Permit by Rule (PBR) Registration Technical Review

Company:	Texas Tank Works, LLC	Registration No.:	177354
Nearest City:	Nederland	Project No.:	378918
County:	Jefferson	Project Type:	Initial
Project Reviewer:	John Ma	Regulated Entity No.:	RN101625713
Unit Name:	Nederland Tank Wash	Customer Reference No.:	CN605349737
PBR No(s).:	106.183, 106.261, 106.262, 106.472, 106.492	Project Received Date:	August 26, 2024
Physical Location:	7744 Beauxart Garden Rd		

Project Overview / Process Description

Texas Tank Works owns and operates a tank washing operation in Jefferson County. The operation is currently authorized under NSR Permit No. 25393 and PBR Permit Nos. 75486 and 81522. The company has submitted this certified project to fully authorize the site under PBRs 106.183, 106.261, 106.262, 106.472, and 106.492. MSS activities will be claimed under 106.263. Upon company request, PBRs 75486 and 81522 will be voided upon issuance of this project. Texas Tank Works will void the NSR permit after the issuance of this project. A further detailed process description is included in the project file.

The site primarily receives RCRA empty containers for internal cleaning, including but not limited to tank semi-trailers, frac tanks, totes (IBCs), iso-containers, vacuum tanks, frac tanks, roll-off boxes, and vacuum boxes. Some containers may have liquid residue (heel) that will require removal prior to the wash. There are two wash bays, with a maximum cleaning rate of two containers per hour per bay (4 containers per hour total). There is one additional bay that is used for removing solids that can't be washed out using normal washing processes, which may include the use of solvents other than water when necessary. The facility anticipates being able to clean a maximum of 50 trucks per day with a maximum of 15,600 trucks per year. A maximum of 2 containers can be cleaned simultaneously, uncontrolled. It will be conservatively assumed that a maximum of 4 containers could be cleaned in a single hour.

The site may use any one or combination of emission control devices, based on the specific material being cleaned: uncontrolled, flare only, scrubber and flare, Double Carbon Absorption System (CAS) only, and Double Carbon Absorption System (CAS) and flare.

Upon receipt, TTW Nederland determines and records the previous contents of the container from shipping documents, including Safety Data Sheets (SDSs), where applicable. The container is then positioned in one of the two wash bays located inside the building. A pressure reading is taken at the hatch or drain line to determine if there is pressure inside the container. If there is any pressure reading above zero, the tank will be vented to a control device. In this case, pressure inside the tank is such that vapors must be slowly vented off prior to completely opening the hatch for inspection. The amount of venting required is normally limited to only enough time to depressurize for safety purposes but is generally vented until the entire air volume has been vented to the control device.

Prior to cleaning, any liquid residue (heel) remaining in the container is drained into a drum or other DOT approved shipping container for return to the customer or for shipment to an off-site disposal facility. Heel drumming will be authorized under 106.261 and 106.262. Most tank containers arrive empty, but some may have a remaining heel in the truck. Although a maximum average of 50 gallons of heel would be drained for most cleanings, there are times when there may be larger volumes to be drained and returned to the customer. When draining is necessary, the heel is transferred via submerged loading into a tight head drum or poly tote, resulting in minor fugitive emissions. Drums or totes containing the heel are sealed immediately and prepared for transfer back to the client or to a proper disposal facility.

Once depressurized, if needed, and all materials are drained from the container, the hatch on top of the trailer is opened and inspected. After inspection and gross heel removal, the hatch and drain valve are connected via an airtight closed loop system, which pumps cleaning solutions into the tank through a spinner system spraying the inside walls and solubilizing any remaining product residue. Cleaning solutions may include very dilute caustic (sodium hydroxide), acid, diesel, and/or detergent, usually 0.5% to 1.0% solutions. The appropriate cleaning solution is pumped through the valve at the bottom of the container and back to the appropriate vat. There is a detergent cleaning vat, a hot water vat, caustic vat, stripper vat, cold water rinse vat, and two 300-gallon diesel tank flush vats. These vats will be authorized under 106.472. Cleaning normally takes approximately 30 minutes to complete. The detergent in the vat is removed and replaced after 10 to 30 tank cleanings.

Before or after the liquid cleaning cycle, hot water and/or steam may be introduced into the tanks. A natural gas fired boiler with a maximum firing rate of 4.25 MMBtu is used to produce hot water and steam. This boiler will generally operate at 20-30% capacity.

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The condensed water exits the tanker through a valve and hose, then enters a sump. Reusable sump water is pumped into a 15,000-gallon above ground storage tank, where it will be sent to a Batch Water Treatment System for makeup water to vats. Water that cannot be reused will be pumped to an on-site 20,000-gallon frac tank. When the frac tank is full, the wastewater is loaded into tanker trucks and shipped off-site for disposal.

	Project List												
Project	Project Name	Distance to Nearest	Description										
No.		Receptor (feet):											
1	94-3 Tank Wash Bays	120	Wash Bay Emissions										
2	94-2 Tank Wash Flare	205	Wash Bay Flare Emissions										

Permit by Rule Requirements - 30 TAC Chapter 106 General Requirements

Registration Fee Reference No.:	Application fee: 718838 / 582EA000623064 Surcharge fees: 718839 / 582EA000623064 721165 / 582EA000625275
Is this registration certified?	Yes
Is planned MSS included in the registration?	No
Are there affected NSR or Title V authorizations for the project?	No
If there are affected Title V authorizations, is monitoring being submitted as part of	f this registration? No
Are there any upstream or downstream affects associated with this registration?	No
Are associated upstream/downstream emissions either included in the registration with no changes to underlying air authorizations for the applicable units regarding impacts, or other representations.	OR within current permitted limits BACT, health and environmental NA
Are emissions for each PBR authorized facility less than the § $106.4(a)(1)$ limits?	Yes
Are total emissions from all sitewide PBR authorized facilities less than the § 106 been subject to public notice requirements? Sitewide emissions meet 106.4 lim	4(a)(4) limits, OR has the site Yes
Are there permit limits on using PBRs at the site?	No
Is the facility in compliance with all other applicable rules and regulations?	Yes
Does the registration include an appropriate PBR workbook, and has the workbook	bk been verified? Yes
Notes:	

Federal Applicability	
Does this project trigger a PSD or Nonattainment review?	No
Does the Major NSR applicability analysis include all associated upstream and/or downstream emissions?	NA
Are there any applicable standards under NSPS, NESHAP, or NESHAP for source categories (MACT)?	No

Permit by Rule Requirements - Compliance Demonstrations PBR 106.183 Boilers, Heaters, And Other Combustion Devices

Boilers, heaters, drying or curing ovens, furnaces, or other combustion units, but not including stationary internal combustion engines or turbines are permitted by rule, provided that the following conditions are met.

(1) The only emissions shall be products of combustion of the fuel.

(2) The maximum heat input shall be 40 million British thermal unit (Btu) per hour with the fuel being:

(2)(A) sweet natural gas;

(3) Distillate fuel oil will not be used.

(4) n/a; boiler is rated at 4.25MMBtu/hr.

(5) Records of hours of fuel oil firing and fuel oil purchases shall be maintained on-site on a two-year rolling retention period and made available upon request to the commission or any local air pollution control agency having jurisdiction.

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EPNs: 94-1

PBR 106.261/262 Facilities (Emission Limitations / Emission and Distance Limitations)

• The emission point(s) associated with the facilities or changes to facilities are located at >100ft from the nearest off-site receptor.

• The total new or increase emissions will comply with the applicable hourly and annual emission limits as represented in the table below.

- Site will not handle chemicals listed under 106.262(a)(4).
- There are no changes to or addition of any pollution abatement equipment.

• Visible emissions to the atmosphere, from any point or fugitive source, do not exceed 5.0 percent opacity in any six-minute period.

• This registration does not authorize construction or changes to a facility authorized under another section of this chapter or under standard permit.

EPNs: 94-3, 94-2

PBR 106.472 Organic and Inorganic Liquid Loading and Unloading

Liquid loading or unloading equipment for railcars, tank trucks, or drums; storage containers, reservoirs, tanks; and change of service of material loaded, unloaded, or stored is permitted by rule, provided that no visible emissions result and the chemicals loaded, unloaded, or stored are limited to:

(2) water or wastewater;

(4) aqueous caustic solutions, except ammonia solutions;

(5) inorganic acids except oleum, hydrofluoric, and hydrochloric acids;

(9) organic liquids having an initial boiling point of 300 degrees Fahrenheit or greater. Facilities loading, unloading, or storing butyric acid, isobutyric acid, methacrylic acid, mercaptans, croton oil, 2-methyl styrene, or any other compound with an initial boiling point of 300 degrees Fahrenheit or greater listed in 40 Code of Federal Regulations 261, Appendix VIII shall be located at least 500 feet from any recreational area or residence or other structure not occupied or used solely by the owner of the facility or the owner of the property upon which the facility is located.

EPNs: WWTRKLOAD, FRACTK01, 94-12

PBR 106.492 Flares

Smokeless gas flares which meet the following conditions of this section are permitted by rule:

(1) design requirements.

(1)(A) The flare shall be equipped with a flare tip designed to provide good mixing with air, flame stability, and a tip velocity less than 60 feet per second (ft/sec) for gases having a lower heating value less than 1,000 British thermal units per cubic foot (Btu/ft3) or a tip velocity less than 400 ft/sec for gases having a lower heating value greater than 1,000 Btu/ft3.

(Tip Velocity: <400.0ft/sec, Heating Value: 1020.0 BTU/scf)

(1)(B) The flare shall be equipped with **an automatic ignition system** that assures gas ignition and provides immediate notification of appropriate personnel when the ignition system ceases to function. A gas flare which emits no more than 4.0 pounds per hour (lb/hr) of reduced sulfur compounds, excluding sulfur oxides, is exempted from the immediate notification requirement, provided the emission point height meets the requirements of §106.352(4) of this title (relating to Oil and Gas Production Facilities).

(1)(C) Flare will not burn sour gas.

(1)(D) Heat release of the flare will be greater than the calculated Q value.

(2) operational conditions.

(2)(A) The flare shall burn a combustible mixture of gases containing only carbon, hydrogen, nitrogen, oxygen, sulfur, chlorine, or compounds derived from these elements. When the gas stream to be burned has a net or lower heating value of more than 200 Btu/ft3 prior to the addition of air, it may be considered combustible.

(2)(B) Company will maintain that the flare will burn gases containing less than 24 ppmv of sulfur, chlorine, or compounds containing either element. Form PI-7 CERT submitted via STEERS.

(2)(C) Under no circumstances shall liquids be burned in the flare.

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EPNs: 94-2

Compliance History and Site Review

 In accordance with 30 TAC Chapter 60, a compliance history report was reviewed on:
 September 24, 2024

 Site rating / classification:
 Unclassified
 Company rating / classification:
 0.18 / Satisfactory

 Has any action occurred on the basis of the compliance history or rating?
 No

 Did the Regional Office provide site approval and confirm distances?
 NA

Project	Chemical	Emi	Emi	Но	Annual	Mee
Name		ssion Threshold (lb/hr)	ssion Threshold (tpy)	urly Emissions (lb/hr)	Emissions (tpy)	ts Threshold?
94-3 Tank Wash Bays	Butane	6	10	6.00E+00	1.00E+01	Yes
94-3 Tank Wash Bays	Ethanol	6	10	5.77E+00	1.00E+01	Yes
94-3 Tank Wash Bays	Isopropyl Alcohol (2-Propanol)	6	10	4.81E+00	1.00E+01	Yes
94-3 Tank Wash Bays	Acetylene	6	10	5.35E+00	1.00E+01	Yes
94-3 Tank Wash Bays	Propane	6	10	5.90E+00	1.00E+01	Yes
94-3 Tank Wash Bays	Crude Oil	6	10	5.91E+00	1.00E+01	Yes
94-3 Tank Wash Bays	Refinery Petroleum Fractions	6	10	5.96E+00	1.00E+01	Yes

	106.261(a)(3) Emissions												
Project Name	Chemical	Emi ssion	Emi ssion	Ho urly	Annual Emissions	Mee ts							
		Threshold (lb/hr)	Threshold (tpy)	Emissions (lb/hr)	(tpy)	Threshold?							
94-3 Tank Wash Bays	1,3-Dioxolane-4-methanol, 2,2-dimethyl-	1	4.38	1.00E+00	4.38E+00	Yes							
94-3 Tank Wash Bays	Pentanenitrile	1	4.38	9.99E-01	4.38E+00	Yes							
94-3 Tank Wash Bays	1-Propanamine, 2-methyl-N-(2- methylpropyl)-	1	4.38	9.99E-01	4.38E+00	Yes							
94-3 Tank Wash Bays	1,2-EPOXYBUTANE	1	4.38	9.99E-01	4.38E+00	Yes							
94-3 Tank Wash Bays	1-Hexanamine	1	4.38	9.98E-01	4.38E+00	Yes							
94-3 Tank Wash Bays	Octane, 2,7-dimethyl-	1	4.38	9.98E-01	4.38E+00	Yes							
94-3 Tank Wash Bays	Pyridine, 2-chloro-	1	4.38	9.98E-01	4.01E+00	Yes							
94-3 Tank Wash Bays	Butane, 1-bromo-3-methyl-	1	4.38	9.98E-01	4.38E+00	Yes							
94-3 Tank Wash Bays	1-Butanol, 3-methyl-, formate	1	4.38	9.97E-01	4.38E+00	Yes							
94-3 Tank Wash Bays	Tetrachloropropene	1	4.38	9.97E-01	4.38E+00	Yes							

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106.262(a)(2) Emissions – Table 262												
Project Name	Chemical	L Value (mg/m³)	K value (from distance)	E, maximum Hourly Emission Threshold (lb/hr)	Annual Emission Threshold (tpy)	Actual Hourly Increases (Ib/hr)	Actual Annual Increase (tpy)	Meets Threshold?				
94-3 Tank Wash Bays	Coal Tar Pitch Volatiles	0.1	300.8	3.32E-04	1.46E-03	1.92E-05	3.74E-05	Yes				
94-3 Tank Wash Bays	Butyl Chromate	0.01	300.8	3.32E-05	1.46E-04	2.40E-05	1.46E-04	Yes				
94-3 Tank Wash Bays	Chromic Acid	0.01	300.8	3.32E-05	1.46E-04	3.22E-05	1.46E-04	Yes				
94-3 Tank Wash Bays	Nickel, Inorganic Compounds	0.015	300.8	4.99E-05	2.18E-04	4.92E-05	2.18E-04	Yes				
94-3 Tank Wash Bays	Tolidine	0.02	300.8	6.65E-05	2.91E-04	6.59E-05	2.91E-04	Yes				
94-3 Tank Wash Bays	Parathion	0.05	300.8	1.66E-04	7.28E-04	1.64E-04	7.28E-04	Yes				
94-3 Tank Wash Bays	Chromium Metal, Chromium II and III Compounds	0.1	300.8	3.32E-04	1.46E-03	2.86E-04	1.12E-03	Yes				
94-3 Tank Wash Bays	Nitroglycerine	0.1	300.8	3.32E-04	1.46E-03	3.01E-04	1.46E-03	Yes				
94-3 Tank Wash Bays	Creosote	0.1	300.8	3.32E-04	1.46E-03	3.16E-04	1.46E-03	Yes				
94-3 Tank Wash Bays	Trimethylamine	0.1	300.8	3.32E-04	1.46E-03	3.18E-04	1.46E-03	Yes				

106.262(a)(2) Emissions – 1997 ACGIH Guide

Project Name	Chemical	L Value (mg/m³)	K value (from distance)	E, maximum Hourly Emission Threshold (lb/hr)	Annual Emission Threshold (tpy)	Actual Hourly Increases (Ib/hr)	Actual Annual Increase (tpy)	Meets Threshold?
94-3 Tank Wash Bays	Adiponitrile	8.8	300.8	2.93E-02	1.28E-01	2.59E-06	5.05E-06	Yes
94-3 Tank Wash Bays	Arsenic, elemental and inorganic compounds (except Arsine)	0.01	300.8	3.32E-05	1.46E-04	3.25E-05	1.46E-04	Yes
94-3 Tank Wash Bays	Hydrazine	0.013	300.8	4.32E-05	1.89E-04	4.25E-05	1.89E-04	Yes
94-3 Tank Wash Bays	Lead - elemental and inorganic compounds	0.05	300.8	1.66E-04	7.28E-04	1.65E-04	7.28E-04	Yes
94-3 Tank Wash Bays	Methylene bisphenyl isocyanate	0.051	300.8	1.70E-04	7.43E-04	1.69E-04	7.43E-04	Yes
94-3 Tank Wash Bays	Aluminum Metal Dust	10	300.8	3.32E-02	1.46E-01	2.97E-04	5.79E-04	Yes
94-3 Tank Wash Bays	Nickel, Metal	1	300.8	3.32E-03	1.46E-02	3.23E-04	1.26E-03	Yes
94-3 Tank Wash Bays	Silica (Crystalline) - Quartz	0.1	300.8	3.32E-04	1.46E-03	3.31E-04	1.29E-03	Yes
94-3 Tank	Glutaraldehyde -	0.2	300.8	6.65E-04	2.91E-03	6.40E-04	2.83E-03	Yes

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Wash Bays	activated and inactivated							
94-3 Tank Wash Bays	Calcium hydroxide	5	300.8	1.66E-02	7.28E-02	8.16E-04	1.59E-03	Yes

Total 106.261/262 Combined Emissions

	Total Hourly Emissions (lb/hr)	Total Annual Emissions (tpy)							
Total Emissions:	11.92	10.00							
Note: Additional compounds and specific emission rates are included in the registration file. Emissions are based on a worst-case									

Note: Additional compounds and specific emission rates are included in the registration file. Emissions are based on a worst-case scenario basis with each contaminant represented at their worst concentration, totaling more than 100%. All emissions will not occur simultaneously.

Emission Summary

EPN / Emission	V	OC	N	Эх	C	:0	PM ₁₀	PM _{2.5}	S	O ₂	Inorg	janics	H	CI	н	Br	Exe Solv	mpt ents
Source	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
94-3 / Wash Bays Uncontrolled and CAS Controlled	6.00	10.00									5.91	10.00					0.97	4.38
94-2 / Wash Bays Controlled to Flare	5.92		0.83	6.39	1.65	12.75	<0.01	<0.01	0.02	<0.01	5.11		<0.01	0.01	0.01	<0.01	0.71	
94-1 / Water Boiler	0.02	0.10	0.42	1.83	0.35	1.53	0.03	0.14	<0.01	0.01								
WWTRKLOAD / Wastewater Truck Loading	2.28	0.38																
FRACTK01 / Wastewater Frac Tank	0.87	0.28																
94-12 / Wastewater Storage Tank	1.51	0.18																
TOTAL EMISSIONS (TPY):		10.94		8.22		14.28		0.14		0.01		10.00		0.01		<0.01		4.38
MAXIMUM OP	ERAT	TING S	CHED	ULE:	Hour	s/Day	24	Days	/Week	7	Wee	ks/Yea	ar 52	Ηοι	ırs/Ye	ar 8,7	760	

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September 24, 2024 Date

Mr. John Ma Permit Reviewer **Rule Registration Section**

Micha Patu ()

Michael Partee, Manager Rule Registrations Section Air Permits Division Section Manager

September 25, 2024 Date