TECHNICAL REVIEW: STANDARD PERMIT FOR INSTALLATION AND/OR MODIFICATION OF OIL AND GAS FACILITIES

Permit No.:	170126	***Company Name:***	Bayswater Operating Company LLC	***APD Reviewer:***	Ms. Brittiny Williams
Project No.:	378609	***Site/Area Name:***	Mongoose Gas Treatment Plant	***SP No.:***	6002 - 116.620 PRE 2011-FEB-27

GENERAL INFORMATION			
Regulated Entity No.:	RN111561429	**Project Type:**	Standard Permit Application
Customer Reference No.:	CN605614106	**Date Received by TCEQ:**	August 16, 2024
City/County:	Westbrook, Mitchell County	**Date Received by Reviewer:**	August 19, 2024
Physical Location:	1625 County Road 280		

CONTACT INFORMATION					
Responsible Official/Primary Contact Name and Title:	Brad M Rogers EH&S Manager	**Phone No.:** **Fax No.:**	(303) 893-2503	**Email:**	BROGERS@BAYSWATER.US
Technical Contact/Consultant Name and Title:	Mark Martelli PE Senior Engineer	**Phone No.:** **Fax No.:**	(972) 951-4164	**Email:**	MARK.MARTELLI@FLATROCKENERGY.NET

Compliance History Evaluation - 30 TAC Chapter 60 Rules	
A compliance history report was reviewed on:	**August 23, 2024**
Site rating & classification:	**Unclassified**
Company rating & classification:	**Unclassified**
If site was rated unsatisfactory, what action(s) occurred as a result:	**N/A**

GENERAL RULES CHECK	**YES**	**NO**	**COMMENTS**
Is confidential information included in the application?		X	
Has the standard permit fee been paid?	X		*Standard Permit: 717641 / 582EA000621942* *Expedite: 717642 / 582EA000621942*
Are there associated NSR or Title V permits at the site?		X	
Is the application for renewal of an existing standard permit?		X	
Do NSPS, NESHAP, or MACT standards apply to this registration?	X		*If YES, list Subparts:* NSPS Dc, NSPS JJJJ, NSPS OOOO, OOOOa, MACT HH, MACT ZZZZ
Is the following documentation included with this registration? 1. The General Requirements Checklist demonstrating compliance with 30 TAC §§ 116.110 and 116.601-615 2. Process description 3. Project description 4. Descriptions of any equipment being installed 5. Emissions calculations including the basis of the calculations 6. Emission increases and/or decreases associated with this project (quantified) 7. Description of efforts to minimize any collateral emissions or collateral increases	X		
Are any requirements of 116.110 circumvented by: (1) artificially limiting feed or production rates below the maximum capacity of the project's equipment; (2) claiming a limited chemical list; or (3) dividing and registering a project in separate segments?		X	

STANDARD PERMIT RULES CHECK:	**YES**	**NO**	**COMMENTS**
Does the facility meet the § 116.14(2) definition of an Oil & Gas facility?	X		
Are there any net increases in emissions associated with this registration?	X		*See 106.261/262 table below.*
Does the facility vent or flare more than 0.3 long tons of sulfur (other than Sulfur Dioxide) per day?		X	
Are all emissions of sulfur compounds (other than SO2 and fugitives) controlled?		X	*If NO, list the emission rate (must be ≤4 lb/hr):* ≤4 lb/hr
Are all vents that emit sulfur compounds (other than SO2 and fugitives) to the atmosphere at least 20 feet above ground level (excluding emergency safety relief valves)?	X		*List vent heights:* **FL-1 =** 60 ft, **FL-2 =** 20 ft

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Are there new or modified internal combustion reciprocating engines or gas turbines at the facility?	X		**C-1 –** hp = 1340, fuel type = sweet residue gas, NOx emission rate = 2.00 g/hp-hr, manufacture date = 08/21/2003. **C-2 –** hp = 1380, fuel type = sweet residue gas, NOx emission rate = 1.00 g/hp-hr, manufacture date = 09/11/2011.
Is there a natural gas glycol dehydration unit at the site that emits >10 tpy of VOCs?		X	
Are any combustion units with a design maximum heat input value > 40 MBtu/hr at the site (other than flares, internal combustion engines, or natural gas turbines)?		X	
Are VOC process fugitive emissions uncontrolled? *If YES, mark applicable inspection and repair requirements.* [§ 116.620(c)(1) or § 116.620(c)(2)]	X		VOCs (tpy) — receptor < 500' — receptor ≥500' X <10 — no LDAR — no LDAR __ 10≤25 — 28M [(c)(1)] — no LDAR __ 25≤40 — 28VHP [(c)(2)] — 28M [(c)(1)] __ >40 — 28VHP [(c)(2)] — 28VHP [(c)(2)]
Are all components in sweet crude oil or gas service (defined in 30 TAC Chapter 101)? *If NO, mark applicable inspection and monitoring requirements.* [§§ 116.620(c)(3) and 116.620(e)(1)]		X	RECEPTOR — APPLICABLE REQUIREMENT ____ < ¼ mile — § 116.620(c)(3) __X__ ≥ ¼ mile — § 116.620 (c)(3) or (e)(1)
Are there flares at the facility?	X		The flares at Mongoose Gas Treatment Plant will comply with the specified operational requirements.
Is a flare the only combustion unit at the site?		X	*If NO, mark the fuel type for all combustion units.* ___ sweet natural gas ___ liquid petroleum gas __X__ fuel gas ≤10 grains total sulfur/100 dscf ___ field gas ≤1.5 grains H_2S/100 dcfm or ≤30 grains total sulfur/100 dscf ___ field gas >1.5 grains H_2S/100 dcfm or >30 grains total sulfur/100 dscf (recordkeeping requirements of § 116.620(a)(18) applicable)
Are all storage tanks onsite either (1) pressurized; (2) < 25,000 gallons in size; or (3) used for storage of compounds with vapor pressures < 0.5 psia?	X		
Are there any fixed roof storage tanks onsite that emit > 10 tpy VOCs or sulfur compounds?		X	

DESCRIBE OVERALL PROCESS AT THE SITE

The Mongoose Ga Treatment Plant is owned and operated by Bayswater operating Company LLC.

Natural gas from the inlet separators/slug catchers is compressed by two (2) electric motor driven compressors prior to entering the amine gas treating unit. From the amine unit the gas is dehydrated in the glycol dehydration unit. After dehydration the dehydrated sweet gas will exit the plant via the two (2) new Caterpillar residue gas compressors; one driven by a 1,340-hp Caterpillar G3516LE (C-1) and the other driven by a 1,380-hp Caterpillar G3516B (C-2).

Rich amine, which contains hydrogen sulfide (H2S) and carbon dioxide (CO2), enters the amine regeneration unit which heats the amine to drive off the H2S and CO2. The resulting acid gas is compressed by an electric motor driven acid gas compressor (AGI) and injected into a disposal well. The plant will operate under a shutdown system in which inlet compression is curtailed when the AGI compressor goes down. Most of the inlet liquids sent to the slop tanks are made in the intermediate stages of the inlet compression. Condensate and produced water production is to be minimized by temperature control of intermediate stage temperatures because any liquids produced in the compressor stages is sour and not a sellable product. Slop (condensate and/or produced water) produced is trucked from the facility via tank trucks that have been leak tested. The vapor recovery unit (VRU) will capture and route the tank and truck loading vapors back to inlet compressor suction. The standard flare (which is considered a back up to the VRU) will then capture and control the remaining emissions. The standard flare (EPN: FL-1) also burns gas from pressure safety valves (PSVs), inlet gas and AGI compressor packing vents, and emergency blowdowns. TCEQ is not authorizing emergency emissions with this registration. The Dehy Enclosed Flare (EPN: FL-2) is used to burn dehy flash and BTEX non-condensables.

In addition, there are emissions from fugitive sources.

Note: The addition of the two (2) Caterpillar engine driven residue compressors (one driven by a 1,340-hp Caterpillar G3516LE and the other driven by a 1,380-hp Caterpillar G3516B) does not increase plant capacity, only makes for being able to transport residue gas to a residue gas pipeline.

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DESCRIBE PROJECT AND INVOLVED PROCESS

Bayswater Operating Company LLC has chosen to revise and certify their site and emissions under rule 116.620 using a PI-1S. MSS will be claimed under PBR 106.359.

This application makes the following changes to the existing registration:

- Removed three 2,250-hp Waukesha P9394GSI engine driven generators
- Added two (2) Caterpillar engine driven residue compressors (one driven by a 1,340-hp Caterpillar G3516LE and the other driven by a 1,380-hp Caterpillar G3516B)
- Inlet gas composition was updated via an inlet gas analysis from 2024.
- Updated flare and fugitive emissions.

TECHNICAL SUMMARY - DESCRIBE HOW THE PROJECT MEETS THE RULES

§116.610 Applicability

This standard permit includes all facilities at this site and conditions (a)-(d) are met.

§116.611 Registration to Use a Standard Permit

All required documentation has been submitted. All of conditions (a)-(c) are met.

§116.614 Standard Permit Fees

The $900 fee has been submitted.

§116.615 General Conditions

All of general conditions (1)-(10) will be met.

§116.620 Installation and/or Modification of Oil and Gas Facilities

This site meets all conditions (a)-(d) of the oil and gas standard permit.

§§106.261 / 106.262 Compliance

The site complies with the limitations of 30 TAC §§106.261 and 106.262.

FEDERAL STANDARDS APPLICABILITY

Applicable Rule(s) :	*Y*	*NA*	*Explanation of how it meets (if applicable), or why it isn't applicable:*
NSPS Subpart Dc	X		Applicable. This subpart affects industrial commercial- institutional steam generating units with a design capacity between 10 and 100 MMBtu/hr heat input and which commenced construction or modification after July 9, 1989. HT-1 has a capacity greater than 10-MMBtu/hr and is subject to the fuel monitoring requirements of this subpart.
NSPS Subpart JJJJ	X		Applicable. This subpart promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size. The specific emission standards (either in g/hp-hr or as a concentration limit) vary based on engine class, engine power rating, lean-burn or rich-burn, fuel type, duty (emergency or non-emergency), and manufacture date. The Caterpillar G3516B natural gas fired compressor engine (C-2) was manufactured after July 1, 2010, and is thus subject to the stage 2 standards of this subpart. The Caterpillar G3516LE was manufactured prior to June 12, 2006, and is not subject to this subpart. Bayswater will comply with all applicable requirements.
NSPS Subpart OOOO	X		Applicable. Pneumatic controllers affected by the NSPS OOOO include continuous bleed, natural gas-driven pneumatic controllers with a natural gas bleed rate greater than 6 SCFH that commenced construction, modification or reconstruction after August 23, 2011. Bayswater plans to use low-bleed pneumatic controllers or pneumatics with natural gas bleed rates of less than 6 SCFH installed and tagged with the month and year of installation, reconstruction, or modification and will comply with applicable requirements for any pneumatic controllers installed on or after October 15, 2013, with bleed rates greater than 6 SCFH. Standards also apply to storage vessels constructed, modified or reconstructed after August 23, 2011, with volatile organic compounds (VOC) emissions equal to or greater than 6 tons per year (TPY). The storage vessels have potential emissions less than six (6) tons per year (tpy) VOC; therefore, they are not subject to this subpart. Reciprocating compressors subject to the standard will be monitored for operation time and packing rod replacements as required as of October 15, 2012.
NSPS Subpart OOOOa	X		The storage vessels are in compliance, the potential emissions are less than six (6) tons per year (tpy) of volatile organic chemicals (VOCs).
NSPS Subpart OOOOb		X	Not Applicable. All process controllers (i.e., pneumatic controllers and pumps) at the Site are not subject to the requirements of Subpart OOOOb because they have no identifiable emissions (i.e., self-contained) or are air driven operated with instrument air. There have been no modifications, reconstruction, or other physical changes done to the tanks or other OOOOb affected facilities since 08/26/2022 which is prior to the OOOOb applicability date of 12/06/2022. Tank emissions below the 6 tpy and 20 tpy limits.

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MACT Subpart HH	X		Applicable. For purposes of this subpart natural gas enters the natural gas transmission and storage source category after the natural gas processing plant, if present. Even though the TEG dehydration unit at this facility is considered affected area sources, it is exempt from the requirements of § 63.764(d)(2) since the actual average emissions of benzene from the glycol dehydration unit process vent to the atmosphere are less than 0.90 Mg (1.0 TPY), as determined by 119 Bayswater Operating Company, LLC Mongoose Gas Treatment Plant August 2024 the procedures specified in § 63.772(b)(2). However, the facility must maintain records of the de minimis determination as required in § 63.774(d)(1). Bayswater will comply with all applicable requirements.
MACT Subpart ZZZZ	X		Applicable. Based on emission calculations, this facility is a minor source of HAP. The Caterpillar G3516 LE was manufactured prior to June 12, 2006 and is subject to the management practices of this subpart with compliance required by October 19, 2013. However, it is considered a "remote" stationary RICE and is not subject to the emission limitations of this subpart. The Caterpillar G3516B natural gas-fired generator engines (C-2) being manufactured after July 1, 2010, comply with ZZZZ by complying with JJJJ. Bayswater will comply with all applicable requirements.

CONTROL DEVICE(S)				
VRU	Runtime:	98%	Controls what?	Tank and truck loading emissions
	Capture Efficiency:	*100%		
Flare 1 (EPN: Fl-1)	Destruction Efficiency:	99% - (Propane) 98%- (non-Propane)	Controls what?	Uncontrolled tank and loading emissions, gas from pressure safety valves (PSVs), inlet gas and AGI compressor packing vents, emissions from fugitive sources.
Flare 2 (EPN: FL-2)	Destruction Efficiency:	99% - (Propane) 98%- (non-Propane)	Controls what?	Glycol Dehydration Unit
Additional Notes:	*VRU Justification: 1. Company utilizes a number of pressure sensors to monitor the tank pressures and monitor suction pressure and meter vapor flow. 2. Company has a weighted check valve that if the inlet drops below 10 oz, it will open the valve to re-direct flow to the combustor to prevent a vacuum. 3. Company has a gas-blanketing system in place for the tanks. 4. Yes, the VRU can recover wet and dry gas. The VRU has a variable frequency drive to adjust for various flow volumes. 5. Company utilizes continuous monitoring of the tank pressures and inlet pressures of the VRU. Flow to the tanks will shut-down if tank pressures become elevated.			

D= 12,000 and K = 8

PBR 106.261 and 106.262 Emission Limits

Chemical	PBR Claimed	L, mg/m^3	Emission Limit (E = L/K), lb/hr	Emission Limit tpy	Actual Emissions lb/hr	Actual Emissions tpy
Hydrogen Sulfide	116.620(a)(17)	10	1.25	5.00	0.53	1.50
Propane	106.261(a)(2)	-	6.00	10.00	0.75	2.26
Butanes	106.261(a)(2)	-	6.00	10.00	0.71	2.04
Pentanes	106.262	350	6.00	5.00	0.42	1.17
Hexanes	106.262	176	6.00	5.00	0.31	0.91
Heptane	106.262	350	6.00	5.00	0.23	0.75
Octane	106.262	350	6.00	5.00	0.17	0.67
Nonanes	106.261(a)(2)	-	6.00	10.00	0.02	0.10
Benzene	106.262	3	0.375	1.6425	0.14	0.58
Toluene	106.262	188	6.00	5.00	0.15	0.60
Ethylbenzene	106.262	434	6.00	5.00	0.02	0.08
Xylene	106.262	434	6.00	5.00	0.02	0.09

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Decanes	106.261(a)(3)	-	1.00	4.38	0.01	0.04
Acetaldehyde	106.262	9	1.125	4.9275	0.19	0.82
				Total VOC Emissions:	**3.14**	**10.11**
				Total H2S Emissions:	**0.53**	**1.50**

Note: Company is being conservative and representing speciation higher than VOC project totals.

MAXIMUM ALLOWABLE EMISSION RATES TABLE (MAERT)

EPN / Emission Source	VOC		NOx		CO		SO_2		$PM/PM_{10}/PM_{2.5}$		H_2S	
	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
New Emissions												
C-1 / 1,340-hp Caterpillar G3516TALE AFR Engine	1.89	8.28	5.91	25.88	8.86	38.82	0.01	0.03	0.12	0.50	-	-
C-2 / 1,380-hp Caterpillar G3516B Engine	2.13	9.33	3.04	13.33	6.08	26.65	0.01	0.03	0.11	0.47	-	-
Existing Emissions												
HT-1 / 21.00-mmBtu/hr Hot Oil Heater	0.11	0.50	0.91	4.00	1.98	8.69	0.01	0.05	0.16	0.69	-	-
HT-2 / 0.75-mmBtu/hr Glycol Regenerator	<0.01	0.02	0.07	0.32	0.06	0.27	<0.01	<0.01	0.01	0.02	-	-
TL-1 / Slop Truck Loading	0.38	0.03	-	-	-	-	-	-	-	-	0.08	0.01
Revised Emissions												
FL-1 / Flare	0.78	1.31	0.26	0.65	0.52	1.29	22.15	50.03	<0.01	<0.01	0.24	0.54
FL-2 / Dehy Enclosed Flare	0.65	2.83	0.20	0.89	0.40	1.76	0.01	0.04	<0.01	<0.01	<0.01	<0.01
FUG / Fugitive Emissions	1.09	4.79	-	-	-	-	-	-	-	-	0.22	0.95
TOTAL EMISSIONS (TPY):		**27.09**		**45.07**		**77.48**		**50.18**		**1.68**		**1.50**
											MAXIMUM OPERATING SCHEDULE: Hours/Year	8,760

Note: HCHO included in VOCs.

	TECHNICAL REVIEWER	PEER REVIEWER	FINAL REVIEWER
SIGNATURE:	Brittiny Williams	TCEQ Trishia McDonald	Michael Partee
PRINTED NAME:	Ms. Brittiny Williams, Reviewer	Ms. Trishia McDonald, Team Leader	Michael Partee, Manager
DATE:	09/24/2024	09/24/2024	09/26/2024