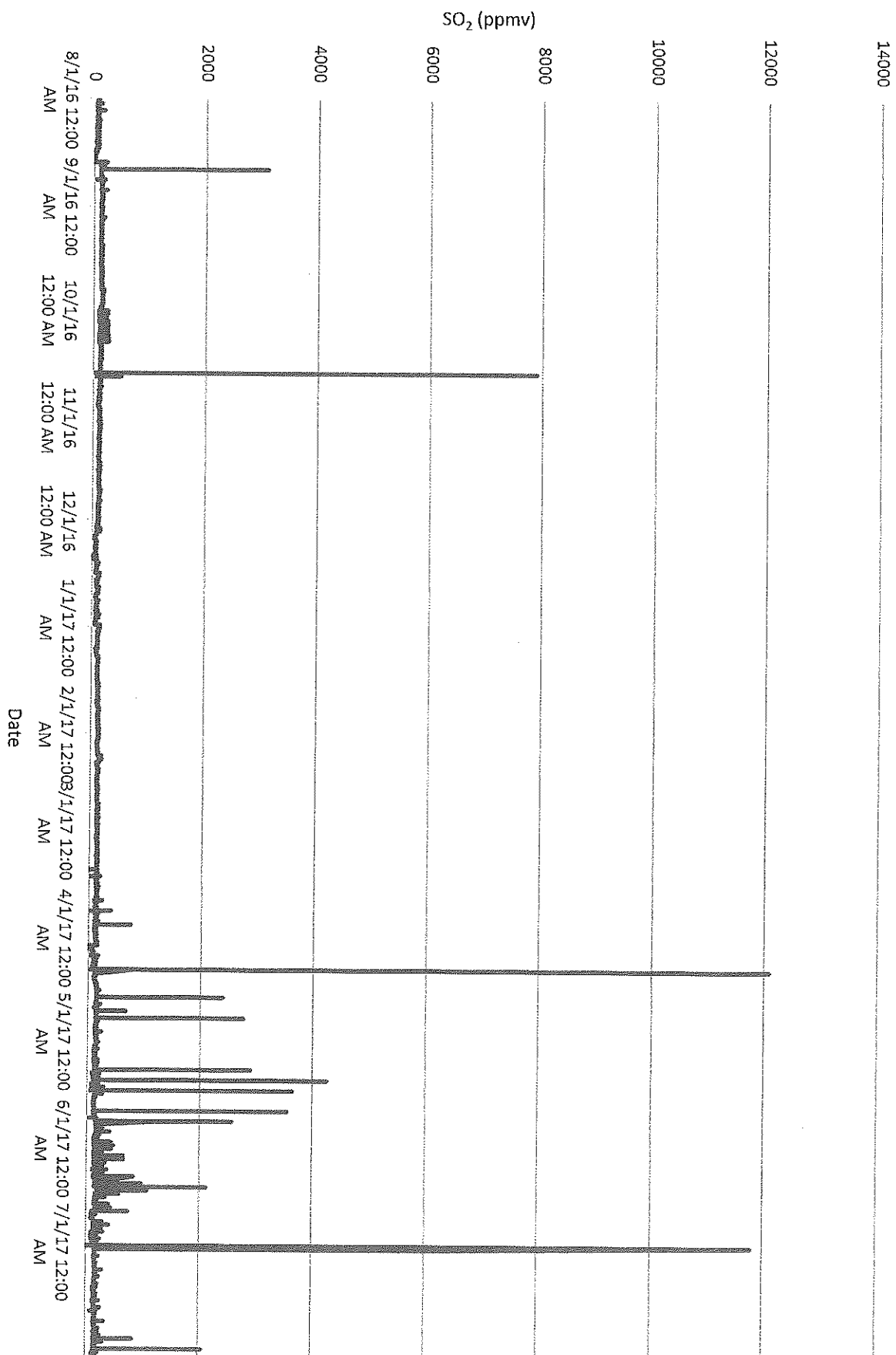
SRP's SO₂ emission trends.

SRU-1 and 3 Tailgas Thermal Oxidizer (TTO-1)
CALCULATED CORR SO₂ (ppmv)



SRU-IV Tailgas Thermal Oxidizer (TTO-4)
CALCULATED CORR SO₂ (ppmv)

SRU-V Tailgas Thermal Oxidizer (TTO-5)
CALCULATED CORR SO₂ (ppmv)

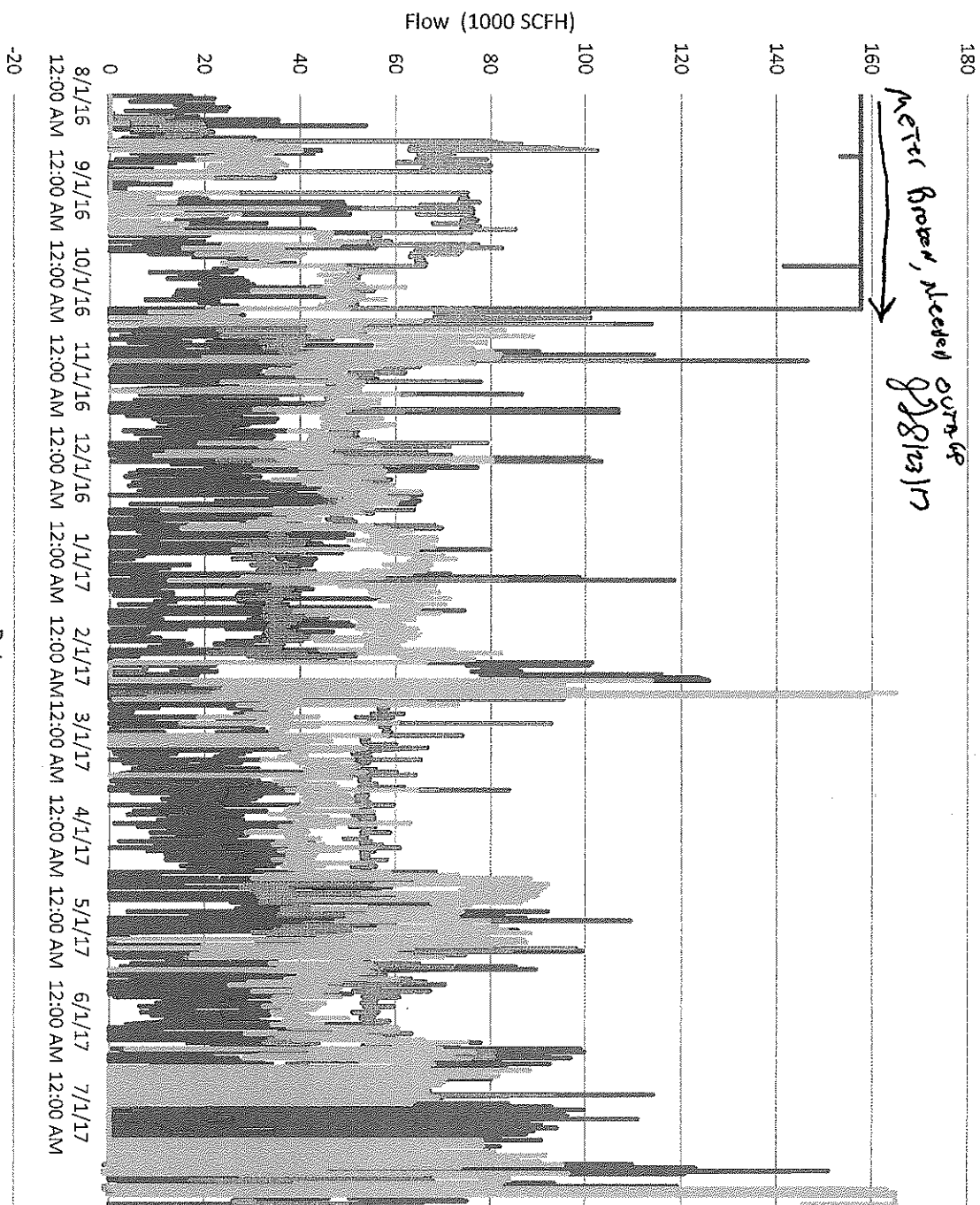


Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 11

Flare Gas Recovery Compressors Recorded Operational Parameters.

Load - FGR Compressor Hourly Average



FGR GAS OUT OF V-401
 FGR GAS SPILLBACK FLOW
 S FLR FGR Comp Flow
 S FLR FGR Comp Spill Back Flow

8/28/17
 8/28/17

Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 12

Hydrocarbon and Acid Gas Flaring Events

EPA Region VI -- Agency On-site Audit
August 22 -25, 2017
Consent Decree Reference Case No. 90-5-2-1-08283/3
TOTAL Petrochemicals USA, Inc.
Port Arthur Refinery, Port Arthur, Texas
Flares

Hydrocarbon Flaring Incidents

Date of Incident	Type of Incident	IMPACT No.
29-Aug-07	Hydrocarbon Flaring	18826
2-Sep-07	Hydrocarbon Flaring	18847
13-Sep-07	Hydrocarbon Flaring	Hurricane Humbreto
18-Sep-07	Hydrocarbon Flaring	18948
24-Sep-07	Hydrocarbon Flaring	19069
2-Oct-07	Hydrocarbon Flaring	19171
12-May-09	Hydrocarbon Flaring	24880
14-May-09	Hydrocarbon Flaring	24934
12-Jun-09	Hydrocarbon Flaring	25198
13-Jul-09	Hydrocarbon Flaring	25467
29-Oct-09	Hydrocarbon Flaring	26632
15-Mar-10	Hydrocarbon Flaring	27862
1-May-10	Hydrocarbon Flaring	28321
16-May-10	Hydrocarbon Flaring	28597
20-May-10	Hydrocarbon Flaring	28598
4-Jul-10	Hydrocarbon Flaring	28959
14-Aug-10	Hydrocarbon Flaring	29425
12-Jan-11	Acid Gas Flaring	31267
13-Jan-11	Acid Gas Flaring	31291
17-Aug-11	Acid Gas Flaring	33599
7-Sep-11	Acid Gas Flaring	33818
16-Dec-12	Acid Gas Flaring Incident	38493
16-Mar-11	Hydrocarbon Flaring	152056
17-Mar-11	Hydrocarbon Flaring	32068
21-Apr-11	Hydrocarbon Flaring	32445
11-May-11	Hydrocarbon Flaring	32631
26-May-11	Hydrocarbon Flaring	32796
18-Jul-11	Hydrocarbon Flaring	33323
26-Jul-11	Hydrocarbon Flaring	33389
4-Aug-11	Hydrocarbon Flaring	33475
20-Aug-11	Hydrocarbon Flaring	33612
17-Sep-11	Hydrocarbon Flaring	
20-Sep-11	Hydrocarbon Flaring	
22-Sep-11	Hydrocarbon Flaring	
7-Oct-11	Hydrocarbon Flaring	34254
15-Oct-11	Hydrocarbon Flaring	34417
12-Nov-11	Hydrocarbon Flaring	
24-Nov-11	Hydrocarbon Flaring	34932
29-Nov-11	Hydrocarbon Flaring	34984
25-Jan-12	Hydrocarbon Flaring	35502

EPA Region VI – Agency On-site Audit
August 22 -25, 2017
Consent Decree Reference Case No. 90-5-2-1-08283/3
TOTAL Petrochemicals USA, Inc.
Port Arthur Refinery, Port Arthur, Texas
Flares

Hydrocarbon Flaring Incidents

Date of Incident	Type of Incident	IMPACT No.
12-Sep-12	Hydrocarbon Flaring	37660
14-Sep-12	Hydrocarbon Flaring	37677
17-Sep-12	Hydrocarbon Flaring	37684
20-Jan-13	Hydrocarbon Flaring	38755
1/24/2013	Hydrocarbon Flaring	38771
4/14/2013	Acid Gas Flaring Hydrocarbon Flaring	39593
4/28/2013	Hydrocarbon Flaring	39875
5/4/2013	Hydrocarbon Flaring	39876
5/19/2013	Hydrocarbon Flaring	40055
16-Jun-13	Hydrocarbon Flaring	40252
19-Jul-13	Hydrocarbon Flaring	40557
4-Aug-13	Hydrocarbon Flaring	40664
27-Sep-13	Hydrocarbon Flaring	41178
12-Oct-13	Hydrocarbon Flaring	41311
18-Oct-13	Hydrocarbon Flaring	41423
29-Oct-13	Hydrocarbon Flaring Incident	41454
12-Dec-13	Hydrocarbon Flaring Incident	41844
30-Dec-13	Hydrocarbon Flaring Incident	41965
6-Jan-14	Hydrocarbon Flaring Incident	42006
		42397
22-Jan-14	Hydrocarbon Flaring Incident	42167
24-Jan-14	Hydrocarbon Flaring Incident	42177
25-Jan-14	Hydrocarbon Flaring Incident	42179
29-Jan-14	Hydrocarbon Flaring Incident	42228
30-Jan-14	Hydrocarbon Flaring Incident	42228
2-Apr-14	Hydrocarbon Flaring Incident	42754
15-Apr-14	Hydrocarbon Flaring Incident	42868
22-Aug-14	Hydrocarbon Flaring Incident	43851
30-Aug-14	Hydrocarbon Flaring Incident	43900
30-Sep-14	Hydrocarbon Flaring Incident	44135
30-Sep-14	Hydrocarbon Flaring Incident	44147
23-Oct-14	Hydrocarbon Flaring Incident	44428
1-Nov-14	Hydrocarbon Flaring Incident	44496 and 44497
1-Nov-14	Hydrocarbon Flaring Incident	44499
6-Nov-14	Hydrocarbon Flaring Incident	44451
9-Nov-14	Hydrocarbon Flaring Incident	
14-Nov-14	Hydrocarbon Flaring Incident	44605
28-Nov-14	Hydrocarbon Flaring Incident	44690
1/2/2015	Hydrocarbon Flaring Incident	44933
1/7/2015	Hydrocarbon Flaring Incident	44969
1/7/2015	Hydrocarbon Flaring Incident	44969

J0210220:
The January 24 and 25
Incident were reported as 1
HFL.

J0210220:
See Nov 9 and 11 AGF
Incident.

EPA Region VI – Agency On-site Audit
August 22 -25, 2017
Consent Decree Reference Case No. 90-5-2-1-08283/3
TOTAL Petrochemicals USA, Inc.
Port Arthur Refinery, Port Arthur, Texas
Flares

Hydrocarbon Flaring Incidents

Date of Incident	Type of Incident	IMPACT No.
25-Jan-15	Hydrocarbon Flaring Incident	45114
25-Jan-15	Hydrocarbon Flaring Incident	45117
5-Mar-15	Hydrocarbon Flaring Incident	45478
12-Mar-15	Hydrocarbon Flaring Incident	45548
21-Mar-15	Hydrocarbon Flaring Incident	45620
28-Mar-15	Hydrocarbon Flaring Incident	45683
28-Mar-15	Hydrocarbon Flaring Incident ??????	45684
15-Apr-15	Hydrocarbon Flaring Incident	45849
21-Apr-15	Hydrocarbon Flaring Incident	45917
23-Apr-15	Hydrocarbon Flaring Incident	45923
26-Apr-15	Hydrocarbon Flaring Incident	45960
6/7/2015	Hydrocarbon Flaring Incident Taileas Incident	46307
6/13/2015	Hydrocarbon Flaring	46377
7/31/2015	Hydrocarbon Flaring	46794
11/7/2015	Hydrocarbon Flaring Incident	47592
11/21/2015	Hydrocarbon Flaring Incident	47717
12/5/2015	Hydrocarbon Flaring Incident	47847
12/17/2015	Hydrocarbon Flaring Incident	47957
1/8/2016	Hydrocarbon Flaring Incident	48073
1/9/2016	Hydrocarbon Flaring Incident	48094
3/22/2016	Hydrocarbon Flaring Incident	48694
6/20/2016	Hydrocarbon Flaring Incident	49502
7/8/2016	Hydrocarbon Flaring Incident	49691
8/9/2016	Hydrocarbon Flaring Incident	49940
8/16/2016	Hydrocarbon Flaring Incident	50015
10/15/2016	Hydrocarbon Flaring Incident	50504
10/26/2016	Hydrocarbon Flaring Incident	50595
10/27/2016	Hydrocarbon Flaring Incident	50642
11/27/2016	Hydrocarbon Flaring Incident	50835
1/7/2017	Hydrocarbon Flaring Incident	51136
2/7/2017	Hydrocarbon Flaring Incident	51476
2/23/2017	Hydrocarbon Flaring Incident	51623
6/25/2017	Hydrocarbon Flaring Incident	52675
7/3/2017	Hydrocarbon Flaring Incident	52741

EPA Region VI – Agency On-site Audit
August 22 -25, 2017
Consent Decree Reference Case No. 90-5-2-1-08283/3
TOTAL Petrochemicals USA, Inc.
Port Arthur Refinery, Port Arthur, Texas
Flares

Acid Gas Flaring Incidents

Date of Incident	Type of Incident	IMPACT No.
12/16/2012	Acid Gas Flaring Incident	38493
4/14/2013	Acid Gas Flaring Hydrocarbon Flaring Tailgas Incident	39593
9/29/2013	Acid Gas Flaring Tailgas Incident	41186
11/11/2014	Acid Gas Flaring Incident	44590
4/15/2015	Acid Gas Flaring Incident Tailgas Incident	45850
12/8/2015	Acid Gas Flaring Incident	47871
10/19/2016	Acid Gas Flaring Incident Tailgas Incident	50543

Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 13

BWON description and Flow Diagram, Carbon Canisters
and BWON Storage tanks

EPA NRI CONSENT DECREE: BWON PROCESS DESCRIPTION

The wastewater streams at TOTAL PAR are generally managed in one of three pretreatment systems: the North Process Wastewater System (NPWS), South Process Wastewater System (SPWS), and Benzene NESHAP Pretreatment. The North Process Wastewater System (NPWS), South Process Wastewater System (SPWS), NESHAP sewer system, controlled oil recovery system, and the recovered/slop oil tankage manage those waste streams that are required to be controlled pursuant to the requirements of the BWON.

Total PAR complies with an uncontrolled benzene quantity of 6 Mg/Yr as allowed by the First Amendment to the TOTAL Consent Decree filed on September 20, 2013. The First Amendment to the Consent Decree required PAR to comply with a 4.2 Mg/Yr compliance option until March 31, 2015. After this date, PAR could then choose to comply with the normal (6BQ) compliance option, or "treat to target" compliance option under 40 CFR §61.342(e)(2).

The BWON compliance strategy at TOTAL PAR was, and still is, to segregate and treat selected high-benzene containing waste streams and to control refinery slop oils in WMUs operated according to the requirements of the BWON rule. Therefore, each waste stream at TOTAL PAR was grouped into one of the two following categories to identify the method of compliance for that stream under BWON.

1. Streams managed in controlled waste management units [§61.342(c)(1)]
2. Streams managed in uncontrolled waste management units that sum to less than 6.0 Mg/yr benzene (6 BQ) [§61.342(e)(2), First Amendment to the Consent Decree filed on September 20, 2013]

A detailed discussion of each of the categories of waste streams at the TOTAL PAR is provided below.

1.1 §61.342(c)(1) Controlled Waste Streams

Organic and aqueous streams that have been chosen for control are managed in controlled waste management units (WMU). The aqueous wastes (subject to §61.342(c)(1)) flow from the unit process sewers, comingles with process storm water and is directed to the North and South Process Water Sewer Systems where primary solids/liquids separation occurs. The North and South Process Water Sewer Systems utilize a corrugated plate interceptor (CPI) and rapid mix tank with chemical addition to carry out the separation. Free oil by-product is removed from the CPIs via slotted oil skimming pipes. The removed oil byproduct is returned back to process for re-processing. The settled solids are removed from the CPIs and further processed at the Solids/Liquids Separation System at PAR. From primary pretreatment, aqueous wastes are directed to the induced gas flotation unit (IGF) where primary clarification is carried out. Flocculated oil and suspended solids are removed by skimming and sent to the Solids/Liquids Separation System to recover oil and process the solids residue. This process is carried out by PAR's contracted solids handling company. Once processed, the de-watered solids are then disposed of off-site within cement kilns. Upon completing primary clarification, aqueous wastes are then directed to the equalization tanks that regulate the flow into the Enhanced Biodegradation Unit (EBU) where the final, secondary treatment is carried out.

EPA NRI CONSENT DECREE: BWON PROCESS DESCRIPTION

During heavy rain events, wastewater from the North Process Water Sewer and South Process Water Sewer may be diverted to storm water tankage which provides wastewater surge capacity. This design is necessary because the refinery has a combined storm water and process water collection system. Storm Water Tanks 500A, 500B, and 500C are the storm water surge tanks and are equipped with floating roofs that are designed to meet BWON/NSPS Kb requirements. Water from Tanks 500A/B/C is then sent to the equalization tanks which feed the EBU or to the South Process Water Sewer when capacity becomes available following storm events. Any oil skimmed off of Tanks 500A/B/C is sent to the recovered oil system that is controlled under BWON.

Aqueous wastes containing greater than 10 ppmw benzene are segregated from the North and South Process Water Sewer Systems by directing the flow to PAR's Benzene NESHAP Pretreatment System. This system consists of two parallel sets of American Petroleum Institute (API) and dissolved nitrogen flotation (DNF) separators for the purpose of primary and secondary oil/water/solids separation as well as primary clarification of benzene containing aqueous waste. The APIs and DNFs are equipped with an off-gas control system to prevent the release of benzene air emissions. Free oil by-product is removed from the API separators via drum skimmers and slotted oil skimming pipes. The removed oil by-product is process within PAR's recovered oil system to remove water. The processed oil by-product is then returned back to process for re-processing. The settled solids are removed from the API Separators and processed in PAR's Solids/Liquids Separation System. The removed DNF float is processed in the Solids/Liquids Separation System to recover oil and dewater the solids residue to prepare for treatment by PAR's contracted solids handling company. Once processed, the de-watered solids are also disposed of off-site in cement kilns. Upon completing primary clarification, aqueous wastes are then directed to the equalization tanks that regulate the flow into the Enhanced Biodegradation Unit (EBU) where the final, secondary treatment is carried out.

Throughout the entire route, both the aqueous and organic wastes are managed in controlled WMUs. The aqueous wastes are controlled up to the point where the benzene concentration is below 10 ppmw and the waste has reached the refinery's Enhanced Biodegradation Unit (EBU) as provided for in §61.348(b)(2). The greater than 10 ppmw streams that are managed in controlled WMUs are comingled with streams with a benzene content of less than 10 ppmw and/or are not selected for control as provided by §61.348(e)(2) in order to facilitate management in the EBU. The organic (hydrocarbon) or hydrocarbon skim streams are generally managed in the recovered/slop oil tankage system. The recovered oil is managed in controlled WMUs (i.e., tankage) prior to recycle pursuant to the requirements of §61.342(c)(1)(iii).

1.2 §61.342(e)(2) Uncontrolled Waste Streams

Streams not selected for control under §61.342(c)(1) are not required to be managed in controlled WMUs as long as the total benzene quantity of these streams sums to 6.0 Mg/Yr or less. A list of uncontrolled streams as documented in the Total PAR TAB can be made available upon request. Uncontrolled streams are monitored according to the Total PAR End of Line (EOL) Sampling Plan. A copy of the EOL Sampling Plan can also be made available upon request.

EPA NRI CONSENT DECREE: BWON PROCESS DESCRIPTION

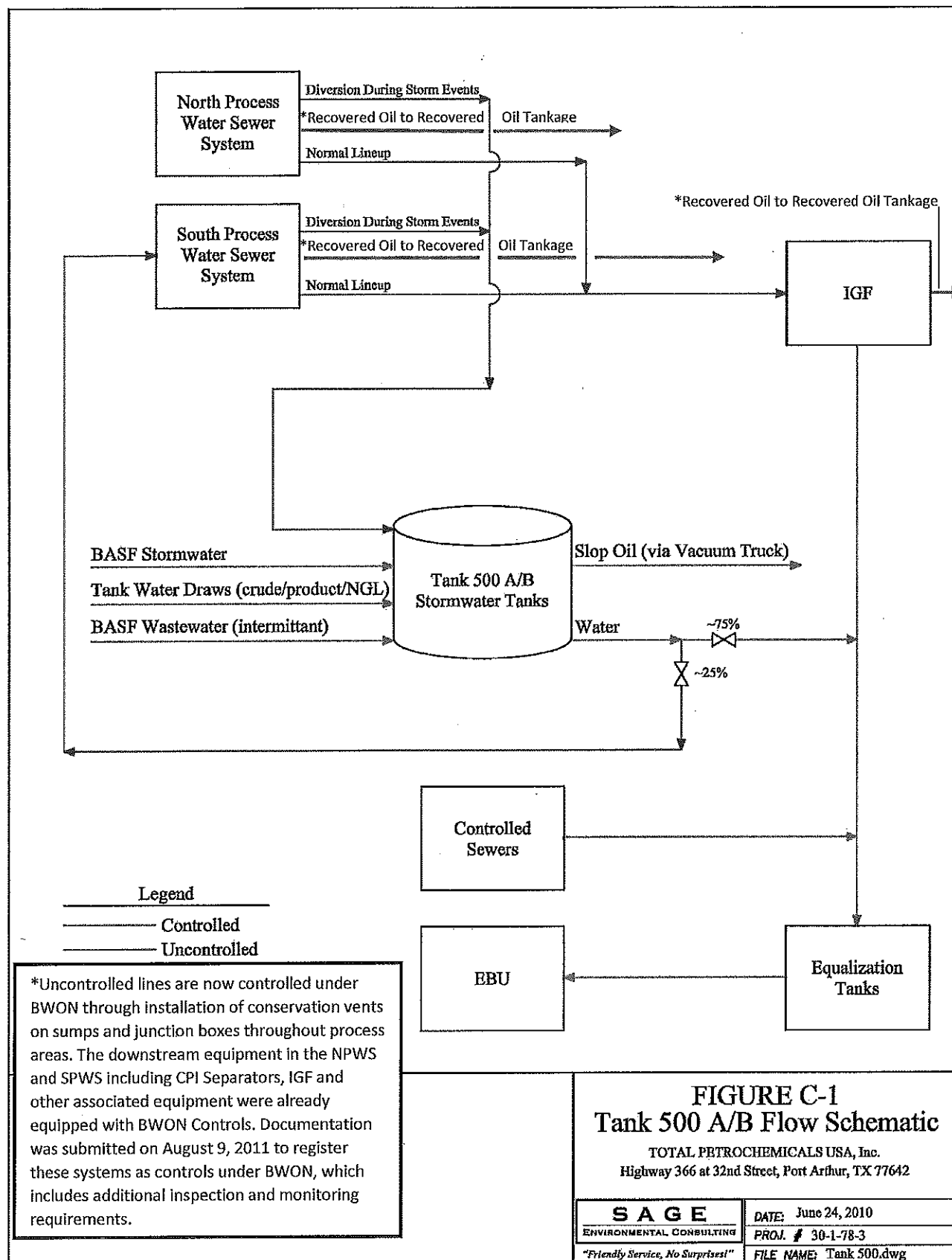
1.3 Historical Achievements at Total PAR

Effective June 30, 2011, TOTAL PAR completed a project by which most of the streams associated with the BWON-uncontrolled refinery wastewater collection system contributing to the North Process Water Sewer¹ and the South Process Water Sewer² subsystems are now controlled. The remaining uncontrolled streams are now discrete EOL sample points and are identified in Total PAR EOL Sampling Plan. A copy of the EOL Sampling Plan details can be made available upon request.

¹ The North Process Water Sewer collects wastewater from the northern process area of the refinery.

² The South Process Water Sewer collects wastewater from the southern process area of the refinery.

EPA NRI CONSENT DECREE AUDIT: BENZENE RECOVERY PROCESS DIAGRAM (SIMPLIFIED)



Sage Environmental Consulting, L.P.
 June 2010 (Rev 1)

TOTAL PETROCHEMICALS USA
 BWON Third Party Review

Storage Tanks in BWON Service

Tank	Product	Inspection Date	Visual	Secondary Seal	Primary Seal
941	Aromatics	5/16/2017	x		
946	Aromatics	12/13/2016	x		
808	Benzene	6/26/2017	x		
809	Benzene	9/21/2016	x		
810	Benzene	12/13/2016	x		
926	Benzene	2/8/2017	x		
928	Benzene	3/27/2017	x		
929	Benzene	4/19/2017	x		
930	Benzene	5/16/2017	x		

EPA Region VI – Agency On-site Audit
August 22 -25, 2017
Consent Decree Reference Case No. 90-5-2-1-08283/3
TOTAL Petrochemicals USA, Inc.
Port Arthur Refinery, Port Arthur, Texas
BWON
Carbon Canisters - Master List

Component ID	Component Tag	Unit Description	Area Description	Component Type	Location Description
1201154	FF - 243100	830 COGEN SEWER	830 - Cogen	Carbon Can	S End of Cogen N of TK 903 / Cogen Storm Water
1201155	FF - 243200	830 COGEN SEWER	830 - Cogen	Carbon Can	S End of Cogen N of TK 903 / Cogen Storm Water
1201156	FF - 243300	830 COGEN SEWER	830 - Cogen	Carbon Can	S End of Cogen NW of TK 104 / Cogen OWS Sump
1201157	FF - 243400	830 COGEN SEWER	830 - Cogen	Carbon Can	S End of Cogen NW of TK 104 / Cogen OWS Sump
1201158	FF - 242700	826 DHT2 Florida Sewer	826 - DHT-2/Florida	Carbon Can	Florida Unit Sump / Florida Unit OWS Sump
1201159	FF - 242800	826 DHT2 Florida Sewer	826 - DHT-2/Florida	Carbon Can	Florida Unit Sump / Florida Unit OWS Sump
1201160	FF - 240500	838 GHT1 SEWER	838 - GHT	Carbon Can	Southwest of GHT / GHT OWS Sump
1201161	FF - 240600	838 GHT1 SEWER	838 - GHT	Carbon Can	Southwest of GHT / GHT OWS Sump
1201162	FF - 240700	829 Amine-01 Sewer	829 - Amine	Carbon Can	ARU 1 Amine Sump
1201163	FF - 240800	829 Amine-01 Sewer	829 - Amine	Carbon Can	ARU 1 Amine Sump
1201164	FF - 243500	812 ACU-02 Sewer	812 - ACU-2	Carbon Can	Jet Treater Sump
1201165	FF - 243600	812 ACU-02 Sewer	812 - ACU-2	Carbon Can	Jet Treater Sump
1201166	FF - 246300	780-OM&S Sewer	780 - OM&S	Carbon Can	38V-107 Drum/Sour Water TK-1002 / Sour Water Skimmer
1201167	FF - 246400	780-OM&S Sewer	780 - OM&S	Carbon Can	38V-107 Drum/Sour Water TK-1002 / Sour Water Skimmer
1201168	FF - 246500	780-OM&S Sewer	780 - OM&S	Carbon Can	Old Truck Loading Rack / W of TK-2001
1201169	FF - 246600	780-OM&S Sewer	780 - OM&S	Carbon Can	Old Truck Loading Rack / W of TK-2001
1201170	FF - 245500	780-OM&S Sewer	Dock - 1	Carbon Can	End of Dock 1 / Dock 1 Spillback Collection Sump
1201171	FF - 245600	780-OM&S Sewer	Dock - 1	Carbon Can	End of Dock 1 / Dock 1 Spillback Collection Sump
1201172	FF - 244700	780-OM&S Sewer	Dock - 2	Carbon Can	End of Dock 2 / Dock 2 Spillback Collection Sump
1201173	FF - 244800	780-OM&S Sewer	Dock - 2	Carbon Can	End of Dock 2 / Dock 2 Spillback Collection Sump
1201174	FF - 245100	780-OM&S Sewer	Dock - 3A	Carbon Can	West Side of Dock 3A / 45V3 Collection Sump
1201175	FF - 245200	780-OM&S Sewer	Dock - 3A	Carbon Can	West Side of Dock 3A / 45V3 Collection Sump
1201176	FF - 245300	780-OM&S Sewer	Dock - 3A	Carbon Can	South Side Dock 3A / Dock 3A Spillback Collection Sump
1201177	FF - 245400	780-OM&S Sewer	Dock - 3A	Carbon Can	South Side Dock 3A / Dock 3A Spillback Collection Sump
1201178	FF - 244900	780-OM&S Sewer	Dock - 3B	Carbon Can	South Side Dock 3B / Dock 3B Spillback Collection Sump
1201179	FF - 245000	780-OM&S Sewer	Dock - 3B	Carbon Can	South Side Dock 3B / Dock 3B Spillback Collection Sump
1201180	FF - 240300	75-Lab	75-Lab	Carbon Can	EAST OF LABORATORY / REFINERY QUALITY CONTROL LAB SUMP
1201181	FF - 240400	75-Lab	75-Lab	Carbon Can	EAST OF LABORATORY / REFINERY QUALITY CONTROL LAB SUMP
1201182	FF - 245700	763-PWTC Sewer	780 - PWTC	Carbon Can	West of PWTC Control Room / pH Adjuster Splitter Tank
1201183	FF - 245800	763-PWTC Sewer	780 - PWTC	Carbon Can	West of PWTC Control Room / pH Adjuster Splitter Tank
1201184	FF - 243900	763-PWTC Sewer	832 - PWTC	Carbon Can	South of Stormwater Sump / South Storm Water Sump and Catch Basin
1201185	FF - 244000	763-PWTC Sewer	832 - PWTC	Carbon Can	South of Stormwater Sump / South Storm Water Sump and Catch Basin
1201186	FF - 240900	763-PWTC Sewer	835 - FCCU	Carbon Can	NORTH CPI
1201187	FF - 241000	763-PWTC Sewer	835 - FCCU	Carbon Can	North CPI
1201188	FF - 241100	763-PWTC Sewer	835 - FCCU	Carbon Can	North Barrel Sump
1201189	FF - 241200	763-PWTC Sewer	835 - FCCU	Carbon Can	NORTH OF BARREL SUMP
1201190	FF - 241300	763-PWTC Sewer	835 - FCCU	Carbon Can	North Stormwater Sump
1201191	FF - 241400	763-PWTC Sewer	835 - FCCU	Carbon Can	North Stormwater Sump
1201192	FF - 246100	763-PWTC Sewer	855 - DHT-3	Carbon Can	DCU Stormwater Sump
1201193	FF - 246200	763-PWTC Sewer	855 - DHT-3	Carbon Can	DCU Stormwater Sump
1201194	FF - 241500	763-PWTC Sewer	866 - SWS-4	Carbon Can	Sulfur Block Oily Water Drum / Sulfur Block OWS
1201195	FF - 241600	763-PWTC Sewer	866 - SWS-4	Carbon Can	Sulfur Block Oily Water Drum / Sulfur Block OWS
1201196	FF - 241900	763-PWTC Sewer	871 - SRU-5	Carbon Can	67P-250 A/B STORMWATER / SULFUR BLOCK STORMWATER
1201197	FF - 242000	763-PWTC Sewer	871 - SRU-5	Carbon Can	67P-250 A/B Stormwater / Sulfur Block Stormwater
1201198	FF - 244100	763-PWTC Sewer	S, CPI	Carbon Can	South Barrel Sump
1201199	FF - 244200	763-PWTC Sewer	S, CPI	Carbon Can	South Barrel Sump
1201200	FF - 244500	763-PWTC Sewer	S, CPI	Carbon Can	Tank 660 / IGF Float Tank (TK-660)
1201201	FF - 244600	763-PWTC Sewer	S, CPI	Carbon Can	Tank 660 / IGF Float Tank (TK-660)
1201202	FF - 244300	763-PWTC Sewer	Scaltech	Carbon Can	Process Solutions (Scaltech) / ScalFuel Dewatering Unit
1201203	FF - 244400	763-PWTC Sewer	Scaltech	Carbon Can	Process Solutions (Scaltech) / ScalFuel Dewatering Unit
1201204	FF - 245900	861 KNHT Sewer	861 - KNHT	Carbon Can	DCU Oily Water Sewer / DCU OWS Sump
1201205	FF - 246000	861 KNHT Sewer	861 - KNHT	Carbon Can	DCU Oily Water Sewer / DCU OWS Sump
1201206	FF - 242500	813 DHT-2 Sewer	813 - DHT-2	Carbon Can	813 DHT-2 Carbon Can / DHT-2 Amine Sump
1201207	FF - 242600	813 DHT-2 Sewer	813 - DHT-2	Carbon Can	813 DHT-2 Carbon Can / DHT-2 Amine Sump
1201208	FF - 243700	837 Condensate Splitter Sewer	837 - Cond. Split	Carbon Can	South of Cond. Splitter / Condensate Splitter OWS Sump
1201209	FF - 243800	837 Condensate Splitter Sewer	837 - Cond. Split	Carbon Can	South of Cond. Splitter / Condensate Splitter OWS Sump
1201210	FF - 242900	850 VDU 2 Sewer	850 - VDU-2	Carbon Can	VDU-2 Sump / VDU-2 OWS Sump
1201211	FF - 243000	850 VDU 2 Sewer	850 - VDU-2	Carbon Can	VDU-2 Sump / VDU-2 OWS Sump
1201212	FF - 241700	880 Scot 4 Sewer	871 - SRU-5	Carbon Can	25TK-601 MDEA Tank
1201213	FF - 241800	880 Scot 4 Sewer	871 - SRU-5	Carbon Can	25TK-601 MDEA Tank
1201214	FF - 242100	885 Amine 2 Sewer	885 - Amine 2	Carbon Can	42TK-301 Lean Amine Tank / ARU-2 Lean Amine Tank (TK-301)
1201215	FF - 242200	885 Amine 2 Sewer	885 - Amine 2	Carbon Can	42TK-301 Lean Amine Tank / ARU-2 Lean Amine Tank (TK-301)
1201216	FF - 242300	885 Amine 2 Sewer	885 - Amine 2	Carbon Can	42TK-301 Lean Amine Tank / ARU-2 Lean Amine Tank (TK-301)
1201217	FF - 242400	885 Amine 2 Sewer	885 - Amine 2	Carbon Can	42TK-301 Lean Amine Tank / ARU-2 Lean Amine Tank (TK-301)
1202029	FF - 370200	763-PWTC Sewer	Wash Slab	Carbon Can	WEST SIDE OF WASH SLAB
1202030	FF - 370100	763-PWTC Sewer	Wash Slab	Carbon Can	WEST SIDE OF WASH SLAB
1206175	FF-0327600	780-OM&S Sewer	TK-587	Carbon Can	TK-587 N 200FT SOUTH CC 0/5 SAMPLE POINT
1206176	FF-0327700	780-OM&S Sewer	TK-587	Carbon Can	TK-587 N 200FT NORTH CC 0/5 SAMPLE POINT
1207994	FF - 0349200	807 ALKY Sewer	TK 668	Carbon Can	0/5 ALKY CARBON CAN PRIMARY LN E TK 668 TOP BV BLD
1207999	FF - 0349300	807 ALKY Sewer	TK 668	Carbon Can	0/2 ALKY CARBON CAN SECONDARY LN E TK 668 BTM BV BLD
1208067	FF - 226900	807 ALKY Sewer	TK 923	Primary	0/2 ALKY CARBON CAN PRIMARY LN N TK-923 TOP BV BLD
1208071	FF - 227000	807 ALKY Sewer	TK 923	Primary	0/5 ALKY CARBON CAN PRIMARY LN N TK-923 TOP BV BLD

Total Petrochemicals and Refining, Port Arthur Refinery
8/22-24/2017

Appendix 14

Operating Permits Excerpts

Special Conditions

Permit Numbers 46396, PSDTX1073M2, and N044

Page 3

operation (producing inaccurate data), repair, maintenance, or calibration may be exempted provided it does not exceed 5 percent of the time (in minutes) that the heater operated over the previous rolling 12 month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. (9/15)

11. The permittee shall comply with the nitrogen oxides (NO_x) and carbon monoxide (CO) emission limits represented in Attachment B. (PSD, N)

For units operated with a NO_x or CO Continuous Emissions Monitoring System (CEMS) as summarized in Attachment C of this permit, compliance shall be demonstrated using CEMS in accordance with the requirements of Special Condition No. 93.

For units operated without a CEMS, compliance shall be demonstrated using valid stack test data in accordance with Special Condition Nos. 89 & 90.

If no CEMS or stack sampling is required, the permittee shall use the emission factors and the recorded firing rate for the period represented in the most recent permit activity for each source. (08/13)

Cogeneration Unit

12. The concentration of NO_x in the stack gases from the General Electric Frame 6 gas turbine and duct burner, identified as EPN 60COGENSTK, shall not exceed 42 parts per million by volume (ppmv), except during start-up or shutdown (defined in Special Condition No. 69.A.). For determining compliance with this condition, measured stack concentrations shall be expressed on a dry basis at 15 percent oxygen (O_2). (PSD)
13. The NO_x emissions generated by the duct burners shall not exceed limits provided in Attachment B. (PSD)
14. Fuels fired in the gas turbine and duct burner are limited to:
 - A. Pipeline-quality, sweet natural gas containing no more than 5 grains total sulfur per 100 dscf (86 ppmv) and no more than 0.1 grain H_2S per 100 dscf (162 ppmv).
 - B. Refinery fuel gas meeting the requirements of Special Condition Nos. 6 and 7.
 - C. Liquefied Petroleum Gas (LPG) containing no more than 360 ppm by weight sulfur.

The use of any other fuel will require a modification to this permit.

Fluidized Catalytic Cracking Unit (FCCU)

15. The maximum allowable concentrations of CO, sulfur dioxide (SO_2) and NO_x in the FCCU flue gas vent controlled by a Wet Gas Scrubber (WGS) (EPN 55RGNFLUGS) stack shall be less than the values in Attachment D. (PSD)
16. The FCCU regenerator scrubber liquid flow rate, the liquid to gas ratio and gas pressure drop (for venturi type) shall be continuously monitored at all times. During routine operations, these parameters shall be maintained greater than the minimum one hour

Special Conditions

Permit Numbers 46396, PSDTX1073M2, and N044

Page 4

average value(s) recorded in stack sampling report(s) approved by the appropriate TCEQ Regional Office performed in accordance with Special Condition No. 90. (12/14)

The flow rates and pressures shall be recorded every six minutes as six-minute averages. Each flow and pressure monitoring device shall be calibrated at a frequency in accordance with the manufacturer's specifications, or at least annually, whichever is more frequent, and shall be accurate to within 2 percent of span or 5 percent of the design value.

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

17. Opacity of emissions from the FCCU regenerator wet gas scrubber stack must not exceed 20 percent averaged over a six-minute period. An EPA-approved alternative may be used. As part of the alternative procedure, opacity (emissions) shall be correlated with the minimum FCCU venturi scrubber system pressure drop required to meet opacity (emission) limitations. The minimum operating parameters described above shall be defined during the stack sampling tests required by Special Condition No. 90. Stack sampling monitoring data shall be reduced to appropriate units according to the procedures outlined in Special Condition No. 90 and the final results shall be used to establish the minimum operating limitations for the venturi scrubber pressure drop. The minimum venturi scrubber pressure drop and liquid flow rate operating conditions must be maintained. (PSD)
18. The holder of this permit shall inspect the process piping, which pneumatically conveys catalyst, for leaks of catalyst each calendar quarter and repair any leaks which can be repaired without a process unit shutdown. Any leaks which cannot be repaired without a process unit shutdown will be placed on a shutdown list and will be repaired during the next scheduled process unit shutdown. (PSD)
19. The holder of this permit shall install, operate and maintain pollution abatement equipment on the FCCU EPN, designated as EPN 55RGNFLUGS, to achieve a total particulate matter (PM) mass emission rate of 0.82 pound of PM per 1,000 pounds of coke burned on a three-hour average basis. Compliance with this limitation will be determined pursuant to the requirements of 40 CFR § 60.8 (Performance Tests) using EPA Reference Method 5.

The PM emissions from the FCCU EPN, designated as 55RGNFLUGS, shall not exceed 0.5 pound PM (front half only) per 1,000 pounds of coke burned on a three hour average basis. (PSD) (08/13)
20. The following continuous parameter monitoring protocol may be used as an alternative to the COMS required by 40 CFR § 60.105(a)(1), Subpart J, as recommended in EPA correspondence dated June 5, 1991 (copy on file): (PSD)

Special Conditions

Permit Numbers 46396, PSDTX1073M2, and N044

Page 5

- A. The holder of this permit shall continuously monitor and record:
- (1) The pressure drop across the wet gas scrubber and
 - (2) The scrubber liquid to gas ratio.
- B. Quarterly reports of emission exceedances shall be submitted to the appropriate TCEQ Regional Office. An emission exceedance is defined as corresponding to any three-hour period in which the average venturi pressure differential falls below a minimum three hour average value recorded in stack sampling report(s) approved by the appropriate TCEQ Regional Office performed in accordance with Special Condition No. 90.

Sulfur Recovery Block

21. The Sulfur Recovery Units (SRUs) 1, 3, 4, and 5 shall comply with the total sulfur recovered limits in the following table: (PSD)

SRU No(s).	Operating Scenario	Short Tons Per Day	Long Tons Per Day
1, 3, 4, & 5	All SRUs	844.50	754.00
1 & 3	Without O ₂ Enrichment	305.00	272.32
1 & 3	With O ₂ Enrichment	398.00	355.36
4	Not Specified	364.00	325.00
5	Not Specified	364.00	325.00

22. The minimum sulfur (S) recovery efficiency for units SRU 1 and SRU 3 shall be 99.9 percent on a daily average during normal operation, not to include periods of planned start-up, shutdown, hot standby, or planned maintenance. The sulfur recovery efficiency shall be determined by calculation as follows: (12/14)

$$Efficiency_{1/3} = \frac{(S \text{ Recovered}_{1/3}) \times 100}{(S \text{ Acid Gas}_{1/3})}$$

Where:

$S \text{ Recovered}_{1/3}$ = S produced in SRU 1 & SRU 3 (lb/day)

$S \text{ Acid Gas}_{1/3}$ = $S \text{ Recovered}_{1/3}$ + $S \text{ Stack}_{1/3}$ (lb/day)

$S \text{ Stack}_{1/3}$ = sulfur in SRU 1 & SRU 3 incinerator stacks (lb/day)

The average sulfur recovery efficiency shall be demonstrated for each calendar day (24-hour period) by a mass balance calculation using data obtained from the incinerator stack SO₂ monitor, sulfur production records, and other process flow data. The daily sulfur recovery efficiencies shall be calculated on a monthly basis. The calculated sulfur recovery efficiencies may, at the discretion of the TCEQ, be used to determine compliance

Attachment D
FCCU Fuel Gas Vent

Pollutant	Concentration at Averaging Period (ppmvd)		
	1-hour Avg.	7-day rolling	365-day rolling
Carbon monoxide	500	-	100
Sulfur Dioxide	50	50	25
Nitrogen Oxides	70	60	30

Note:

1. 7-day rolling averages and 365-day rolling averages shall be determined at 0% oxygen.
2. The NO_x emissions generated during periods of planned start-up, shutdown, or maintenance (SSM) are exempt from determining compliance with the 60 ppmvd limit on a 7-day rolling average.
3. The CO emissions generated during periods of planned SSM are exempt from determining compliance with the 500 parts per million by volume, dry (ppmvd) limit on a maximum one-hour period.
4. The SO₂ emissions generated during periods of planned SSM are exempt from determining compliance with the 50 ppmvd limit on a maximum or on a 7-day rolling average.

Dated: February 3, 2012

Special Conditions

Permit Numbers 46396, PSDTX1073M2, and N044

Page 56

92. For any tank equipped with a floating roof, the permit holder shall follow 40 CFR § 60.113b, Testing and Procedures, to verify seal integrity. Additionally, the permit holder shall follow 40 CFR § 60.115b, Reporting and recordkeeping Requirements, to provide records of the dates seals were inspected, seal integrity, and corrective actions taken.

Continuous Emissions Monitoring Systems (CEMS)

93. The permit holder shall install, calibrate, and maintain a continuous emission monitoring system (CEMS) to measure and record concentrations of indicated compounds as listed in Attachment C. (PSD, N)

- A. The CEMS in Attachment C shall meet the design and performance specifications, pass the field tests, and meet the installation requirements and the data analysis and reporting requirements specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B. If there are no applicable performance specifications in 40 CFR Part 60, Appendix B, contact the TCEQ Office of Air, Air Permits Division in Austin for requirements to be met.
- B. For sources subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F, the following applies: The holder of this permit shall assure that the CEMS meets the applicable quality-assurance requirements specified in 40 CFR Part 60, Appendix F, Procedure 1. Relative accuracy exceedances, as specified in 40 CFR Part 60, Appendix F, § 5.2.3 and any CEMS downtime shall be reported to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.
- C. For sources not subject to the quality-assurance requirements of 40 CFR Part 60, Appendix F, the following applies: The system shall be zeroed and spanned daily, and corrective action taken when the 24-hour span drift exceeds two times the amounts specified in the applicable Performance Specification Nos. 1 through 9, 40 CFR Part 60, Appendix B, or as specified by the TCEQ if not specified in Appendix B. Zero and span is not required on weekends and plant holidays if instrument technicians are not normally scheduled on those days.

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

All CGA exceedances of ± 15 percent accuracy is out of control and any CEMS downtime shall be reported to the appropriate TCEQ Regional Director, and necessary corrective action shall be taken. Supplemental stack concentration measurements may be required at the discretion of the appropriate TCEQ Regional Director.

Title 40 CFR Part 60, Appendix F applies only to those sources for which an NSPS subpart specifically requires both a continuous monitoring system and that the

Special Conditions

Permit Numbers 46396, PSDTX1073M2, and N044

Page 57

continuous monitoring system be used to demonstrate compliance with emission limits on a continuous basis.

- D. H₂S monitoring system shall comply with the fuel sulfur monitoring requirements of 40 CFR § 60.105.
- E. Data shall be monitored and recorded in accordance with Special Condition No. 96. The technique used to convert ppmv to mass emission rates lb/MMBtu shall be from 40 CFR 60, Appendix A, Method 19.
- F. All monitoring data and quality-assurance data shall be maintained by the source for a period of two years and shall be made available to the TCEQ Executive Director or designated representative upon request. The data from the CEMS may, at the discretion of the TCEQ, be used to determine compliance with the conditions of this permit.
- G. The appropriate TCEQ Regional Office shall be notified at least 30 days prior to any required RATAs in order to provide them the opportunity to observe the testing.
- H. Quality-assured (or valid) data must be generated when the facilities covered by this condition are operating except during the performance of a daily zero and span checks. Loss of valid data due to periods of monitor break down, out of control operation (producing inaccurate data), repair, maintenance, or calibration, may be exempted provided it does not exceed 5 percent of the time (in minutes) that each facility was operated over the previous rolling 12-month period. The measurements missed shall be estimated using engineering judgment and the methods used recorded. Options to increase system reliability to an acceptable value, including a redundant CEMS, may be required by the TCEQ Regional Manager.

EPA Consent Decree

- 94. As required by EPA Consent Decree, Reference Case No. 90-5-2-1-08283/3, the "Final" refinery-wide weighted-average NO_x emissions from all existing Covered Heaters and Boilers shall be no greater than 0.040 lbs. NO_x/MMBtu. Covered Heaters and Boilers are listed in Appendix A of the referenced Consent Decree. (09/14)
- 95. Total shall demonstrate compliance with the "Final" refinery-wide weighted-average NO_x emission limit in Special Condition 94, for all Existing Covered Heaters and Boilers by meeting the following inequality: (09/14)

$$0.040 \text{ lbs. NO}_x/\text{MMBtu} \geq \frac{\sum_i^n (ELR_i \times HIR_i)}{\sum_i^n HIR_i}$$

Where:

ELR_i = The relevant NO_x emission limit for Existing Covered Heater or Boiler "i" in lbs. NO_x per Million BTU (HHV).

Special Conditions

Permit Numbers 46396, PSDTX1073M2, and N044

Page 58

HIR_i = Heat input capacity of Existing covered Heater or Boiler "i" as reported in the latest annual updated to the initial inventory in Appendix A of the referenced EPA Consent Decree; and

n = Total number of Existing Covered Heaters or Boilers.

Recordkeeping

96. In addition to any records specified in other conditions of this permit, the following information shall be maintained at the site for a period of five years and shall be made available on request to representatives of the TCEQ or the EPA or any local air pollution control program having jurisdiction:
- A. Refinery Fuel Gas
 - (1) Records of the Sulfur content in the refinery fuel gas system shall be gathered as per Special Condition Nos. 6 & 7.
 - (2) Calibration records of the continuous H_2S monitoring system shall be gathered as per Special Condition No. 8.
 - B. Flare
 - (1) Records of data gathered in accordance with Special Condition No. 51.
 - (2) Records sufficient to demonstrate compliance with the Flared gas net heating value and actual exit velocity required in Special Condition No. 51. The values shall be recorded at least once every 15 minutes.
 - (3) Records of the time, date, and duration of any loss of pilot flame shall be recorded in accordance with Special Condition No. 51.B.
 - C. Heaters/Boilers (PSD)
 - (1) Records of average hourly NO_x and CO emissions in lb/MMBtu or ppm to demonstrate compliance with the emission limits in Attachment B.
 - (2) Records of fuel gas usage for the heater/boiler shall be recorded monthly and as required by Special Condition No. 10.
 - (3) Average hourly firing rates to demonstrate compliance with the limits in Attachment A.
 - D. Cogeneration Unit: (PSD)
 - (1) Records required by 40 CFR § 60.7, records of all testing performed under the initial determination of compliance, and NO_x lb/MMBtu limitation demonstrated on a 30-day rolling average corrected as specified in 40 CFR Part 60, Appendix A, Method 19. The 30-day rolling average will be based on the fuel usage rate and the high heat value of the fuel.
 - (2) The results of all fuel sampling conducted pursuant to Special Condition No. 8.
 - (3) Written records of the occurrence and duration of any malfunction(s) which may cause emissions in excess of the permitted allowables and the actions taken to correct the malfunction(s).

Total Petrochemicals & Refining USA, Inc.

Port Arthur Refinery

APPENDIX A

Initial Inventory of Covered Heaters and Boilers

Annual Update for Calendar Year 2016 - Submitted March 30, 2017

A1/A1/EN/110000755200

Unit	Source Type	Emission Point Number (EPN)	Description	Current NOx Limit (lb/MMBtu)	CEM Equipped and Operational	Heat Input Capacity, (MMBtu/hr)	Source for Heat Input Capacity
No. 1 Crude	Heater	01ACU1H101	ACU-1 Charge, H-101 ²	0.040	Y	145.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
No. 2 Crude	Heater	02ACU2H201	ACU-2 Charge, H-201 ²	0.030	Y	129.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
No. 1 Crude	Heater	01ACU1202A	ACU-1 Charge, H-202A	0.060	Y	187.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
No. 1 Crude	Heater	01ACU1202B	ACU-1 Charge, H-202B	0.060	Y	187.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Vacuum Distillation Unit 1	Heater	01VACTH301	VDU-1 Charge, H-301 ²	0.030	Y	105.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
Demex	Heater	10DEMEXH-2	DEMEX Asphalt, 3H-2	0.035	N	70.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Demex	Heater	10DEMEXH-4	DEMEX DMO Phase, 3H-4 ²	0.035	N	98.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Unibon	Heater	13UNIBH301	Unibon Charge, 13H-1	0.030	Y	100.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
NHT 1	Heater	17NHTHTRS	NHT 17H-101 ²	0.030	N	56.60	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
NHT 1	Heater	17NHTHTRS	NHT 17H-102 ²	0.030	N	69.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Reformer	Heater	17NHTHTRS	Reformer Charge 1 ^{1,2}	0.033	Y	127.16	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Reformer	Heater	17NHTHTRS	Reformer Charge 2 ^{1,2}	0.033	Y	144.12	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014

Port Arthur Refinery
APPENDIX A

Initial Inventory of Covered Heaters and Boilers
Annual Update for Calendar Year 2016 - Submitted March 30, 2017

A/A/EN/110000755200

Unit	Source Type	Emission Point Number (EPN)	Description	Current NOx Limit (lb/MMBtu)	CEM Equipped and Operational	Heat Input Capacity, (MMBtu/hr)	Source for Heat Input Capacity
Reformer	Heater	17NHTHTRS	Reformer Charge 3 ^{1,2}	0.033	Y	79.52	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
Reformer	Heater	17NHTHTRS	Reformer Charge 4 ^{1,2}	0.033	Y	56.21	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
BTX	Heater	04BTXHS-53	Xylene Trim Heater, 4H-53	0.060	N	65.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
BTX	Heater	04BTXHS-52	Toluene Trim Heater, 4H-52	0.060	N	63.00	Attachment A - Heater Maximum Firing Rate (Special Conditions - Permit Numbers 46396, PSDTX1073M1, and N044) December 8, 2014
DHT 1	Heater	51DHT1H-1	DHT Charge, 51H-1	0.040	N	46.44	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
DHT 2	Heater	52DHT2H-1	DHT-2 Charge, 52H-1	0.035	N	46.45	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
DHT 2	Heater	52DHT2H-2	DHT-2 Florida, 52H-2	0.035	N	52.63	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
Condensate Splitter	Heater	40CSPLITH-1	Condensate Splitter H-1	0.050	Y	230.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package) February 3 2012
Utility	Boiler	61BLRH300	Boiler H-300 ³	0.035	Y	249.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)
Utility	Boiler	61BLRH350	Boiler H-350 ³	0.035	Y	249.00	TCEQ Table 6 - Heaters and Boilers (Submitted with Permit Package)

¹ Heaters routed to common stack - CEMS on common stack.

² NOx Controls proposed on heaters for netting on NSR Permit (#N067) submitted on June 20, 2006, to the EPA/TCEQ. TOTAL may use 106 tons or less of offsets from NOx emissions from these heaters for the offsets required by NSR Permit application #N067 should a permit be issued under that application or under another application for the same project.

³ Boilers routed to common stack - CEMS on common stack.

No changes occurring during calendar year 2014.

NOx Controls were installed on the Unibon Charge Heater October 12, 2013.

Buddy Garcia, *Chairman*
 Larry R. Soward, *Commissioner*
 Bryan W. Shaw, Ph.D., *Commissioner*
 Glenn Shankle, *Executive Director*



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

January 30, 2008

MR GARY GUILHAS
 OPERATIONS MANAGER
 TOTAL PETROCHEMICALS USA INC
 PO BOX 849
 PORT ARTHUR TX 77641

Standard Permit Registration Number:	83832	Renewal Date: January 30, 2018
Location:	7600 32nd St	
City/County:	Port Arthur, Jefferson County	
Project Description/Unit:	Port Arthur Refinery	
Regulated Entity Number:	RN102457520	
Customer Reference Number:	CN600582399	
New or Existing Site:	Existing	
Affected Permit (if applicable):	18936 et al.	
Standard Permit Type:	Pollution Control Project	

Total Petrochemicals USA, Inc. has registered the emissions associated with the installation of boot sealing devices on several tanks at the Port Arthur Refinery, Port Arthur, Jefferson County. In response to a Consent Decree issued by EPA, pursuant to paragraph 91 of Consent Decree Reference Case No. 90-5-2-1-08283/3, under the standard permit listed above authorized by the Commissioners pursuant to Title 30 Texas Administrative Code § 116.602 (30 TAC § 116.602). Emissions are listed on the attached table. For rule information see www.tceq.state.tx.us/permitting/air/nav/standard.html. You are reminded that 30 TAC § 116.615 requires that any construction or change authorized by this standard permit should be consolidated into the affected facilities' permit(s) at the next amendment or renewal.

No planned MSS emissions have been represented or reviewed for this registration and none will be authorized by this standard permit.

The company is also reminded that these facilities may be subject to and must comply with other state and federal air quality requirements. If you have questions, please contact Mr. Emmanuel Ukandu at (713) 767-3699. This action is taken under authority delegated by the Executive Director of the TCEQ.

Sincerely,

Anne M. Ihman, P.E., Manager
 Rule Registrations Section
 Air Permits Division

cc: Air Section Manager, Region 10 - Beaumont

Project Number: 135762

Standard Permit Maximum Emission Rates Table
Permit Number 83832

The facilities and emissions included in this table have been represented and reviewed as the maximum emissions authorized by this standard permit registration.

Emission Point No.	Facility or Source Name	Air Contaminant*	Emission Rates	
				TPY
22TANK0452*	Tank	VOC	1.34	3.07
22TANK0453*	Tank	VOC	1.33	3.01
22TANK0454*	Tank	VOC	1.36	3.10
22TANK0455*	Tank	VOC	1.31	2.84
22TANK0476*	Tank	VOC	1.18	2.28
22TANK0477*	Tank	VOC	1.11	2.25
22TANK0479*	Tank	VOC	1.11	2.37
22TANK0480*	Tank	VOC	1.03	2.48
22TANK0481*	Tank	VOC	1.04	3.14
67TANK500A	Tank	VOC	0.10	0.31
67TANK500B	Tank	VOC	0.10	0.31
22TANK0502	Tank	VOC	0.80	2.67
22TANK0503	Tank	VOC	0.03	0.01
67TANK0504	Tank	VOC	0.02	0.03
67TANK0505	Tank	VOC	0.03	0.03
22TANK0506 (NA)	Tank	VOC	1.12	3.40
22TANK0525+	Tank	VOC	0.41	0.38
22TANK0542	Tank	VOC	1.62	3.94
22TANK0543+	Tank	VOC	0.15	0.38
22TANK0562	Tank	VOC	0.28	0.34

22TANK0563	Tank	VOC	1.03	3.21
22TANK0906 (NA)	Tank	VOC	0.86	1.89
22TANK0907 (NA)	Tank	VOC	0.66	1.32
22TANK0910+	Tank	VOC	0.41	0.38
22TANK0935	Tank	VOC	1.54	4.08
22TANK0938	Tank	VOC	1.00	3.38
38TANK1000	Tank	VOC	0.14	0.09
38TANK1001	Tank	VOC	0.03	0.13
20TANK2001	Tank	VOC	0.78	1.69
20TANK2002	Tank	VOC	0.78	1.69
46TANK4480	Tank	VOC	3.41	0.98
46TANK4481	Tank	VOC	4.01	4.82
46TANK4482	Tank	VOC	4.01	4.80
45TANK0474	Tank	VOC	0.02	0.06
* Annual VOC emission rate is included in the Crude Cap (EPN 22 CRUDECAP)				
+ Annual VOC is included in the 22JETCAP .				
NA= Authorized under PBRs with only tpy limits and no hourly limits.				

The maximum operating schedule represented for these facilities is:

hours/day	days/week	weeks/year	hours/year
24	7	52	8760

VOC- volatile organic compounds

**Fugitive emissions are an estimate only and should not be considered as a maximum allowable

Permit Number 46396, PSDTX1073M2, N044

Page 10

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
22TANK0522	VOC Storage Tank No. 0522	VOC	2.27	(8)
22TANK0524	VOC Storage Tank No. 0524	VOC	18.75	(8)
22TANK0536	VOC Storage Tank No. 0536	VOC	6.53	(8)
22TANK0537	VOC Storage Tank No. 0537	VOC	0.76	(8)
22TANK0538	VOC Storage Tank No. 0538	VOC	195.33	(8)
22TANK0545	VOC Storage Tank No. 0545	VOC	1.92	(8)
22TANK0558	VOC Storage Tank No. 0558	VOC	0.44	(8)
22TANK0559	VOC Storage Tank No. 0559	VOC	0.84	(8)
22TANK0560	VOC Storage Tank No. 0560	VOC	0.48	(8)
22TANK0561	VOC Storage Tank No. 0561	VOC	0.48	(8)
22TANK0586	VOC Storage Tank No. 0586	VOC	8.50	(8)
22TANK0587	VOC Storage Tank No. 0587	VOC	75.52	(8)
22TANK0589	VOC Storage Tank No. 0589	VOC	0.57	(8)
22TANK0902	VOC Storage Tank No. 0902	VOC	75.52	(8)
22TANK0917	VOC Storage Tank No. 0917	VOC	31.88	(8)
22TANK0918	VOC Storage Tank No. 0918	VOC	31.88	(8)
22TANK0924	VOC Storage Tank No. 0924	VOC	0.39	(8)
22TANK0925	VOC Storage Tank No. 0925	VOC	0.57	(8)
22TANK0933	VOC Storage Tank No. 0933	VOC	20.07	(8)
22TANK0934	VOC Storage Tank No. 0934	VOC	18.75	(8)
22TANK0948	VOC Storage Tank No. 0948	VOC	1.21	(8)
67TANK0636	Solids/Liquids Wastewater Tank No. 0636	VOC	34.33	(8)
67TK660CC	IGF Float Tank No. 0660	VOC	0.01	(8)
FXRTCAP	Fixed Roof Tank Cap	VOC	--	41.82
20TANK2001	Gasoline Storage Tank	VOC	0.79	(9)
20TANK2002	Gasoline Storage Tank	VOC	0.79	(9)
22TANK0452	VOC Storage Tank No. 0452	VOC	1.75	(9)
22TANK0453	VOC Storage Tank No. 0453	VOC	1.77	(9)
22TANK0454	VOC Storage Tank No. 0454	VOC	1.77	(9)
22TANK0455	VOC Storage Tank No. 0455	VOC	1.75	(9)

Permit Number 46396, PSDTX1073M2, N044

Page 11

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
22TANK0475	VOC Storage Tank No. 0475	VOC	13.19	(9)
22TANK0476	VOC Storage Tank No. 0476	VOC	1.94	(9)
22TANK0477	VOC Storage Tank No. 0477	VOC	1.66	(9)
22TANK0478	VOC Storage Tank No. 0478	VOC	11.36	(9)
22TANK0479	VOC Storage Tank No. 0479	VOC	1.80	(9)
22TANK0480	VOC Storage Tank No. 0480	VOC	1.28	(9)
22TANK0481	VOC Storage Tank No. 0481	VOC	1.26	(9)
22TANK0482	VOC Storage Tank No. 0482	VOC	8.89	(9)
22TANK0502	VOC Storage Tank No. 0502	VOC	0.80	(9)
22TANK0503	Water Draw Collection Tank No. 0503	VOC	0.29	(9)
22TANK0506	VOC Storage Tank No. 0506	VOC	0.89	(9)
22TANK0525	VOC Storage Tank No. 0525	VOC	1.61	(9)
22TANK0530	VOC Storage Tank No. 0530	VOC	1.53	(9)
22TANK0532	VOC Storage Tank No. 0532	VOC	4.30	(9)
22TANK0540	Water Draw Collection Tank No. 0540	VOC	0.09	(9)
22TANK0541	VOC Storage Tank No. 0541	VOC	3.10	(9)
22TANK0542	VOC Storage Tank No. 0542	VOC	3.17	(9)
22TANK0543	VOC Storage Tank No. 0543	VOC	0.68	(9)
22TANK0562	VOC Storage Tank No. 0562	VOC	0.55	(9)
22TANK0563	VOC Storage Tank No. 0563	VOC	1.38	(9)
22TANK0574	VOC Storage Tank No. 0574	VOC	1.07	(9)
22TANK0800	VOC Storage Tank No. 0800	VOC	3.84	(9)
22TANK0801	VOC Storage Tank No. 0801	VOC	3.84	(9)
22TANK0802	VOC Storage Tank No. 0802	VOC	3.84	(9)
22TANK0805	VOC Storage Tank No. 0805	VOC	4.26	(9)
22TANK0906	VOC Storage Tank No. 0906	VOC	1.01	(9)
22TANK0907	VOC Storage Tank No. 0907	VOC	0.98	(9)
22TANK0909	VOC Storage Tank No. 0909	VOC	0.67	(9)
22TANK0910	VOC Storage Tank No. 0910	VOC	1.43	(9)
22TANK0919	VOC Storage Tank No. 0919	VOC	1.00	(9)

Permit Number 46396, PSDTX1073M2, N044
Page 12

Emission Sources - Maximum Allowable Emission Rates

Emission Point No. (1)	Source Name (2)	Air Contaminant Name (3)	Emission Rates	
			lbs/hour	TPY (4)
22TANK0920	VOC Storage Tank No. 0920	VOC	0.68	(9)
22TANK0935	VOC Storage Tank No. 0935	VOC	2.37	(9)
22TANK0938	VOC Storage Tank No. 0938	VOC	1.38	(9)
22TANK0939	VOC Storage Tank No. 0939	VOC	1.39	(9)
37TANK1002	VOC Storage Tank No. 1002	VOC	0.19	(9)
38TANK1000	VOC Storage Tank No. 1000	VOC	0.14	(9)
		H ₂ S	0.01	0.05
		NH ₃	0.01	0.01
		HCN	0.01	0.01
38TANK1001	VOC Storage Tank No. 1001	VOC	0.03	(9)
		H ₂ S	0.02	0.04
		NH ₃	0.01	0.02
		HCN	0.01	0.01
45TANK0474	Dock Wastewater Tank No. 0474	VOC	0.72	(9)
67TANK500A	Storm Water Storage Tank No. 500A	VOC	2.84	(9)
67TANK500B	Storm Water Storage Tank No. 500B	VOC	2.84	(9)
67TANK500C	Storm Water Storage Tank No. 500C	VOC	4.26	(9)
67TANK0504	Recovered Oil Tank No. 0504	VOC	0.40	(9)
67TANK0505	NESHAP Wastewater Tank No. 0505	VOC	0.43	(9)
EFRTCAP	External Floating Roof Tank Cap	VOC	--	144.29
04TANK0941	VOC Storage Tank No. 0941	VOC	0.19	(10)
04TANK0946	VOC Storage Tank No. 0946	VOC	0.36	(10)
22TANK0517	VOC Storage Tank No. 0517	VOC	0.85	(10)
22TANK0526	VOC Storage Tank No. 0526	VOC	0.79	(10)
22TANK0531	VOC Storage Tank No. 0531	VOC	3.39	(10)
22TANK0572	VOC Storage Tank No. 0572	VOC	0.34	(10)
22TANK0588	VOC Storage Tank No. 0588	VOC	0.61	(10)
22TANK0591	VOC Storage Tank No. 0591	VOC	1.03	(10)