Permit Renewal & Amendment
Source Analysis & Technical Review

Company	**Total Petrochemicals & Refining USA Inc**	Permit Number	**46396 and PSD1073M3**
City	**Port Arthur**	Project Numbers	**332159**
County	**Jefferson**	Regulated Entity Number	**RN102457520**
Project Types	**Renewal and Amendment**	Customer Reference Number	**CN600582399**
Project Reviewer	**Ruth Alvírez**	Received Date	**August 9, 2021**
Site Name	**Total Petro Chemicals USA Port Arthur Refinery**		

Project Overview

Total Petrochemicals & Refining USA (Total) owns and operates the Port Arthur Refinery (PAR) located in Port Arthur, Jefferson County, Texas. The PAR is an integrated petroleum refinery with associated petrochemical operations. Crude oil is delivered to the refinery, then processed and refined into various petrochemical products such as gasoline, diesel, heating oil(s), and aromatics.

Total is seeking to renew the PAR permit and amend the permit for the following: incorporate by reference or consolidation various Permit by Rule and (PBR) and Standard Permit (SP) authorizations, void PBR/SP authorizations that were not executed, and remove equipment no longer in service.

In addition, Total is seeking a PSD amendment to update tank emission representations, change in stock commodities and throughput on various storage tanks, delete storage tanks no longer in service, rearrange external floating tanks, and rearrange the external roof category.

Emission Summary

Air Contaminant	Current Allowable Emission Rates (tpy)	PBR and Standard Permit Consolidation (tpy)	Proposed Allowable Emission Rates (tpy)	Change in Allowable Emission Rates (tpy)
NO_x	1,316.48	13.14	1,283.25	-33.23
CO	1,571.16	27.28	1,590.74	19.58
VOC	1,540.86	125.83	1,588.09	47.23
PM	382.78	--	381.31	-1.47
PM_{10}	364.41	--	368.63	4.22
$PM_{2.5}$	226.77	--	352.32	125.55
SO_2	860.37	--	860.39	0.02
H_2S	15.06	--	16.94	1.88
NH_3	16.07	--	16.04	-0.03
HCN	296.00	--	295.98	-0.02
HCl	0.06	0.19	0.25	0.19
Cl_2	0.01	0.03	0.04	0.03
S_2	0.17	--	0.17	0.00

Compliance History Evaluation - 30 TAC Chapter 60 Rules

A compliance history report was reviewed on:	**August 29, 2022**
Site rating & classification:	**26.37 / Satisfactory**
Company rating & classification:	**11.48 / Satisfactory**
Has the permit changed on the basis of the compliance history or rating?	**No**
Did the Regional Office have any comments? If so, explain.	**No**

Public Notice Information Requirement	**Date**	
	Renewal	**Amendment**
Legislator letters mailed	**December 16, 2020**	**NA**
Date 1st notice published	**September 18, 2021**	**September 18, 2021**
Publication Name: **Port Arthur News**		
Pollutants: **NO_x, CO, VOC, SO_2, PM/PM_{10}/$PM_{2.5}$, HAPs, H_2S,**		
Date 1st notice Alternate Language published	**September 19, 2021**	**September 19, 2021**
Publication Name (Alternate Language): **El Perico**		
1st public notice tearsheet(s) received	**October 05, 2021**	**October 05, 2021**
1st public notice affidavit(s) received	**October 05, 2021**	**October 05, 2021**
1st public notice certification of sign posting/application availability received	**November 09, 2021**	**November 09, 2021**
SB709 Notification mailed	**January 10, 2022** **January 11, 2024**	**January 10, 2022** **January 11, 2024**
Date 2nd notice published		
Publication Name:		
Pollutants:		
Date 2nd notice published (Alternate Language)		
Publication Name (Alternate Language):		
2nd public notice tearsheet(s) received		
2nd public notice affidavit(s) received		
2nd public notice certification of sign posting/application availability received		

Public Interest

Public Interest Information	
Number of comments received	**TBD**
Number of meeting requests received	**TBD**
Number of hearing requests received	**TBD**
Date meeting held	**NA**
Date response to comments filed with OCC	**TBD**
Date of SOAH hearing	**TBD**

Renewal Requirements

Requirement	
Date of permit expiration:	**February 3, 2022**
Date written notice of review was mailed:	**December 16, 2021**
Was there a condition of air pollution that had to be addressed during this project review?	**No**
Permit Renewal Fee: $ **9,989.00**	

Federal Rules Applicability

Requirement	
Subject to NSPS?	**Yes**
Subparts **A, Db, J, Ja, K, Ka, Kb, GG, UU, XX, GGG** & **QQQ**	
Subject to NESHAP?	**Yes**
Subparts **A, J, V, Y,** & **FF**	
Subject to NESHAP (MACT) for source categories?	**Yes**
Subparts **A, F, G, H Q, CC, UUU, & DDDDD**	

Nonattainment review applicability: The site located in Jefferson County, which is designated as attainment for all pollutants. Therefore, nonattainment new source review does not apply.

PSD review applicability: The site is an existing major source in regards to the PSD program. The following table provides the annual project emissions for each pollutant and whether this pollutant triggers PSD review.

Pollutant	Project Increase tpy	PSD Netting Trigger tpy	Netting Required (Y/N)	Net Emission Change tpy	PSD Major Mod Trigger tpy	PSD Review Triggered (Y/N)
NO_x	5.84	40	N	NA	40	N
CO	17.00	100	N	NA	100	N
VOC	77.24	40	Y	203.07	40	Y
PM	5.97	25	N	NA	25	N
PM_{10}	5.97	15	N	NA	15	N
$PM_{2.5}$	5.97	10	N	NA	10	N
SO_2	0.00	40	N	NA	40	N
H_2S	2.62	10	N	NA	10	N

As shown in the table above project emission increases for each pollutant are less than their respective significant threshold except for VOC, therefore, contemporaneous netting is required for this pollutant. The net contemporaneous VOC emission changes exceed its PSD significant threshold; therefore, PSD is triggered for this pollutant.

As an “PSD anyway” source, meaning PSD is triggered for a non-greenhouse gas pollutant, greenhouse gasses (GHGs) must be evaluated for PSD applicability. The modified emission sources for this project (storage tanks) do not generate any CO_2e emissions. Therefore, a PSD review is not triggered for GHGs.

Title V Applicability

Requirement

Title V applicability: The site is a Title V major source and operates under Operating Permit No. O-1267.

Periodic Monitoring (PM) applicability: Periodic monitoring is applicable because the site is subject to 30 TAC Chapter 122. The following methods of monitoring meet PM requirements:

Source	EPN	SC No(s).	PM Condition Summary
Uniborn Heater	13UNIBH301	93 K	CGA quarterly requirements and RATA/ RAA every three-year testing requirement.
Catalyst Transport	55FCCUHOP	18	Inspection in for leaks.
FCCU Regenerator	55RGNFLUGS	16 19	Flow rate monitoring requirements. Abatement requirements for PM control
Storage Tanks	Various	42	Requirements for closure devices Visual inspections to verify integrity Uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum
Marine Terminal Vapor Combustors Annual Cap	45DCKTOCAP	49	Temperature monitoring.
ARU-2 Lean Amine Tank	42TK301CC	Attachment T	Breakthrough monitoring
Fugitives	28VHPFUG	56	Pipe/Valve/Seals requirements, quarterly leak testing, repair schedules, recordkeeping
Fugitives	LAERCNAFUG LAERCNQFUG	58	Pipe/Valve/Seals requirements, weekly AVO inspections, quarterly leak testing, repair schedules, recordkeeping

Compliance Assurance Monitoring (CAM) applicability: CAM is applicable because the site is a major source subject to 30 TAC Chapter 122. The following equipment have a pre-control potential-to-emit above the major source thresholds for pollutants and use control device to achieve compliance with the emission limitations.

Source	EPN	SC Nos.	CAM Condition Summary
ACU-1 Charge Heater H-101	01ACU1H101	Attachment C	CEMs - NO_x, CO, and O_2
ACU-1 Charge Heater H-202A	01ACU1H201A	Attachment C	CEMs - NO_x, CO, and O_2
ACU-1 Charge Heater H-202B	01ACU1H202B	Attachment C	CEMs - NO_x, CO, and O_2
Vacuum Charge Heater H-301	01VACH301	Attachment C	CEMs - NO_x, CO, and O_2
ACU No. 2 Heater H-201	02ACU2H201	Attachment C	CEMs - NO_x, CO, and O_2
Unibon Heater H-301	13UNIBH301	Attachment C	CEMs - NO_x, CO, and O_2
Sulfur Recovery Tail Gas Thermal Oxidizer	15SRUINCIN	Attachment C	CEMs - CO, SO_2, and O_2
Reformer Charge Heater H-1-6	17NHTHTRS	Attachment C	CEMs - NO_x, CO, and O_2
SRU 4 Incinerator	25SRUINCIN	Attachment C	CEMs - NO_x, CO, SO_2, and O_2
Condensate Splitter Heater H-1	40CSPLTH-1	Attachment C	CEMs - NO_x, CO, SO_2, and O_2
DCU Heater No. 1	30CKRHTR1	Attachment C	CEMs - NO_x, CO, and O_2
DCU Heater No. 2	30CKRHTR2	Attachment C	CEMs - NO_x, CO, and O_2
SRU 5 Incinerator	36SRUINCIN	Attachment C	CEMs - NO_x, CO, SO_2, and O_2
FCCU Regenerator Stack	55RGNFLUGS	Attachment C	CEMs - NO_x, CO, SO_2, and O_2
Cogeneration - Turbine and Boiler Stack	60COGENSTK	Attachment C	CEMs - NO_x, CO, and O_2
61ST301BLR and 61ST351BLR (Common Stack)	61STACKBLR	Attachment C	CEMs - NO_x, CO, and O_2

Process Description

PAR manufactures transportation fuels: gasoline, diesel, jet fuel, propane, butane, and bunker oil. The refinery also makes asphalt and recovers benzene, toluene, and xylene from its fuel products.

The refinery is a high conversion facility. The process units at the site, described as follows, are: Process Waste Water Treating Complex, Cogen/ Steam Boilers, LPG Loading Rack, Truck Loading Rack, OM&S, Marine Docks and Vapor Recovery Unit, Pressure Swing Adsorption Unit, Coker Naphtha Hydrotreater Unit, Amine Regeneration Unit, Distillate Hydrotreater, Delayed Coker Unit, Condensate Splitter, Fluidized Catalytic Cracking Unit, Alkylation, DEMEX, UNIBON, Sulfur Recovery Units, Sour Water Strippers, Distillate Hydrotreater, Gas Rerun Unit, Distillate Hydrotreater, Gas Rerun Unit, and Toluene Disproportionation.

Project Scope

In addition to the renewal the following items are addressed in this application:

1. Make the following changes to the Main Tanks –

   A. Update the tanks using the current EPA Air Emission Factors /AP-42, Fifth Edition, Volume 1, Chapter 7, March 2020 equations and TCEQ guidance Short-term Emission Rates from Floating Roof Storage Tanks, APDG 6419v.2, February 2020.

   B. Update/revise throughputs and/or stock commodities in several storage tanks.

      Existing storage tanks undergoing stock commodity changes and/or throughput changes are considered modified with this project. The Changes to MAERT table identifies each tank and whether there was a throughput change, change in stock storage, or no change at all. The BACT section addresses the controls for each type of tank.

   C. Main storage tanks reorganized. The tanks store feedstocks and finished products.

      The three main categories were Fixed Roof Tanks (FRT), External Floating Roof Tanks (EFRT), and Internal Floating Roof Tanks (IFRT).

      Rearrange the External Floating Roof Tank Category (EPN:EFRTCAP) into two categories. The crude oil tanks which were a subcap of this category (EPN: EFRTSUBCAP) were removed from the EFRT Cap and put in a separate fourth category (EPN: CRUDETCAP).

      The tank subcaps (EPNs FXRTSUBCAP and EFRTSUBCAP) have been removed with those tanks being accounted for in the main annual caps (EPNs: FXRTCAP, CRUDETCAP, EFRTCAP, and IFRTCAP). There has been no physical modification to any tank or a change to the calculation methodology of the annual cap tpy. The annual caps are the summed annual emissions of all tanks within their respective category.

      H_2S, NH_3, and HCN – prior to this permitting action was on listed each individual tank. The individual annual emission rates were summed, just as the VOC is calculated, and has been added to the Tank Cap EPNs.

2. Permit by Rule (PBR) and standard permits incorporations.

Permit by Rule or Standard Permit	Description	Affected EPN(s)	Action (Reference / Consolidate / Void)
101772	TOTAL completed five projects qualifying for authorization under 30 TAC § 106.261. All projects involved minor changes in existing piping to optimize operations. Process emission increases for these projects are solely due to fugitive equipment leaks.	28VHPFUG	Consolidate/Void
101776	TOTAL completed thirteen projects qualifying for authorization under 30 TAC § 106.261. All projects involved minor changes in existing piping to optimize operations. Process emission increases for these projects are solely due to fugitive	28VHPFUG	Consolidate/Void

	equipment leaks.		
101797	TOTAL completed the following 4 minor projects in 2011. Emission increases are due solely to fugitive equipment leaks	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
108341	Increase the maximum annual marine loading rate of four materials at the refinery docks.	45DCKTOCAP	Consolidate/Void
109181	Authorize fugitive emissions associated with new equipment in 2012.	28VHPFUG LAERCNQFUG	Consolidate/Void
110165	Authorize the hourly and annual emission rates of the VOC emissions because of a recent stack test	55RGNFLUGS	Consolidate/Void
111965	Increase the maximum annual marine loading rate of xylene and to authorize “Distillate (Ship Loading)” at the refinery docks.	45DCKTOCAP 45DCKLDCAP	Consolidate/Void
118814	Authorize emission for several projects in 2013 involving minor ancillary changes to existing facilities. Emission increases are due solely to fugitive equipment leaks	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
121637	Authorize the addition of fugitive components to optimize the Butylene Disposition design.	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
131467	Authorize fugitive emissions associated with new equipment components for 107 projects (MOC’s) during calendar year 2014.	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
138865	Authorize fugitive emissions associated with a new Flare Gas Recovery (FGR) Compressor	28VHPFUG	Consolidate/Void
139741	Authorized emissions for 76 projects involving minor process equipment modifications. Emission increases for these projects are solely due to fugitive equipment leaks.	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
146063	Authorize emissions associated with 34 management of change projects.	28VHPFUG LAERCNQFUG	Consolidate/Void
149018	Authorize replacement of FCCU Regenerator Venturi Scrubber components.	55RGNFLUGS	Consolidate/Void
151211	Authorize fugitive emissions associated with new equipment components during calendar year 2017.	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
152274	Authorize the following: Increase in Marine Terminal Oxidizer annual emission Cap, increase in cooling tower flow rate to the refinery’s FPM Cooling Tower (EPN: 67FPMCLTWR), and account for fugitive emissions associated with new piping modifications that will occur during the turnaround for the GHT.	45DCKTOCAP 67FPMCLTWR LAERCNAFUG	Consolidate/Void
155100	Authorization for the use of two Vapor	20GASSORB	Consolidate/Void

	Lock Scrubbers to continue the removal of hydrocarbon emissions generated at the truck loading rack instead of the existing flare.		
157656	Authorize fugitive emissions associated with minor process equipment modification affecting fugitive components.	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
158780	Authorize the installation of the Low-NOx burners on the Uniborn Heater	13UNIBH301	Consolidate/Void
160728	Authorize emissions from various projects such as the replacement of piping components, valves, and pressure relief systems throughout the year.	28VHPFUG LAERCNAFUG LAERCNQFUG	Consolidate/Void
161471	Increase in Naphtha loading (1,200,000 barrels per year for Naphtha) across marine docks	45DOCKTO1 45DOCKTO2	Consolidate/Void
161828	Register hydrogen sulfide emissions from Tank 0522 and Tank 0537.	22TANK0522 22TANK0537	Consolidate/Void
162102	Register emissions from increasing the flow rates and weight fraction of coke to optimize production from the Continuous Catalytic Reformer (CCR).	17REFREGEN	Consolidate/Void
164527	Authorize emissions for the year 2020 annual notification for the Port Arthur Refinery.	28VHPFUG LAERCNAFUG	Consolidate/Void
118073	Temporary Boilers	TEMPBOIV1 TEMPBOIV2 TEMPBOFUGS	Reference
154201	Revise the maximum firing rate of the boiler from firing rate of 156.5 MMBtu/hr to 133 MMBtu/hrs.	PKGBOIL01 PKBGFUG	Reference
168522	Annual notification summary of fugitive projects	28VHPFUG LAERCNQFUG LAERCNAFUG	Reference
172132	Tank Replacement	FSLRECAP 67TK651FUG	Reference
172400	Annual notification summary of fugitive projects		

		LAERCNQFUG LAERCNAFUG	Reference
173485	South flare tip replacement	FLARECAP	Reference
173715	Tank change of service	22TANK0502 67TANKS0504	Reference

102135	This project was never constructed. Total is requesting this permit be voided as the project was never completed**.** This project has been submitted to authorize a new 13,258-gallon capacity Fixed Roof tank, Tank 308 (EPN: 22TANK0308) and associated fugitives**.**	N/A	VOID
107454	Total is requesting this permit be voided as the project was never completed**.** Annual emissions from Tank 563 were estimated using TGB Partnership's	N/A	VOID
132215	Total is requesting this permit be voided as the project was never completed**.** Replace Tank 542 (EPN: 22TANK0542) with Tank 542A	N/A	VOID
137702	Total is requesting this permit be voided as the project was never completed**.** Change of service on three EFT Tanks	N/A	VOID
144748	This project was never constructed. Total is requesting this permit be voided as the project was never completed**.** Construction of new tank to replace demolished tank	N/A	VOID

3. To resolve a Title V violation concerning missing representations, Total is including the representations for Catalyst Transport (EPN: 55FCCUHOP) with this renewal. The EPN was originally authorized in Permit No. 18936. Permit No. 18936 was consolidated into Permit No. 46396 (Project Nos. 1502534 and 150254) during the renewal in 2012. A review of the MAERTs for both permits revealed the same short-term and long-term emission rates for this EPN since 1988. Therefore, the representations submitted with this permitting action accurately reflect this EPN.

4. To resolve a Title V violation concerning missing representations, Total is including the representations for Storage Tank Nos. 808, 809, 810 Flare (EPN: 22BZNTKFLR). In addition, Total is correcting the CO emission rate. The source has not been modified.

5. Remove authorization for equipment no longer in service.

Source	EPN
Asphalt Vapor Recovery System	18ASPHTVRS
VOC Storage Tank No. 0301	18TANK0301
VOC Storage Tank No. 0305	18TANK0305
VOC Storage Tank No. 0306	18TANK0306

Tank 330	18TANK0330
VOC Storage Tank No. 0542	22TANK0542
VOC Storage Tank No. 0543	22TANK0543
VOC Storage Tank No. 0919	22TANK0919
VOC Storage Tank No. 0920	22TANK0920
VOC Storage Tank No. 0935	22TANK0935
Gasoline Loading Flare	20GASFLARE

6. Addition of new FIN: 14FGTFUGS to existing EPN: 28VHPFUG. The FIN was authorized at this existing EPN in PBRs 109181, 139741, and 146063, which are being consolidated and voided.

7. Update all particulate matter emission representations for PM/PM_{10}/$PM_{2.5.}$

Special Conditions

Changes to Special Conditions	
Special Condition	**Change**
10	Reorganized the condition by creating a table for readability and the removal of redundant language.
30C	Revise 2nd sentence referring to the operation level of the SRU during testing. The maximum sulfur production achievable during sampling.
30D	Change sampling requirement from “at least once every 12 months” to at “least once per calendar year”
39B	North Cooling Tower modification has been completed. North Cooling Tower pre-modification requirements removed.
51	Deleted and labelled as “reserved” as applicant requested not to renumber special conditions. Special Condition No. 87 contains the flare monitoring for all flares on the site. SC 51 is redundant.
69 A (1)	Removed reference to SC No. 74 it does not have anything to do with requirements.
FCCU Header	The title “FCCU Initial Compliance Testing” not appropriate for the section. Header changed to “SRU 4 and 5 Incinerator Monitoring”.
92	Deleted and labelled as “reserved” as applicant requested not to renumber special conditions. This requirement is covered in SC 42 C
93 K	Updated condition to include CO and O_2 to the pollutants that are monitored.
98 A (1) and (2)	Changed “gathered” to “maintained” for clarity.
98 G (6)	Removed the empty reference condition. This SC can stand alone as a recordkeeping requirement and does not require a reference to another condition.
98 O (4)	Corrected attachment reference from P to U.
98 Q (1)	Remove outdated requirement and aligned with Table 2 information provided with TCEQ Project No. 339036.
Attachment C	Updated to match Table in SC 93 K. Corrected Unibon heater source name
Attachment T	Applicant provided data to confirm that for the following EPNs: 54GHTCC , 67DCUOWSCC, 67SBOWSCC, 67WSHSLBCC, 75LABCC, that “working day” is acceptable and consistent with other units. Calendar day definition removed.

MAERT – due to the number of EPNs, those without changes are not included.

Changes to MAERT		
Source	**EPN**	**Change**
ACU No. 1 Heater H-101 ACU No. 1 Heater 202A ACU No. 2 Heater H-201	01ACU1H101 01ACU1202A 02ACU2H201	Specify emission limits for $PM_{2.5}$
VDU No. 1 Heater H-301	01VACTH301	Specify emission limits for $PM_{2.5}$.
BTX Heater H-51 BTX Heater H-52 BTX Heater H-53	04BTXH51 04BTXH-52 04BTXH-53	Specify emission limits for $PM_{2.5}$.
Demex Heater H-2	10DEMEXH-2	Specify emission limits for $PM_{2.5}$.
Unibon Heater H-301	13UNIBH301	SP – 158780 (consolidated) authorizes the installation of the Low-NOx burners on the Uniborn Heater which updated the NO_x and CO emission rates. Specify emission limits for $PM_{2.5}$
NHT Heaters	17NHTHTRS	Specify emission limits for $PM_{2.5}$.
Reformer Heaters	17REFHTRS	Specify emission limits for $PM_{2.5}$.
DCU Heater No. 1 DCU Heater No. 2	30CKRHTR1 30CKRHTR2	DCU Heater No. 1 and 2 MSS emission rates were listed under EPNs: 30CKRH1MSS and 30CKRH2MSS, respectively. Those hourly and annual emissions were incorporated into these EPNs
KNHT Heater	31KNHTHTR	Specify emission limits for $PM_{2.5}$.
Condensate Splitter Heater H-1	40CSPLTH-1	Specify emission limits for $PM_{2.5}$.
DHT-3 Heater	43DHT3CHTR	DHT-3 heater CO hourly MSS emission rate was listed under EPN: 43DHT3CMSS. The hourly emission rate was incorporated into this EPN. Specify emission limits for $PM_{2.5}$.
TDP Heater H-1	50TDPH-1	Specify emission limits for $PM_{2.5}$.
DHT No. 1 Heater H-1 DHT No. 1 Heater H-3	51DHT1H-1 51DHT1H-3	Increases in PM and PM_{10}. Specify emission limits for $PM_{2.5}$.
DHT No. 2 Heater H-1 DHT No. 2 Heater H-2	52DHT2H-1 52DHT2H-2	Increases in PM and PM_{10}. Specify emission limits for $PM_{2.5}$.
Boilers 61ST301BLR 61ST351BLR	61STACKBLR	Specify emission limits for $PM_{2.5}$.
Cogen Unit	60COGENSTK	Specify emission limits for $PM_{2.5}$.
FCCU Regenerator	55RGNFLUGS	Consolidated PBR No. 110165 and SP No. 149018.

Catalyst Transport	55FCCUHOP	Specify emission limits for $PM_{2.5}$.

PBR 162102 (consolidated) emissions from increasing the flow rates and weight fraction of coke to optimize production from the Continuous Catalytic Reformer (CCR).		
SRU No. 1 & 3 Tail Gas TO	15SRUINCIN	Specify emission limits for $PM_{2.5}$.
ACU No. 2 HD Cooling Tower Pre-modification	02HDCLGTWR	Deleted pre modification EPN – construction was completed so these pre-modification emission rates are no longer valid. Post modification EPN emission rates are still included on the MAERT.
North Cooling Tower Pre-modification	67NORTHCT	Deleted pre modification EPN – construction was completed so these pre-modification emission rates are no longer valid. Post modification EPN emission rates are still included on the MAERT.
Asphalt Vapor Recovery System	18ASPHTVRS	Deleted – no longer in service
All tanks	-	The tank emission rate limits were updated to follow the current AP-42 guidance for tank emission calculations that were updated in June 2020.
VOC Storage Tank No. 0301	18TANK0301	Deleted – no longer in service
VOC Storage Tank No. 0305	18TANK0305	Deleted – no longer in service
VOC Storage Tank No. 0306	18TANK0306	Deleted – no longer in service
Tank 330	18TANK0330	Deleted – no longer in service
VOC Storage Tank No. 2000	20TANK2000	No change in throughput
VOC Storage Tank No. 2003	20TANK2003	No change in throughput
VOC Storage Tank No. 0316	22TANK0316	No change in throughput
VOC Storage Tank No. 0317	22TANK0317	No change in throughput
VOC Storage Tank No. 0441	22TANK0441	No change in throughput
VOC Storage Tank No. 0516	22TANK0516	No change in throughput
VOC Storage Tank No. 0522	22TANK0522	Decrease in throughput H_2S – Consolidation of PBR 161828
VOC Storage Tank No. 0524	22TANK0524	Decrease in throughput
VOC Storage Tank No. 0536	22TANK0536	Change in product and no change in throughput
VOC Storage Tank No. 0537	22TANK0537	Decrease in throughput H_2S – Consolidation of PBR 161828
VOC Storage Tank No. 0538	22TANK0538	Change in product and no change in throughput
VOC Storage Tank No. 0545	22TANK0545	Change in product and no change in throughput
VOC Storage Tank No. 0558	22TANK0558	Decrease in throughput
VOC Storage Tank No. 0559	22TANK0559	Decrease in throughput
VOC Storage Tank No. 0560	22TANK0560	Decrease in throughput

VOC Storage Tank No. 0561	22TANK0561	Decrease in throughput
VOC Storage Tank No. 0586	22TANK0586	No change in throughput
VOC Storage Tank No. 0587	22TANK0587	No change in throughput
VOC Storage Tank No. 0589	22TANK0589	Decrease in throughput
VOC Storage Tank No. 0902	22TANK0902	No change in throughput
VOC Storage Tank No. 0917	22TANK0917	Change in Product and decrease in throughput
VOC Storage Tank No. 0918	22TANK0918	Change in Product and decrease in throughput
VOC Storage Tank No. 0924	22TANK0924	No change in throughput
VOC Storage Tank No. 0925	22TANK0925	Increase in throughput
VOC Storage Tank No. 0933	22TANK0933	Decrease in throughput
VOC Storage Tank No. 0934	22TANK0934	Change in Product and decrease in throughput
VOC Storage Tank No. 0948	22TANK0948	Change in product and no change in throughput
Solids/Liquids Wastewater Tank No. 0636	67TANK0636	No change in throughput
IGF Float Tank No. 0660	67TANK0660	No change in throughput
Fixed Roof Tank Sub Cap	FXRTSUBCAP	Deleted.
Fixed Roof Tank Cap	FXRTCAP	Increase due to throughput changes on individual tanks. H_2S – Consolidation of PBR 161828
VOC Storage Tank No. 0452	22TANK0452	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0453	22TANK0453	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0454	22TANK0454	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0455	22TANK0455	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank

		category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0477	22TANK0477	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0478	22TANK0478	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0480	22TANK0480	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0481	22TANK0481	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
VOC Storage Tank No. 0482	22TANK0482	Increase in throughput Removed from external floating roof tank category to Crude Oil Storage Tank category. No change to tank type, cap reevaluation only.
Crude Oil Cap	CRUDETCAP	New Category of External Floating Roof Tanks Increase due to throughput changes on individual tanks.
Gasoline Storage Tank	20TANK2001	Change in product and increase in throughput
Gasoline Storage Tank	20TANK2002	Change in product and increase in throughput
VOC Storage Tank No. 0475	22TANK0475	Change in product and decrease in throughput
VOC Storage Tank No. 0476	22TANK0476	Change in product and decrease in throughput
VOC Storage Tank No. 0479	22TANK0479	Change in product and increase in throughput
VOC Storage Tank No. 0502	22TANK0502	Change in product and increase in throughput

Water Draw Collection Tank No. 0503	22TANK0503	No change in throughput

VOC Storage Tank No. 0506

Change in product and no change in throughput		
VOC Storage Tank No. 0525	22TANK0525	Change in product and increase in throughput
VOC Storage Tank No. 0530	22TANK0530	Change in product and no change in throughput
VOC Storage Tank No. 0532	22TANK0532	Change in product and increase in throughput
Water Draw Collection Tank No. 0540	22TANK0540	No change in throughput
VOC Storage Tank No. 0541	22TANK0541	Change in product and decrease in throughput
VOC Storage Tank No. 0542	22TANK0542	Deleted
VOC Storage Tank No. 0543	22TANK0543	Deleted
VOC Storage Tank No. 0562	22TANK0562	Change in product and no change in throughput
VOC Storage Tank No. 0563	22TANK0563	Change in product and increase in throughput
VOC Storage Tank No. 0574	22TANK0574	No change in throughput
VOC Storage Tank No. 0800	22TANK0800	Increase in throughput
VOC Storage Tank No. 0801	22TANK0801	Increase in throughput
VOC Storage Tank No. 0802	22TANK0802	Increase in throughput
VOC Storage Tank No. 0805	22TANK0805	Change in product and increase in throughput
VOC Storage Tank No. 0906	22TANK0906	Change in product and increase in throughput
VOC Storage Tank No. 0907	22TANK0907	Change in product and increase in throughput
VOC Storage Tank No. 0909	22TANK0909	Change in product and no change in throughput
VOC Storage Tank No. 0910	22TANK0910	Change in product and increase in throughput
VOC Storage Tank No. 0919	22TANK0919	Deleted
VOC Storage Tank No. 0920	22TANK0920	Deleted
VOC Storage Tank No. 0935	22TANK0935	Deleted
VOC Storage Tank No. 0938	22TANK0938	Change in product and no change in throughput
VOC Storage Tank No. 0939	22TANK0939	Change in product and no change in throughput
VOC Storage Tank No. 1002	37TANK1002	No change in throughput
VOC Storage Tank No. 1000	38TANK1000	No change in throughput
VOC Storage Tank No. 1001	38TANK1001	No change in throughput
Dock Wastewater Tank No. 0474	45TANK0474	Change in product and no change in throughput

Storm Water Storage Tank No. 500A	67TANK500A	No change in throughput
Storm Water Storage Tank No. 500B	67TANK500B	No change in throughput
Storm Water Storage Tank No. 500C	67TANK500C	No change in throughput
Recovered Oil Tank No. 0504	67TANK0504	Change in product and increase in throughput
NESHAP Wastewater Tank No. 0505	67TANK0505	No change in throughput
External Floating Roof Tank Sub Cap	EFRTSUBCAP	Deleted
External Floating Roof Tank Cap	EFRTCAP	Increase due to throughput changes on individual tanks.
VOC Storage Tank No. 0941	04TANK0941	Change in product and no change in throughput
VOC Storage Tank No. 0946	04TANK0946	No change in throughput
VOC Storage Tank No. 0517	22TANK0517	Change in product and no change in throughput
VOC Storage Tank No. 0526	22TANK0526	Change in product and no change in throughput
VOC Storage Tank No. 0531	22TANK0531	Change in product and no change in throughput
VOC Storage Tank No. 0572	22TANK0572	No change in throughput
VOC Storage Tank No. 0588	22TANK0588	No change in throughput
VOC Storage Tank No. 0591	22TANK0591	Change in product and no change in throughput
VOC Storage Tank No. 0597	22TANK0597	No change in throughput
VOC Storage Tank No. 0598	22TANK0598	No change in throughput
VOC Storage Tank No. 0599	22TANK0599	No change in throughput
VOC Storage Tank No. 0650	22TANK0650	No change in throughput
VOC Storage Tank No. 0651	22TANK0651	No change in throughput
VOC Storage Tank No. 0807	22TANK0807	No change in throughput
VOC Storage Tank No. 0811	22TANK0811	No change in throughput
VOC Storage Tank No. 0812	22TANK0812	No change in throughput
VOC Storage Tank No. 0813	22TANK0813	No change in throughput
VOC Storage Tank No. 0814	22TANK0814	Change in product and no change in throughput
VOC Storage Tank No. 0815	22TANK0815	Change in product and no change in throughput
VOC Storage Tank No. 0913	22TANK0913	Change in product and no change in throughput
VOC Storage Tank No. 0921	22TANK0921	Change in product and no change in throughput
VOC Storage Tank No. 0922	22TANK0922	Change in product and no change in throughput
VOC Storage Tank No. 0940	22TANK0940	Change in product and no change in

		throughput
Recovered Oil Tank No. 0595	67TANK0595	No change in throughput
Recovered Oil Tank No. 0596	67TANK0596	No change in throughput
NESHAP Wastewater Tank No. 0905	67TANK0905	No change in throughput
Internal Floating Roof Tank Cap	IFRTCAP	Increase due to throughput changes on individual tanks.
Spent Sulfuric Acid Tank No. 668	08TANK0668	Added annual tank emissions.
Spent Sulfuric Acid Tank No. 923	08TANK0923	Added annual tank emissions.
Spent Sulfuric Acid Tank Cap	08TANK0668 and 08TANK0923	Tanks were originally titled Tank EPN . This project will separate individual tanks into separate EPNs Individual tanks given separate annual emission rates. Individual Tank EPNs included on MAERT.
Storage Tank Nos. 808, 809, 810 Flare	22BZNTKFLR	CO hourly/annual emission change
Gasoline Loading Flare	20GASFLARE	Deleted – no longer in service
Marine Terminal Vapor Combustor 1	45DOCKTO1	Consolidation of PBR No. 161471 to increase the hourly emission rates for NO_x and CO
Marine Terminal Vapor Combustor 2	45DOCKTO2	Consolidation of PBR No. 161471 to increase the hourly emission rates for NO_x and CO
Marine Terminal Combustor Cap	45DCKTOCAP	Consolidation of PBR No. 108341, 111965, and 152274 to increase in annual Cap
Condensate Splitter Oily Water Sump Carbon Canisters	40CSOWSCC	Changed source name
ARU-2 Lean Amine Tank (TK-301)	42TK301CC	Increased VOC and added H_2S
LAER CNQ LDAR Fug	LAERCNQFUG	Consolidation of various PBRs - see list Section 2 A
LAER CNA LDAR Fug	LAERCNAFUG	Consolidation of various PBRs - see list Section 2 A
28VHP LDAR Fug	28VHPFUG	Consolidation of various PBRs - see list Section 2 A
DCU Heater No. 1 MSS	30CKRH1MSS	Relocated to normal operations EPN: 30CKRHTR1
DCU Heater No. 2 MSS	30CKRH2MSS	Relocated to normal operations EPN: 30CKRHTR2
DHT-3 Heater MSS	43DHT3CMSS	Relocated to normal operations EPN: 43DHT3CHTR

MSS Atmospheric Bubble

Specify emission limits for PM_{10} and $PM_{2.5}$.		
SRU MSS	MSS_INCIN	Specify emission limits for PM_{10} and $PM_{2.5}$.
Truck Loading Rack	20GASSORB	Consolidate PBR 155100 to replace as control EPN: 20GASFLARE

Best Available Control Technology (BACT) – Tier I

Heater/Boilers			
Source	**EPN**		**BACT**
Heaters	01ACU1H101	01ACU1202A	PM – Good combustion practices, firing natural gas, and firing fuel gas meeting the H_2S requirements 40 CFR Part 60 Subparts J and Ja.
	01ACU1202B	01VACTH301	
	02ACU2H201	04BTXH-51	
	04BTXH-53	06VDU2CHTR	
	10DEMEXH-2	10DEMEXH-4	
	17NTHTRS	17REFHTRS	
	30CKRHTR2	31KNHTHTR	
	40CSPLTH-1	43DHT3CHTR	
	43DHT3CHTR	50TDPH-1	
	51DHT1H1-1	51DHT1H-3	
	52DHT2H-1	52DHT2H-2	
Unibon Heater H-301	13UNIBH301		Heater is less than 300 MMBtu/hr. NOx – 0.03 lb/MMBtu CO – 0.04 lb/MMBtu In lieu of a CEMs, a RATA/RAA shall be conducted every three years and a CGA conducted each calendar quarter during which a RAA/RATA is not performed. This represents BACT.
Boilers	61STACKBLR		PM – Good combustion practices, firing natural gas, and firing fuel gas meeting the H_2S requirements 40 CFR Part 60 Subparts J and Ja.

COGEN, FCCU, CCR, Sulfur Blocks		
Source	**EPN**	**BACT**
Turbine: Combined Cycle, Natural Gas	60COGENSTK	PM – Firing natural gas and good combustion practices.
FCCU Regenerator	55RGNFLUGS	VOC - emissions in the flue gas maintained at < 10 ppm.
Catalyst Regeneration	17REFREGEN	All pollutants - Meets monitoring requirements of 40 CFR 63, Subpart UUU.
SRU No. 1 & 3 Tail Gas Thermal Oxidizer	15SRUINCIN	PM - Good combustion practices, firing natural gas, and firing fuel gas meeting the H2S

		requirements 40 CFR Part 60 Subparts J and Ja.
Catalyst Transport	55FCCUHOP	The emission reduction techniques for PM_{10} and $PM_{2.5}$ will follow the technique for PM.

Fixed Roof Storage Tanks			
Source	**EPN**		**BACT**
Fixed roof with capacity < 25,000 gal or TVP < 0.50 psia	20TANK2000	20TANK2003	VOC - A control technology review was conducted that includes a BACT analysis for criteria pollutants. The following controls required by the permit satisfies BACT emissions of VOC, based on a review of recently issued permits from Texas and other states, and consideration of RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum. H_2S – no standard for the storing of product containing H_2S and only one results was found in the RBLC and H_2S was not discussed.
	22TANK0316	22TANK0317	
	22TANK0441	22TANK0516	
	22TANK0522	22TANK0524	
	22TANK0536	22TANK0537	
	22TANK0538	22TANK0545	
	22TANK0558	22TANK0559	
	22TANK0560	22TANK0561	
	22TANK0586	22TANK0587	
	22TANK0589	22TANK0902	
	22TANK0917	22TANK0918	
	22TANK0924	22TANK0925	
	22TANK0933	22TANK0934	
	22TANK0948	67TANK0636	
	67TK660CC	FXRTCAP	

Crude Oil Storage Tanks		
Source	**EPN**	**BACT**
Floating roof with TVP <11.0 psia	22TANK0452 22TANK0453 22TANK0454 22TANK0455 22TANK0477 22TANK0478 22TANK0480 22TANK0481 22TANK0482 CRUDECAP	VOC - A control technology review was conducted that includes a BACT analysis for criteria pollutants. The following controls required by the permit satisfies BACT emissions of VOC, based on a review of recently issued permits from Texas and other states, and consideration of RBLC data provided by the applicant. External floating roof: Uninsulated exterior surfaces exposed to the sun shall be white or aluminum. Primary seal mechanical Secondary seal rim mounted. H_2S – no standard for the storing of product containing H_2S and only one results was found in the RBLC and H_2S was not discussed

External Floating Roof Tanks Storage Tanks			
Source	**EPN**		**BACT**
Floating roof with TVP <11.0 psia	20TANK2001	20TANK2002	VOC - A control technology review was conducted that includes a BACT analysis for criteria pollutants. The following controls required by the permit satisfies BACT emissions of VOC, based on a review of recently issued permits from Texas and other states, and consideration of RBLC data provided by the applicant. Uninsulated exterior surfaces exposed to the sun shall be white or aluminum. Slotted guide pole fittings must have gasketed cover and at least two of the following (specify selection): wiper and sleeve. Primary seal mechanical Secondary seal rim mounted. H_2S – no standard for the storing of product containing H_2S and only one results was found in the RBLC and H_2S was not discussed
	22TANK0475	22TANK0476	
	22TANK0479	22TANK0502	
	22TANK0503	22TANK0506	
	22TANK0525	22TANK0530	
	22TANK0532	22TANK0540	
	22TANK0541	22TANK0542	
	22TANK0543	22TANK0562	
	22TANK0563	22TANK0574	
	22TANK0800	22TANK0801	
	22TANK0802	22TANK0805	
	22TANK0906	22TANK0907	
	22TANK0909	22TANK0910	
	22TANK0919	22TANK0920	
	22TANK0935	22TANK0938	
	22TANK0939	37TANK1002	
	38TANK1000	38TANK1001	
	45TANK0474	67TANK500A	
	67TANK500B	67TANK500C	
	67TANK0504	22TANK0960	
	EFRTCAP		

Internal Floating Roof			
Source	**EPN**		**BACT**
Floating roof with TVP <11.0 psia	04TANK0941	04TANK0946	VOC - A control technology review was conducted that includes a Best Available Control Technology (BACT) analysis for criteria pollutants. The following controls required by the permit satisfies BACT emissions of VOC, based on a review of recently issued permits from Texas and other states, and consideration of RACT/BACT/LAER Clearinghouse (RBLC) data provided by the applicant. Internal floating roof: Uninsulated exterior surfaces exposed to the sun shall be white or aluminum. Drain dry design (new tanks only). Primary seal mechanical. Secondary seal rim mounted. H_2S – no standard for the storing of product containing H_2S and only one results was found in the RBLC and H_2S was not discussed
	22TANK0517	22TANK0526	
	22TANK0531	22TANK0572	
	22TANK0588	22TANK0591	
	22TANK0597	22TANK0598	
	22TANK0599	22TANK0650	
	22TANK0651	22TANK0807	
	22TANK0811	22TANK0812	
	22TANK0813	22TANK0814	
	22TANK0815	22TANK0913	
	22TANK0921	22TANK0922	
	22TANK0940	67TANK0595	
	67TANK0596	67TANK0905	
	67TANK0927	IFRTCAP	

Source	EPNs	BACT
Fugitives	28VHPFUG	BACT determinations were leak

	LAERCNAFUG LAERCNQFUG	detection and repair programs 40 CFR Part 60 rules that this facility is subject to or the TCEQ 28VHP and LAER programs. The proposed BACT for fugitives meets the TCEQ Tier I guidelines.

Permits Incorporation – see Project Section Number 2 Permit by Rule (PBR) and standard permits incorporations above.

Impacts Evaluation

Was modeling conducted? **Y**es Type of Modeling: **AERMOD**

Is the site within 3,000 feet of any school? **Yes**

The air quality analysis (AQA) is acceptable for all review types and pollutants. The results are summarized below.

De Minimis Analysis

A De Minimis analysis was initially conducted to determine if a full impacts analysis would be required. The De Minimis analysis modeling results for 8-hr ozone indicate that the project is below the respective de minimis concentration and no further analysis is required.

The ozone De Minimis level is the EPA recommended De Minimis level. The use of the EPA recommended De Minimis level is sufficient to conclude that a proposed source will not cause or contribute to a violation of the ozone NAAQS based on the analyses documented in EPA guidance and policy memoranda. www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html.

Pollutant	Averaging Time	GLC_{MAX} ppb	De Minimis ppb
O_3	8-hr	0.11	1

The applicant performed an O_3 analysis as part of the PSD AQA. The applicant evaluated project emissions of O_3 precursor emissions (NO_x and VOC). For the project NOx and VOC emissions, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's Guideline on Air Quality Models (GAQM). Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as Modeled Emission Rates for Precursors (MERPs). The basic idea behind the MERPs is to use technically credible air quality modeling to relate precursor emissions and peak secondary pollutants impacts from a source. Using data associated with the worst-case hypothetical source, the applicant estimated an 8-hr O_3 concentration of 0.11 ppb. When the estimates of ozone concentrations from the project emissions are added together, the results are less than the De Minimis level.

Air Quality Monitoring

Since the project has a net emission increase of 100 tons per year (tpy) or more of volatile organic compounds or nitrogen oxides, the applicant evaluated ambient O_3 monitoring data to satisfy requirements in 40 CFR 52.21 (i)(5)(i)(f).

A background concentration for O_3 was obtained from the EPA AIRS monitor 482450102 located at Jefferson County Airport, Port Arthur, Jefferson County. A three-year average (2019-2021) of the annual fourth highest daily maximum 8-hr concentrations was used in the analysis (67 ppb). The use of this monitor for a background concentration of ozone is reasonable based on proximity of the monitor to the project site (approximately 10 kilometers (km) to the southwest). In addition, the applicant selected the monitor with the highest ozone concentration in the county.

National Ambient Air Quality Standards (NAAQS) Analysis

The De Minimis analysis modeling results for 8-hr O_3 do not exceed the respective de minimis concentration; therefore, a full impacts analysis is not required.

Increment Analysis

PSD increments do not exist for O_3; therefore, no analysis is required.

Additional Impacts Analysis

The applicant performed an Additional Impacts Analysis as part of the PSD AQA. The applicant conducted a growth analysis and determined that population will not significantly increase as a result of the proposed project. The applicant conducted a soils and vegetation analysis and determined that all evaluated criteria pollutant concentrations are below their respective secondary NAAQS. The applicant meets the Class II visibility analysis requirement by complying with the opacity requirements of 30 TAC Chapter 111. The Additional Impacts Analyses are reasonable and possible adverse impacts from this project are not expected.

The ADMT evaluated predicted concentrations from the proposed project to determine if emissions could adversely affect a Class I area. The nearest Class I area, Breton National Wildlife Refuge, is located approximately 487 km from the proposed site.

The predicted concentrations of PM_{10}, $PM_{2.5}$, NO_2, and SO_2 for all averaging times, are all less than de minimis levels at a distance of 700 m from the center of proposed sources in the direction the Breton National Wildlife Refuge Class I area. The Breton National Wildlife Refuge Class I area is an additional 486 km from the location where the predicted concentrations of PM_{10}, $PM_{2.5}$, NO_2, and SO_2 for all averaging times are less than de minimis. Therefore, emissions from the proposed project are not expected to adversely affect the Breton National Wildlife Refuge Class I area.

Minor Source NSR and Air Toxics Review

Project-related Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m³)	De Minimis (µg/m³)
SO_2	1-hr	0.06	16.34

Site-wide Modeling Results for State Property Line

Pollutant	Averaging Time	GLCmax (µg/m³)	Standard (µg/m³)
H_2S	1-hr	68	108 (If property is residential, recreational, business, or commercial)
H_2S	1-hr	68	162 (If property is not residential, recreational, business, or commercial)

Modeling Results for Minor NSR De Minimis

Pollutant	Averaging Time	GLCmax (µg/m³)	De Minimis (µg/m³)
SO_2	1-hr	0.06	7.8
SO_2	3-hr	0.05	25
PM_{10}	24-hr	0.9	5
$PM_{2.5}$	24-hr	0.9	1.2
$PM_{2.5}$	Annual	0.1	0.2
NO_2	1-hr	1	7.5
NO_2	Annual	0.1	1
CO	1-hr	7	2000
CO	8-hr	3	500

The GLCmax are the maximum predicted concentrations associated with one year of meteorological data.
The primary NAAQS for 24-hr and annual SO_2 have been revoked for Jefferson County and are not reported above.

The justification for selecting the EPA's interim 1-hr NO_2 and 1-hr SO_2 De Minimis levels was based on the assumptions underlying EPA's development of the 1-hr NO_2 and 1-hr SO_2 De Minimis levels. As explained in EPA guidance memoranda www.epa.gov/sites/production/files/2015-07/documents/appwso2.pdf and www.tceq.texas.gov/assets/public/permitting/air/memos/guidance_1hr_no2naaqs.pdf, the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 and 1-hr SO_2 NAAQS.

The $PM_{2.5}$ De Minimis levels are the EPA recommended De Minimis levels. The use of the EPA recommended De Minimis levels is sufficient to conclude that a proposed source will not cause or contribute to a violation of a $PM_{2.5}$ NAAQS based on the analyses documented in EPA guidance and policy memoranda. www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

To evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's GAQM. Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs. Using data associated with the worst-case hypothetical source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.007 µg/m³ and 0.0003 µg/m³, respectively.
When these estimates are added to the GLCmax listed in the table above, the results are less than the De Minimis levels.

Particulate Matter Distribution Modeling Results

The GLCmax are the maximum predicted concentrations associated with one year of meteorological data.

An evaluation of speciated emissions for $PM_{2.5}$ and PM_{10} was conducted for EPNs: 101ACU1H101, 01ACU1202A, 02ACU2H201, 04BTXH-51 – 04BTXH-53, 10DEMEXH-2, 13UNIBH301, 17NHTHTRS, 17REFHTRS, 30CKRHTR2, 31KNHTHTR, 40CSPLTH-1, 43DHT3CHTR, 50TDPH-1, 52DHT2H-1, 61STACKBLR, 60COGENSTK, 55FCCUHOP, 15SRUINCIN, 10GRUHTRB1, 16ISOMHTR, 30CKRH1MSS, 30CKRH2MSS, MSS_ATM and MSS_INCIN. Note EPNs 10GRUHTRB1 and 16ISOMHTR are not authorized by this permit. Including their emissions in the analysis does not change overall conclusions.

The applicant evaluated speciated emissions for 24-hr and annual $PM_{2.5}$ by ratioing monitoring data based on historical operating data from the sources under review. The monitoring data was obtained from EPA AIRS monitor 482450021 located at 2200 Jefferson Dr., Port Arthur, Jefferson County. The use of this monitor is reasonable based on the proximity of the monitor to the project site (located approximately 3.8 kilometers southwest of the project site). It is also the closest $PM_{2.5}$ monitor to the project site. To ensure the monitor sufficiently captured the emissions under review, days from the most recent complete three years of monitoring data (2020-2022) were identified when the monitor was downwind of the project site. The applicant based this on meteorological conditions collected at the monitor location. A 28-day dataset was defined. 24-hr monitored concentrations were calculated for each day and an annual design value was calculated based on the 28-day dataset (6.15 µg/m³).

For the 24-hr $PM_{2.5}$ analysis, operating data from the sources under review were used to scale up the 24-hr monitored concentration each day to represent routine operations at maximum capacity. If a source was not operating on a day within the dataset, it was modeled at its maximum allowable emission rate and summed with the scaled monitor value. The day with the largest calculated impact (26.8 µg/m³) is less than the 24-hr $PM_{2.5}$ NAAQS (35 µg/m³). Note the ADMT was unable to verify multiple days of monitoring data used by the applicant. The ADMT substituted the analysis with monitoring data following the 28-day dataset and determined overall conclusions will not change.

For the annual $PM_{2.5}$ analysis, the applicant identified an annual average operating ratio for the sources under review. For the sources that operated above the annual average operating ratio, the operating ratios were averaged to find an overall representation of operations throughout the annual period. The annual $PM_{2.5}$ monitoring concentration was scaled up based on the annual average operating ratio to represent routine operations at maximum capacity. The sources that operated less than the annual average ratio were modeled at their maximum allowable emission rate and summed with the scaled monitor concentration (10.8 µg/m³), which is less than the annual $PM_{2.5}$ NAAQS (12 µg/m³). Note the ADMT was unable to verify the annual $PM_{2.5}$ monitoring concentration. The ADMT reviewed the annual monitoring data and determined overall conclusions will not change.

The applicant evaluated speciated emissions for 24-hr PM_{10} by conducting a SCREEN3 modeling demonstration. Note all PM_{10} emissions that required speciation are based on MSS activities.

Pollutant	Averaging Time	GLCmax (µg/m³)	De Minimis (µg/m³)
PM_{10}	24-h4	1.62	5

To identify the 24-hr PM_{10} GLCmax, the applicant modeled all sources under review at their maximum allowable emission rates. The applicant derived the 24-hr maximum predicted concentration by multiplying the 1-hr maximum predicted concentrations by 0.4 and summing the impacts from each source independent of time and space. According to the applicant, the likelihood of these MSS sources operating at the same time is extremely low. Additionally, the emissions comprising source ID MSS_ATM represent a combination of inherently low emitting activities that would not be conducted simultaneously, and many of the activities included in the inherently low emitting activities group occur for less than the 24-hour averaging period. The ADMT was unable to verify the applicant's approach to not consider emissions from MSS_ATM in the determination of a worst-case scenario. When considering the emissions from source ID MSS_ATM, the project level impact is above the De Minimis level. The ADMT reviewed the 24-hr PM_{10} background monitored concentration from 2020-2022 from EPA AIRS monitor 482450628 located at 6956 James Gamble Dr., Port Arthur, Jefferson County (101 µg/m³). When considering the 24-hr PM_{10} background concentration, all impacts from the MSS sources under review (26.5 µg/m^3), and the 24-hr PM_{10} impacts from the proposed project (0.9 µg/m^3), the impact is less than the 24-hr PM_{10} NAAQS (150 µg/m^3). The ADMT determined the overall conclusions of the analysis will not change.

The primary NAAQS for 24-hr and annual SO_2 have been revoked for Jefferson County and are not reported above.

The justification for selecting the EPA's interim 1-hr NO_2 and 1-hr SO_2 De Minimis levels was based on the assumptions underlying EPA's development of the 1-hr NO_2 and 1-hr SO_2 De Minimis levels. As explained in EPA guidance memoranda, (www.epa.gov/sites/production /files/2015/documents/appwso2.pdf) the EPA believes it is reasonable as an interim approach to use a De Minimis level that represents 4% of the 1-hr NO_2 and 1-hr SO_2 NAAQS.

The $PM_{2.5}$ De Minimis levels are the EPA recommended De Minimis levels. The use of the EPA recommended De Minimis levels is sufficient to conclude that a proposed source will not cause or contribute to a violation of a $PM_{2.5}$ NAAQS based on the analyses documented in EPA guidance and policy memoranda[1].

To evaluate secondary $PM_{2.5}$ impacts, the applicant provided an analysis based on a Tier 1 demonstration approach consistent with the EPA's GAQM. Specifically, the applicant used a Tier 1 demonstration tool developed by the EPA referred to as MERPs. Using data associated with the worst-case hypothetical source, the applicant estimated 24-hr and annual secondary $PM_{2.5}$ concentrations of 0.007 µg/m^3 and 0.0003 µg/m^3, respectively. When these estimates are added to the GLCmax listed in the table above, the results are less than the De Minimis levels.

[1] www.tceq.texas.gov/permitting/air/modeling/epa-mod-guidance.html

Health EffectsMinor NSR Project (Increases Only) Modeling Results for Health Effects				
Pollutant& CAS#	**Averaging Time**	**GLCmax µg/m³**	**ESL**	**Modeling & Effects Review Applicability (MERA) Step in which Pollutant Screened Out**
petroleum distillates 8002-05-9	1-hr	104.49	3500	Step 3 – GLCmax < 10% ESL
carbon black oil 64742-90-1	1-hr	50.78	1000	Step 3 – GLCmax < 10% ESL
diesel fuel 68334-30-5	1-hr	80.57	1000	Step 3 – GLCmax < 10% ESL
fuel oil No. 2 68476-30-2	1-hr	49.29	1000	Step 3 – GLCmax < 10% ESL
straight-run gas oils (petroleum) 64741-43-1	1-hr	60.80	3500	Step 3 – GLCmax < 10% ESL
Gasoline 8006-61-9	1-hr	269.34	3500	Step 3 – GLCmax < 10% ESL
residues (petroleum) vacuum 64741-56-6	1-hr	53.39	1000	Step 3 – GLCmax < 10% ESL
aromatic hydrocarbons, C9-C11, mononuclear 70693-06-0	1-hr	49.29	1250	Step 3 – GLCmax < 10% ESL
distillates (petroleum), light catalytic cracked 64741-59-9	1-hr	92.51	3500	Step 3 – GLCmax < 10% ESL
N-methyldiethanolamine 105-59-9	1-hr	6.69	96	Step 3 – GLCmax < 10% ESL
heavy vacuum gas oils (petroleum) 64741-57-7	1-hr	49.29	3500	Step 3 – GLCmax < 10% ESL
crude oil, < 1% benzene	1-hr	317.99	3500	Step 3 – GLCmax < 10% ESL
residues (petroleum), catalytic reformer fractionator 64741-67-9	1-hr	60.88	1000	Step 3 – GLCmax < 10% ESL
Kerosene 8008-20-6	1-hr	84.10	1000	Step 3 – GLCmax < 10% ESL
naphtha, coal tar, desulfurized or sweet 8030-30-6	1-hr	92.96	4000	Step 3 – GLCmax < 10% ESL
raffinates (petroleum), sorption process 64741-85-1	1-hr	107.72	3500	Step 3 – GLCmax < 10% ESL
naphtha, petroleum, hydrotreated, heavy 64742-48-9	1-hr	83.38	3000	Step 3 – GLCmax < 10% ESL
naphtha, petroleum,				

heavy alkylate	1-hr	50.78	3000	Step 3 – GLCmax < 10% ESL

natural gas condensates, petroleum 64741-47-5	1-hr	49.29	3500	Step 3 – GLCmax < 10% ESL
pyrolysis fuel oil (< 25% benzene) 69013-21-4	1-hr	22.40	250	Step 3 – GLCmax < 10% ESL
Toluene 108-88-3	1-hr	88.61	4500	Step 3 – GLCmax < 10% ESL
Xylene 1330-20-7	1-hr	55.95	2200	Step 3 – GLCmax < 10% ESL
	Annual	0.25	180	
blended reformate (light reformate contains 8-12% benzene)	1-hr	51.65	1250	Step 3 – GLCmax < 10% ESL
pyrolysis gasoline (< 70% benzene) 68921-67-5	1-hr	22.40	240	Step 3 – GLCmax < 10% ESL
	Annual	0.46	6.4	
naphtha [petroleum], hydrotreated light 64742-49-0	1-hr	102.87	3500	Step 3 – GLCmax < 10% ESL
aromatic distillate, heavy 67891-79-6	1-hr	49.29	2450	Step 3 – GLCmax < 10% ESL
Benzene 71-43-2	1-hr	9.19	170	Step 3 – GLCmax < 10% ESL
	Annual	0.28	4.5	
1,3-butadiene 106-99-0	1-hr	0.03	510	Step 3 – GLCmax < 10% ESL
n-butane 106-97-8	1-hr	71.72	66000	Step 3 – GLCmax < 10% ESL
1-butene 106-98-9	1-hr	2.38	19000	Step 3 – GLCmax < 10% ESL
	Annual	0.15	1600	
Cyclohexane 110-82-7	1-hr	5.53	3400	Step 3 – GLCmax < 10% ESL
Diethanolamine 111-42-2	1-hr	31.78	51	Step 3 – GLCmax < 10% ESL
Ethylbenzene 100-41-4	1-hr	3.64	26000	Step 3 – GLCmax < 10% ESL
Naphthalene 91-20-3	1-hr	3.25	440	Step 3 – GLCmax < 10% ESL
n-nonane 111-84-2	1-hr	3.20	4800	Step 3 – GLCmax < 10% ESL
n-octane 111-65-9	1-hr	8.13	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.03	540	
n-pentane 109-66-0	1-hr	32.65	59000	Step 3 – GLCmax < 10% ESL
Trimethylbenzene 25551-13-7	1-hr	1.04	4400	Step 3 – GLCmax < 10% ESL
	Annual	0.03	54	
Chlorine	1-hr	0.02	43	Step 3 – GLCmax < 10% ESL

7782-50-5	Annual	<0.01	2.6	
hydrogen chloride 7647-01-0	1-hr	0.02	190	Step 3 – GLCmax < 10% ESL
	Annual	<0.01	7.9	
cis-2-butene 590-18-1	1-hr	1.90	10000	Step 3 – GLCmax < 10% ESL
	Annual	0.14	480	
1,2,4-trimethylbenzene 95-63-6	1-hr	8.07	4400	Step 3 – GLCmax < 10% ESL
	Annual	0.19	54	
1,2,3-trimethylbenzene 526-73-8	1-hr	2.14	4400	Step 3 – GLCmax < 10% ESL
	Annual	0.05	54	
1,3,5-trimethylbenzene 108-67-8	1-hr	2.09	4400	Step 3 – GLCmax < 10% ESL
	Annual	0.04	54	
1-methylnaphthalene 90-12-0	1-hr	1.93	200	Step 3 – GLCmax < 10% ESL
m-xylene 108-38-3	1-hr	8.65	2200	Step 3 – GLCmax < 10% ESL
	Annual	0.28	180	
o-xylene	1-hr	6.67	2200	Step 3 – GLCmax < 10% ESL
	Annual	0.20	180	
p-xylene 106-42-3	1-hr	7.59	2200	Step 3 – GLCmax < 10% ESL
	Annual	0.21	180	
3-methylheptane 589-81-1	1-hr	1.56	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.04	540	
trans-2-butene 624-64-6	1-hr	1.47	10000	Step 3 – GLCmax < 10% ESL
	Annual	0.11	480	

ethylene 74-85-1	1-hr	37.88	1400	Step 3 – GLCmax < 10% ESL
	Annual	1.18	34	
2-methyl-2-butene 513-35-9	1-hr	0.31	10000	Step 3 – GLCmax < 10% ESL
	Annual	0.01	480	
cis-2-pentene 627-20-3	1-hr	0.15	10000	Step 3 – GLCmax < 10% ESL
	Annual	<0.01	480	
Methylcyclopentane 96-37-7	1-hr	7.30	2600	Step 3 – GLCmax < 10% ESL
2,3-dimethylbutane 79-29-8	1-hr	1.19	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.04	200	
2,2-dimethylbutane 75-83-2	1-hr	0.55	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.02	200	
2-methylpentane 107-83-5	1-hr	5.83	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.18	200	
n-hexane 110-54-3	1-hr	16.50	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.46	200	
3-methylpentane 96-14-0	1-hr	3.89	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.04	540	
2,3,4-trimethylpentane 565-75-3	1-hr	0.69	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.04	540	
2,2,4-trimethylpentane 540-84-1	1-hr	1.64	5600	Step 3 – GLCmax < 10% ESL
	Annual	0.09	540	
Isobutane 75-28-5	1-hr	32.35	23000	Step 3 – GLCmax < 10% ESL
n-decane 124-18-5	1-hr	22.27	1700	Step 3 – GLCmax < 10% ESL
Dodecane 112-40-3	1-hr	36.45	3500	Step 3 – GLCmax < 10% ESL
n-undecane 1120-21-4	1-hr	31.52	3500	Step 3 – GLCmax < 10% ESL
Isopentane 78-78-4	1-hr	18.75	59000	Step 3 – GLCmax < 10% ESL
dimethyl disulfide 624-92-0	1-hr	0.04	20	Step 3 – GLCmax < 10% ESL
m-ethyltoluene 620-14-4	1-hr	3.50	1250	Step 3 – GLCmax < 10% ESL
Ammonia 7664-41-7	1-hr	4.85	180	Step 3 – GLCmax < 10% ESL
hydrogen cyanide 74-90-8	1-hr	4.85	20	Step 3 – GLCmax < 10% ESL
Methyl mercaptan 74-93-1	1-hr	<0.01	1.9	Step 3 – GLCmax < 10% ESL

Minor NSR Site-wide Modeling Results for Health Effects Over Industrial Land					
Pollutant	**CAS#**	**Averaging**	**GLC_{MAX}**	**GLC_{MAX} Location**	**ESL**

		Time	µg/m³		µg/m³
diethanolamine	111-42-2	1-hr	195	SW Property Line	51
hydrogen cyanide	74-90-8	1-hr	11	243m NW	20

Minor NSR Site-wide Modeling Results for Health Effects Over Industrial Water					
Pollutant	**CAS#**	**Averaging Time**	**GLC_{MAX} µg/m³**	**GLC_{MAX} Location**	**ESL µg/m³**
diethanolamine	111-42-2	1-hr	15	N Property Line	51
hydrogen cyanide	74-90-8	1-hr	6	539m W	20

Minor NSR Site-wide Modeling Results for Health Effects Over Non-Industrial Land					
Pollutant	**CAS#**	**Averaging Time**	**GLC_{MAX} µg/m³**	**GLC_{MAX} Location**	**ESL µg/m³**
diethanolamine	111-42-2	1-hr	45	139m NW	51
hydrogen cyanide	74-90-8	1-hr	10	94m NW	20

Minor NSR Hours of Exceedance for Health Effects		
Pollutant	**Averaging Time**	**2 x ESL GLC_{MAX}**
diethanolamine	1-hr	2

A toxicology review was performed to evaluate the modeled emissions of diethanolamine that are predicted to occur at this facility, and to ascertain whether these emissions would be of concern to human health and welfare (odor and vegetation). The PAR site is surrounded by open, undeveloped land that has been zoned for various uses: heavy industrial zones (light orange/yellow), light residential zones (purple), and a light retail zone (pink) (Figure 1). Taft Elementary School is 2,647 feet from PAR's southern property line. A city park abuts Total's southwest property line.

Sitewide refined modeling (AERMOD) was used to estimate the emissions from on-site operations. The maximum off-property ground level chemical concentration (GLCmax) is predicted to occur directly on the northwest property line on industrial land. The maximally affected non-industrial receptor concentration (GLCni) is predicted to occur 456 feet from the northwest property line on undeveloped open land (zoned heavy industrial), but conservatively reviewed as non-industrial receptor due to potential for presence of the general public on the undeveloped open land. The predicted ground level concentrations of the modeled chemical (diethanolamine) were then compared to its short-term and long-term Effects Screening Levels (ESLs).

For routine plus maintenance, startup, and shutdown operations (Routine/MSS), modeling predicts that the short-term GLCmax for diethanolamine would be 2.1 times its short-term ESL (51 µg/m³). The predicted corresponding frequency of two-times ESL exceedance at the GLCmax is 2 hours per year. The predicted short-term GLCni for diethanolamine is less than its short-term ESL. The annual impact analysis was not performed because there is no predicted net annual increase in emissions for this chemical.

Considering the magnitude and frequency of the short-term ESL exceedances, the conservative worst-case scenario modeling assumptions, the satisfactory compliance history at this site, and that there is no long-term increase in chemical emissions, the predicted short- and long-term impacts for diethanolamine are allowable.

In conclusion, we do not anticipate any short- or long-term adverse health effects to occur among the general public as a result of exposure to the proposed emissions from this facility.

Project Reviewer	Date	Team Leader	Date
Ruth Alvirez		Dara Winstead	