TECHNICAL REVIEW: Oil and Gas Checklist

Permit No.:	172690	***Company Name:***	Pioneer Natural Resources USA, Inc.	***APD Reviewer:***	Ms. Briannah Spooner
Project No.:	386682	***Unit Name:***	Houston Ranch 35-8h Tank Battery	***SP No(s).:***	6002 - 116.620 PRE 2011-FEB-27

GENERAL INFORMATION			
Regulated Entity No.:	RN111733820	**Date Received by TCEQ:**	December 20, 2024
Customer Reference No.:	CN600130447	**Date Received by Reviewer:**	December 23, 2024
City/County:	Stanton, Glasscock County	**Physical Location:**	FORM THE INTERSECTION OF I-20 AND TX-137 IN STANTON, TX, GO S ON TX-137 FOR 5.9 MI. TURN L ON FARM RD 307 AND GO 4.0 MI. R ON UNNAMED RD FOR 1.1 MI. TO SITE ON R.

CONTACT INFORMATION					
Responsible Official/ Primary Contact Name and Title:	Mr. Matt Mathis Vp Production Operations	**Phone No.:** **Fax No.:**	(432) 571-3105	**Email:**	matt.mathis@pxd.com
Technical Contact/ Consultant Name and Title:	Mr. David Downard PE Hse Specialist	**Phone No.:** **Fax No.:**	(972) 969-5163	**Email:**	david.downard@pxd.com

GENERAL PROJECT INFORMATION	**YES**	**NO**	**COMMENTS**
Is confidential information included in the application?		X	
Are there affected NSR or Title V permits for the project?		X	
Are there permit limits on using PBRs at the site?		X	
Is PSD or Nonattainment netting required?		X	
Has the fee been paid?	X		737564 / 582EA000640469
Was an impacts evaluation required for the project?	X		NOx Screen3
Have MSS emissions been accounted for in site-wide totals?		X	MSS emissions claimed under 106.359
Site Specific Analysis used?		X	Representative analyses meet TCEQ criteria
Are all vents ≥ 20 ft, and meet 352(l)(4) as applicable?	X		Site is sweet

Compliance History Evaluation - 30 TAC Chapter 60 Rules	
A compliance history report was reviewed on:	**December 27, 2024**
Site rating & classification:	**Unclassified**
Company rating & classification:	**0.78 / Satisfactory**

PROJECT RULES	**How was rule compliance demonstrated?** *(i.e., checklist, rule language, etc.)*
116.620	Line-by-line compliance

DESCRIBE THE OVERALL PROCESS AT THE SITE

Pioneer Natural Resources USA, Inc. (Pioneer), owns and operates the Houston Ranch 35-8H Tank Battery (the Site) located in Glasscock County, Texas.

The Houston Ranch 35-8H Tank Battery is a natural gas, oil, and water production site. A mixture of oil, gas, and water enters the Site through a series of separators and heater treaters (EPNs HT1 – HT2) where the gas phase is separated from the liquid phase and the water is separated from the oil. The gas from this separation process is sent off site via the sales gas pipeline. A portion of the sales gas is diverted through the engine-driven compressor (EPN ENG1).

The oil from the separation process is sent into oil tanks (EPNs TANK1 – TANK3). The water from the separation process flows into produced water storage tanks (EPNs TANK4 – TANK6). The Site is also equipped with a line heater (EPN LH) which may be utilized during winter for heating oil from oil storage tanks.

Alternate Operating Scenarios (AOS)
There is one (1) alternate operating scenario (AOS) for the site. AOS-1 occurs when a portion of the facility gas is sent to the flare instead of the sales line. The permit has accounted for up to 500 hours flaring of the facility gas.

TECHNICAL REVIEW: Oil and Gas Checklist

Permit No.:	172690	***Company Name:***	Pioneer Natural Resources USA, Inc.	***APD Reviewer:***	Ms. Briannah Spooner
Project No.:	386682	***Unit Name:***	Houston Ranch 35-8h Tank Battery	***SP No(s).:***	6002 - 116.620 PRE 2011-FEB-27

Loading Operations
Produced oil and water from the storage tanks are primarily piped off site. However, for operational flexibility it has been assumed that up to 1,576,800 barrels per year (bbl/yr) of the produced oil and up to 93,600 bbl/yr of the produced water will be loaded into tanker trucks and trucked off site. Vapors from the oil and produced water loading operations (EPNs LOAD1 and LOAD2) are controlled by a flare (EPN FL1).

DESCRIBE THE PROJECT

Pioneer Natural Resources USA, Inc. (Pioneer) is revising their site and emissions under 116.620 using a PI-7-CERT. Project changes include:

- Adding three (3) separators,
- Adding one (1) vapor recovery unit (VRU),
- Adding one (1) heater treater,
- Increasing production throughputs,
- Updating the Alternate Operating Scenario (AOS).

FEDERAL STANDARDS APPLICABILITY

Applicable Rule(s) :	*Y*	*NA*	*Explanation of how it meets (if applicable), or why it isn't applicable:*
NSPS Subpart A	X		Applicable. The Site will comply with the applicable notification, testing, and reporting requirements listed in this rule.
NSPS Subpart JJJJ	X		Applicable. Per 40 CFR §60.4230(a)(4)(i), engines manufactured on or after July 1, 2007 with maximum engine power greater than or equal to 500 horsepower (hp) are subject to the emission standards specified in the rule. ENG1 will comply with the applicable requirements listed in this rule.
NSPS Subpart OOOOa		X	Not Applicable. The equipment at the Site commenced construction after the applicability date of this rule.
NSPS Subpart OOOOb	X		Applicable. Reciprocating compressors that commenced construction, reconstruction, or modification after December 6, 2022 and are not located at a well site are subject to this rule. Pioneer will comply with this rule, as applicable, for centralized production facilities. Process controllers that commenced construction, reconstruction, or modification after December 6, 2022 are subject to this rule. Pioneer will comply with these requirements, as applicable. Tank batteries that commenced construction, reconstruction, or modification after December 6, 2022 with potential to emit more than six (6) tons of VOC per year or more than twenty (20) tons of methane per year are subject to the rule. Per §60.5370b(a)(2)(i), Pioneer will evaluate actual emissions in the proceeding 30 days after startup, reconstruction, or modification to determine if compliance with §60.5370b(a)(3)(i) is applicable. Pioneer will comply with these requirements, and any associated control device requirements, as applicable. Pneumatic pumps that commenced construction, reconstruction, or modification after December 6, 2022 are subject to this rule. Pioneer will comply with this regulation, as applicable. Collection of fugitive emissions components at well sites and compressor stations that commenced construction, modification, or reconstruction after December 6, 2022 are also subject to the leak detection and repair requirements listed under this rule. Pioneer will comply, as applicable.
MACT Subpart ZZZZ	X		Applicable. The Site has one (1) stationary spark ignition internal combustion engine. The Site will comply with the requirements of this subpart by complying with applicable requirements listed under NSPS Subpart JJJJ. No further requirements apply under this subpart.

SITE INFORMATION

What is the Natural Gas Throughput?	8	MMSCF/day
What is the Oil/Condensate Throughput?	8,500	bbl/day
What is the Produced Water Throughput?	31,000	bbl/day
Site specific H2S content of inlet gas (ppm)	23	ppm
If sour, provide distance (ft.) to nearest off property receptor.	3,615	ft.

TECHNICAL REVIEW: Oil and Gas Checklist

Permit No.:	172690	***Company Name:***	Pioneer Natural Resources USA, Inc.	***APD Reviewer:***	Ms. Briannah Spooner
Project No.:	386682	***Unit Name:***	Houston Ranch 35-8h Tank Battery	***SP No(s).:***	6002 - 116.620 PRE 2011-FEB-27

FACILITY INFORMATION		
Equipment:	**# of each**	**Calculation Methodology**
Compressor Engines	1	NSPS JJJJ (VOC, NOx, CO) AP-42 (PM, SO2) Manufacturer (CH2O)
Storage Tanks	3 oil, 3 water	ProMax
Heater Treaters	2	AP-42 Table 1.4-2
Flares / Combustion Control Devices	2	AP-42, Section 5.2
VRUs	Y	ProMax
Separators	Y	--
Truck Loading	Y	AP-42, Section 5.2; ProMax
Fugitives	Y	TCEQ Guidance
MSS	N	MSS emissions claimed under 106.359

CONTROL DEVICE(S)				
VRU	Runtime*:	100%	Controls what?	Storage tanks
	Capture Efficiency:	100%		
	Justification:	*At least two (2) VRUs will be on site at all times and additional VRUs will be placed on site on an as-needed basis. In each case, one (1) of the VRUs acts as a backup during downtime. It is assumed that when one (1) VRU is down for maintenance, vapors will be routed to the backup VRU. Therefore, tank emissions will be controlled during 100% of the year at 100% capture efficiency due to the multiple VRUs on site. • Mechanical VRU (mVRU) designed to capture vapors; • Sensing equipment that will allow the operator to verify proper functioning; • Redundant equipment to confirm proper functioning; • Proper rerouting equipment as described in the guidance; • Blanket gas system to ensure no oxygen enters the system; • Compressor capable of recovering both wet and dry gas that responds as needed to varying conditions; and • Proper continuous monitoring and recordkeeping.		
Flare (FL1)	Destruction Efficiency:	98%	Controls what?	Loading operations
Flare (AOS-FL1)	Destruction Efficiency:	98%	Controls what?	AOS, pilot

ENGINE

Engine Identifier (EPN / name)	**HP**	**Hrs of Opr/ yr**	**Fuel Consum. (Btu/hp-hr)**	**Rich or Lean Burn**	**2 or 4 stk**	**Vendor Data Sheet Included?**	**Emission Factor / Origin of Emission Factor**						**Type of Control Devices**
							VOC	**NO_x**	**CO**	**SO_2**	**$PM/PM_{10}/PM_{2.5}$**	**CH_2O**	
ENG1	600	8760	7549	Rich	4	Yes	0.7000 g/hp-hr NSPS JJJJ	2.0000 g/hp-hr NSPS JJJJ	1.0000 g/hp-hr NSPS JJJJ	0.000588 lb/MMBtu AP-42	0.0194100 lb/MMBtu AP-42	0.1000 g/hp-hr Manufacturer	NSCR Catalyst

Does NSPS, Subpart JJJJ apply?	Yes	**Why or why not? If yes, how will requirements be met?**	Engine manufacture date: EPN ENG1: 09/19/2019
Does MACT, Subpart ZZZZ apply?	Yes	**Why or why not? If yes, how will requirements be met?**	The site will meet the HAP emission limits and the requirements of NSPS JJJJ.

ENGINE INFORMATION	**YES**	**NO**	**COMMENTS**
Was NOx/NAAQs compliance demonstrated?	X		NOx Screen3

TECHNICAL REVIEW: Oil and Gas Checklist

Permit No.:	172690	***Company Name:***	Pioneer Natural Resources USA, Inc.	***APD Reviewer:***	Ms. Briannah Spooner
Project No.:	386682	***Unit Name:***	Houston Ranch 35-8h Tank Battery	***SP No(s).:***	6002 - 116.620 PRE 2011-FEB-27

HCHO included in VOC total?		X	
Was a Catalyst Used?	X		NSCR Catalyst

261/262 Emission Limits (D=3615, K=8)

Chemical	Applicable paragraph of 261/262	L, mg/m^3	Emission Limit (E = L/K), lb/hr	Emission Limit tpy	Actual Emissions lb/hr	Actual Emissions tpy
Hydrogen Sulfide	106.262	10.0	1.25	5.00	0.0015	0.0006
Propane (C3)	106.261(a)(2)	--	6.00	10.00	5.7687	2.5007
Butanes (C4)	106.261(a)(2)	--	6.00	10.00	3.2318	1.4487
Pentanes (C5)	106.262(a)(2)	350.0	6.00	5.00	1.6339	0.7459
Hexanes (C6)	106.262(a)(2)	176.0	6.00	5.00	1.2266	0.5914
Heptanes (C7)	106.262(a)(2)	350.0	6.00	5.00	0.2208	0.1276
Octanes (C8)	106.262(a)(2)	350.0	6.00	5.00	0.2307	0.1425
Nonanes (C9)	106.261(a)(2)	--	6.00	10.00	0.0415	0.0633
n-Decane (C10)	106.261(a)(3)	--	1.00	4.38	0.0148	0.0647
Undecanes (C11)	106.261(a)(3)	--	1.00	4.38	0.0131	0.0574
Dodecane	106.261(a)(3)	--	1.00	4.38	0.0107	0.0469
Tridecane	106.261(a)(3)	--	1.00	4.38	0.0117	0.0513
Tetradecane	106.261(a)(3)	--	1.00	4.38	0.0105	0.0458
Pentadecane	106.261(a)(3)	--	1.00	4.38	0.0094	0.0410
Hexadecane	106.261(a)(3)	--	1.00	4.38	0.0075	0.0327
Heptadecane	106.261(a)(3)	--	1.00	4.38	0.0068	0.0296
Octadecane	106.261(a)(3)	--	1.00	4.38	0.0067	0.0294
Nonadecane	106.261(a)(3)	--	1.00	4.38	0.0068	0.0298
Eicosane	106.261(a)(3)	--	1.00	4.38	0.0053	0.0233
Heneicosane	106.261(a)(3)	--	1.00	4.38	0.0046	0.0203
Docosane	106.261(a)(3)	--	1.00	4.38	0.0045	0.0195
Tricosane	106.261(a)(3)	--	1.00	4.38	0.0040	0.0177
Tetracosane	106.261(a)(3)	--	1.00	4.38	0.0037	0.0161
Pentacosane	106.261(a)(3)	--	1.00	4.38	0.0034	0.0147
Hexacosane	106.261(a)(3)	--	1.00	4.38	0.0029	0.0128
Heptacosane	106.261(a)(3)	--	1.00	4.38	0.0032	0.0139
Octacosane	106.261(a)(3)	--	1.00	4.38	0.0027	0.0119
Nonacosane	106.261(a)(3)	--	1.00	4.38	0.0027	0.0119
Triacontane	106.261(a)(3)	--	1.00	4.38	0.0633	0.2773
Benzene	106.262(a)(2)	3.0	0.38	1.64	0.1495	0.0643
Toluene	106.262(a)(2)	188.0	6.00	5.00	0.1082	0.0607
Ethylbenzene	106.262(a)(2)	434.0	6.00	5.00	0.0237	0.0208
Xylenes	106.262(a)(2)	434.0	6.00	5.00	0.0197	0.0182
				Total H_2S Emissions:	**0.0015**	**0.0006**
				Total VOC Emissions:	**12.8534**	**6.6521**

*Note: Project increases only

MAXIMUM ALLOWABLE EMISSION RATES TABLE (MAERT)

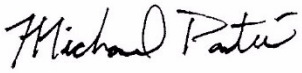
EPN / Emission Source	VOC		NOx		CO		PM/PM$_{10/2.5}$		SO_2		H_2S		CH_2O	
	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
New Emissions														
HT2 / Heater Treater 2	0.01	0.04	0.18	0.77	0.15	0.65	0.01	0.06	<0.01	0.01	--	--	<0.01	<0.01
Revised Emissions														
FUG / Site Fugitives	2.40	10.50	--	--	--	--	--	--	--	--	<0.01	<0.01	--	--

TECHNICAL REVIEW: Oil and Gas Checklist

Permit No.:	172690	***Company Name:***	Pioneer Natural Resources USA, Inc.	***APD Reviewer:***	Ms. Briannah Spooner
Project No.:	386682	***Unit Name:***	Houston Ranch 35-8h Tank Battery	***SP No(s).:***	6002 - 116.620 PRE 2011-FEB-27

LOAD1 / Uncaptured Oil Loading	0.52	1.96	--	--	--	--	--	--	--	--	<0.01	<0.01	--	--
LOAD2 / Uncaptured Water Loading	0.02	0.01	--	--	--	--	--	--	--	--	<0.01	<0.01	--	--
FL1 / Flare	0.68	2.53	0.31	0.92	0.62	1.83	0.01	0.03	0.03	0.03	<0.01	<0.01	--	--
AOS-FL1 / AOS Flare Operations	48.55	12.14	34.05	8.51	67.98	17.00	1.66	0.41	0.59	0.15	0.01	<0.01	--	--
Unchanged Emissions														
HT1 / Heater Treater 1	0.01	0.04	0.18	0.77	0.15	0.65	0.01	0.06	<0.01	0.01	--	--	<0.01	<0.01
ENG1 / Compressor Engine 1	1.06	4.64	1.32	5.79	2.65	11.59	0.09	0.39	<0.01	0.01	--	--	0.13	0.58
TOTAL EMISSIONS (TPY):	**--**	**31.86**	**--**	**16.76**	**--**	**31.72**	**--**	**0.95**	**--**	**0.21**	**--**	**<0.01**	**--**	**0.58**
MAXIMUM OPERATING SCHEDULE:												**Hours/Year:**	**8,760**	

*Note: Formaldehyde is not included in VOC emissions

	TECHNICAL REVIEWER	PEER REVIEWER	FINAL REVIEWER
SIGNATURE:			
PRINTED NAME:	Ms. Briannah Spooner	Trishia McDonald, Team Leader	Michael Partee, Manager
DATE:	12/30/2024	12/30/2024	12/30/2024