

September 5, 2024

VIA STEERS

To: Texas Commission on Environmental Quality

Re: Pioneer Natural Resources USA, Inc.
CN600130447
RN109002410
Permit #138455
APD-CERT Submittal
Pembrook 131 Satellite

Dear APIRT:

On behalf of Pioneer Natural Resources USA, Inc. (Pioneer), Altamira is submitting this APD-CERT for the Pembrook 131 Satellite (Facility). This APD-CERT is being submitted to certify normal operation Facility emissions which have been updated to reflect the current Facility production volumes. Maintenance, start-up, and shutdown emissions are being claimed under 30 TAC §106.359 and are not being certified with this submittal.

If you have any questions concerning the submittal or wish to discuss the information provided with this letter, please contact Andres Tellez at Andres.Tellez@pxd.com or (972) 975-2561 or Zachary Crowell at Zachary.Crowell@altamira-us.com or (405) 702-1598.

Sincerely,
Altamira-US, LLC

Zachary Crowell
Program Manager

1. Introduction

Pioneer Natural Resources USA, Inc. (Pioneer) owns and operates the Pembroke 131 Satellite (Facility) located in Upton County. The purpose of this APD-CERT submittal is to certify normal operation emissions which have been updated to reflect the following change:

- Update production volumes to align with current operations.

Maintenance, start-up, and shutdown (MSS) emissions are being claimed under 30 TAC §106.359 and are not being certified with this submittal.

The following required documents for the APD-CERT application are located following the application:

1. Existing registered permit for the Facility
2. List of each source of air emissions at the site and summary of the certified emission rates
3. Driving directions to the Facility

2. Process Description

A mixture of oil and entrained gas enters the Facility through a two-phase separator where the gas phase is separated from the liquid phases. Gas is sent off-site via pipeline while oil and water are sent to same storage tank. Oil and water are sent off-site via pipeline. Working, breathing, and flash emissions from the storage tank are vented to the atmosphere. MSS emissions are included in the application.

Storage tank is not subject to OOOO due to the facility being constructed before August 23, 2011.

Storage tank is not subject to OOOOa due to the facility being constructed before September 18, 2015.

3. Equipment Description

The Facility consists of one (1) two-phase separator, one (1) storage tank, and one (1) open top tank. Further equipment descriptions are provided below.

Separators

There is one (1) two-phase separator located at the Facility to separate the gas from the liquids. The gas is sent off-site via pipeline. The liquids go to the on-site storage tank.

Tanks

The Facility has one (1) 500 bbl storage tank. Oil and water are held in the same tank. Working, breathing, and flash emissions from the storage tank are vented to the atmosphere. Oil and water are sent off-site via pipeline. The calculations are based on a representative sample from a site with a similar equipment set up, operation, and formation.

The Facility has one (1) 210 bbl open-top tank available in case an unexpected upset condition occurs. No emissions are expected from this tank during normal operations and no emission calculations for the open-top tank is in the application.

Fugitives

Fugitive emissions were based on a representative gas sample that is from a site with a similar equipment setup, operation, and formation.

MSS Activities

MSS emissions may occur due to miscellaneous activities. Emission calculations from MSS activities are based on default values from TCEQ guidance.

**Texas Commission on Environmental Quality
Form APD – CERT
Certification of Emission Limits
(Page 1)**

I. Company and Site Information	
A.	Company Name: Pioneer Natural Resources USA, Inc
B.	Responsible Official Name: Matt Mathis
	Responsible Official's Title: VP, Production Opeartions
	Mailing Address: 3617 N. Big Spring Street
	City: Midland
	County: Midland
	State: Texas
	ZIP Code: 79705
	Telephone: 432-571-3105
	Fax: N/A
	Email Address: Matt.Mathis@pxd.com
C.	Site Name: Pembroke 131 Satellite
	Street Address: <i>(if different from above)</i>
	If "NO" street address describe the physical location with driving directions:
	FROM TX 349 AND FM 1555 HEAD SE ON FM 1555 E TOWARD FM 15555 E 8.5 MI TURN L ONTO FM RD 2594 RR 2594 4.6 MI TURN R
	DESTINATION WILL BE ON THE L 0.5 MI
	City or nearest city: Midkiff
	County: Upton
	ZIP Code: 79755
D.	TCEQ Account Identification Number <i>(leave blank if unknown)</i> :
E.	TCEQ Customer Reference Number <i>(leave blank if unknown)</i> : CN600130447
	TCEQ Regulated Entity Number <i>(leave blank if unknown)</i> : RN109002410
F.	Does the site have a Title V Permit? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
G.	Title V Permit Number:
H.	Is this a small business? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
II. Attach the Following Documentations	
A.	Copies of a previously completed Form PI-7 and all supporting documentation <i>(if applicable)</i> .
B.	A list of each source of air emissions at the site.
C.	A summary of the certified emission rates.
D.	A process description.

Texas Commission on Environmental Quality
Form APD – CERT
Certification of Emission Limits
(Page 2)

III. Maintain Records On Site to Demonstrate Continuing Compliance and Make the Records Available on Request
<p>The emission rates listed on the certification shall reflect the certified emissions for the stationary sources at the site. The records demonstrating compliance with this certification must comply with applicable rules and must be maintained at the site or, for sites that normally operate unattended, at an office within Texas having day-to-day operational control of the site. Records must be kept for at least five years and must be made available upon request. For more information regarding records for permits by rule, see 30 TAC § 106.8, Recordkeeping.</p>
IV. Purpose of this Certification <i>(choose and complete all that are appropriate)</i>
<p>This certification is intended to establish emission rates below state and federal rule thresholds and triggers for:</p>
<input checked="" type="checkbox"/> 30 TAC § 106.4 for Permits by Rule
<input checked="" type="checkbox"/> Permit by Rule Number: 138455
<input type="checkbox"/> HRVOC Emissions Cap and Trade Program
<input type="checkbox"/> Emissions Banking and Trading Program (other than HRVOC)
<input type="checkbox"/> 30 TAC Chapter 115 for Volatile Organic Compounds
<input type="checkbox"/> 30 TAC Chapter 117 for Nitrogen Oxides
<input type="checkbox"/> 40 CFR Part 60, Subpart:
<input type="checkbox"/> 40 CFR Part 61, Subpart:
<input type="checkbox"/> 40 CFR Part 63, Subpart:
<input type="checkbox"/> Title V Permit Major Source Applicability
<input type="checkbox"/> Other:

Texas Commission on Environmental Quality
Form APD – CERT
Certification of Emission Limits
(Page 3)

V. Certification by Responsible Official
All representations in this certification of emissions are conditions upon which the stationary source shall operate. This certification reflects the maximum emission rates for the operation of this facility. The facility will operate in compliance with all regulations of the Texas Commission on Environmental Quality and with Federal U.S. Environmental Protection Agency regulations governing air pollution. It shall be unlawful for any person to vary from such representation unless the certification is first revised. The signature below indicates that, based on information and belief formed after reasonable inquiry, the statements, and information contained in the attached documents are true, accurate, and complete.
Name: Matt Mathis
Title: VP, Production Operations
Original Signature Required:
Date:

Reminder: The original of this certification must be sent to the TCEQ through ePermits. A copy must also be maintained on site or, for sites that normally operate unattended, at an office within Texas having day-to-day operational control of the site.

Texas Commission on Environmental Quality
Form APD - CERT
Certification of Emission Limits

EMISSION RATE DATA									
FIN	Facility Name	EPN	Point Name	Authorization Type	Authorization Date	Permit or Registration Number (if applicable)	Air Contaminant Name	Maximum Certified Emission Rates	
								lb/hr	T/yr
TANK1	Storage Tank (500-bbl)	TANK1	Storage Tank (500-bbl)	PBR	1/30/2024	138455	VOC	2.03	8.90
FUGITIVES	Fugitive Emissions	FUGITIVES	Fugitive Emissions	PBR	1/30/2024	138455	VOC	0.35	1.55
						Emission Totals:	NOx	-	0.00
							CO	-	0.00
							VOC	-	10.45
							SO₂	-	0.00
							PM₁₀	-	0.00

Jon Niermann, *Chairman*
Emily Lindley, *Commissioner*
Bobby Janecka, *Commissioner*
Kelly Keel, *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 30, 2024

Re: Mr. Matt Mathis
Project Description/Unit: Pembroke Unit Ss 131 Xbc 131 1317 134 1347 142 1424
Regulated Entity Number: RN109002410
Customer Reference Number: CN600130447

This is an acknowledgement that Pioneer Natural Resources USA, Inc. has submitted a form APD-CERT to certify emissions for the Pembroke Unit Ss 131 Xbc 131 1317 134 1347 142 1424, Midkiff, Upton County. The purpose of this certification is to establish enforceable emission rates below state and federal rule thresholds and triggers. The company is held to their certified hourly and annual emission rates and must revise the certification if the facilities exceed the certified thresholds.

Be advised that no review has been done by the TCEQ to verify that the certified emission rates are accurate. If a complete technical review is preferred, please submit the proper registration form, PI-7-CERT, and the appropriate fees to receive a response in writing by the TCEQ.

As a reminder, regardless of the authorization mechanism, all facilities must be in compliance and operate in accordance with all rules and regulations of the TCEQ and the U.S. Environmental Protection Agency. Records must be maintained in accordance with 30 Texas Administrative Code § 106.8.

This action is taken under authority delegated by the Executive Director of the TCEQ. If you need further information or have questions, please contact the Rule Registrations Section at (512) 239-1250 or write to the Texas Commission on Environmental Quality, Office of Air, Air Permits Division, MC-163, P.O. Box 13087, Austin, Texas 78711-3087.

Sincerely,

A handwritten signature in black ink that reads "Michael Partee".

Michael Partee, Manager

Rule Registrations Section

Air Permits Division

Texas Commission on Environmental Quality

APD CERT Table

Regulated Entity Number	Account Number	Renewal Date	Permit/Registration Number	Permittee name
RN109002410		NA	138455	Pioneer Natural Resources USA, Inc.

SUMMARY TABLE

ESTIMATED EMISSIONS															
EPN/Emission Source	Specific VOC or Other Pollutants	VOC		NO _x		CO		PM ₁₀		PM _{2.5}		SO ₂		Formaldehyde	
		lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy	lbs/hr	tpy
Registered Sources															
TANK1 / Storage Tank (500-bbl)		2.03	8.90	--	--	--	--	--	--	--	--	--	--	--	--
FUGITIVES / Fugitive Emissions		0.35	1.55	--	--	--	--	--	--	--	--	--	--	--	--
Sources Claimed Under 106.359															
MSS / MSS Activities		0.06	0.25	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL EMISSIONS (TPY):			10.70		0.00		0.00		0.00		0.00		<0.01		<0.01
MAXIMUM OPERATING SCHEDULE:		Hours/Day			24	Days/Week			7	Weeks/Year		52	Hours/Year		8760

ATTACHMENT 2

**POTENTIAL EMISSIONS
STORAGE TANKS (TANK1)
PEMBROOK 131 SATELLITE
PIONEER NATURAL RESOURCES USA, INC.
UPTON COUNTY**

Source	EPN	Annual Throughput ¹ (gallons/year)	Tank Capacity (gallons)	Potential VOC Emissions			
				Annual Working & Breathing Losses ² (T/yr)	Annual Flash Losses ³ (T/yr)	Total Uncontrolled Emissions	
						(lb/hr)	(T/yr)
Storage Tank (500-bbl)	TANK1	1,992,900	21,000	0.18	8.72	2.03	8.90

Notes:

1. Based on maximum annual oil throughput value of 10,950-bbl/yr and maximum annual produced water throughput value of 36,500-bbl/yr.
2. Annual breathing and working losses were determined using Promax simulation
3. Annual flash emissions from the storage tanks were determined using ProMax simulation.

$$\text{Uncontrolled Emissions (T/yr)} = \text{Breathing Losses (T/yr)} + \text{Working Losses (T/yr)} + \text{Flash Emissions (T/yr)}$$

ATTACHMENT 3

TABLE 1

**POTENTIAL EMISSIONS
SITEWIDE FUGITIVES (FUGITIVES)
PEMBROOK 131 SATELLITE
PIONEER NATURAL RESOURCES USA, INC.
UPTON COUNTY**

Component Type	Type of Service	Estimated Equipment At Site ¹	Emission Factor lb/hr/component ²	% VOC ³	VOC Emissions	
					(lb/hr)	(T/yr)
Flanges	Gas	104	0.000860	33.82%	0.03	0.13
	Light Oil	61	0.000243	99.33%	0.01	0.06
	Water/Oil	126	0.000006	99.33%	0.001	0.003
Valves	Gas	39	0.009920	33.82%	0.13	0.57
	Light Oil	15	0.005500	99.33%	0.08	0.36
	Water/Oil	19	0.000216	99.33%	0.004	0.02
Relief Valves	Gas	3	0.019400	33.82%	0.02	0.09
Connectors	Gas	36	0.000440	33.82%	0.01	0.02
	Light Oil	4	0.000463	99.33%	0.002	0.01
	Water/Oil	61	0.000243	99.33%	0.01	0.06
Other	Light Oil	3	0.016500	99.33%	0.05	0.22
Total Component Count		471	Total VOC		0.35	1.55

Notes:

1. Number of each component and type of service estimated based on a similar site.
2. Emission factors based on EPA's oil and gas production operations factors for process piping fugitive emissions.
3. Percent VOC based on a representative oil and gas samples (refer to Attachment 3, Table 2 and 3).

**ATTACHMENT 3
TABLE 2**

**GAS ANALYSIS
PEMBROOK 131 SATELLITE
PIONEER NATURAL RESOURCES USA, INC.
UPTON COUNTY**

Component	Molecular Weight	Mole % ¹	lb/100 mole	Wt % Total	Wt % Hydrocarbon	Wt % VOC ²
Hydrogen Sulfide	34.08	0.0023%	0.001	0.003%	--	--
Water	18.01	0.000%	0.00	0.00%	--	--
Nitrogen	28.01	1.646%	0.46	1.98%	--	--
Carbon Dioxide	44.01	0.492%	0.22	0.93%	--	--
Methane	16.04	74.269%	11.91	51.04%	51.04%	--
Ethane	30.07	10.262%	3.09	13.22%	13.22%	--
Propane	44.10	6.585%	2.90	12.44%	12.44%	12.81%
i-Butane	58.12	0.872%	0.51	2.17%	2.17%	2.24%
n-Butane	58.12	2.616%	1.52	6.51%	6.51%	6.71%
i-Pentane	72.15	0.725%	0.52	2.24%	2.24%	2.31%
n-Pentane	72.15	0.807%	0.58	2.49%	2.49%	2.57%
Other Hexanes	86.17	0.583%	0.50	2.15%	2.15%	2.22%
Heptanes	100.20	0.645%	0.65	2.77%	2.77%	2.85%
Octanes+	114.23	0.180%	0.21	0.88%	0.88%	0.91%
Benzene	78.11	0.025%	0.02	0.08%	0.08%	0.09%
Toluene	92.14	0.024%	0.02	0.09%	0.09%	0.10%
Ethylbenzene	106.17	0.004%	0.004	0.02%	0.02%	0.02%
Xylenes	106.17	0.007%	0.01	0.03%	0.03%	0.03%
n-Hexane	86.17	0.257%	0.22	0.95%	0.95%	0.98%
Total	--	100.00%	23.34	100.00%	97.10%	33.82%

Notes:

1. Representative gas analysis and extended HAPs based on a sample taken 6/22/2022.
2. Wt % VOC is the VOC % in the hydrocarbon portion of the gas.

**ATTACHMENT 3
TABLE 3**

**LIQUID ANALYSIS
PEMBROOK 131 SATELLITE
PIONEER NATURAL RESOURCES USA, INC.
UPTON COUNTY**

Component	Molecular Weight	Mole % ¹	lb/100 mole	Wt % Total	Wt % Hydrocarbon	Wt % VOC ²
Hydrogen Sulfide	34.08	0.000%	0.00	0.00%	--	--
Water	18.01	0.000%	0.00	0.00%	--	--
Nitrogen	28.01	0.059%	0.02	0.02%	--	--
Carbon Dioxide	44.01	0.034%	0.01	0.01%	--	--
Methane	16.04	1.695%	0.27	0.27%	0.27%	--
Ethane	30.07	1.350%	0.41	0.40%	0.40%	--
Propane	44.10	2.772%	1.22	1.21%	1.21%	1.21%
i-Butane	58.12	0.784%	0.46	0.45%	0.45%	0.45%
n-Butane	58.12	3.296%	1.92	1.89%	1.89%	1.89%
i-Pentane	72.15	2.171%	1.57	1.55%	1.55%	1.55%
n-Pentane	72.15	3.044%	2.20	2.17%	2.17%	2.17%
Other Hexanes	86.17	3.404%	2.93	2.90%	2.90%	2.90%
Heptanes	100.20	10.802%	10.82	10.69%	10.69%	10.70%
Octanes+	114.23	64.662%	73.86	72.98%	72.98%	73.00%
Benzene	78.11	0.254%	0.20	0.20%	0.20%	0.20%
Toluene	92.14	1.075%	0.99	0.98%	0.98%	0.98%
Ethylbenzene	106.17	0.808%	0.86	0.85%	0.85%	0.85%
Xylenes	106.17	1.091%	1.16	1.14%	1.14%	1.14%
n-Hexane	86.17	2.699%	2.33	2.30%	2.30%	2.30%
Total	--	100.00%	101.22	100.00%	99.97%	99.33%

Notes:

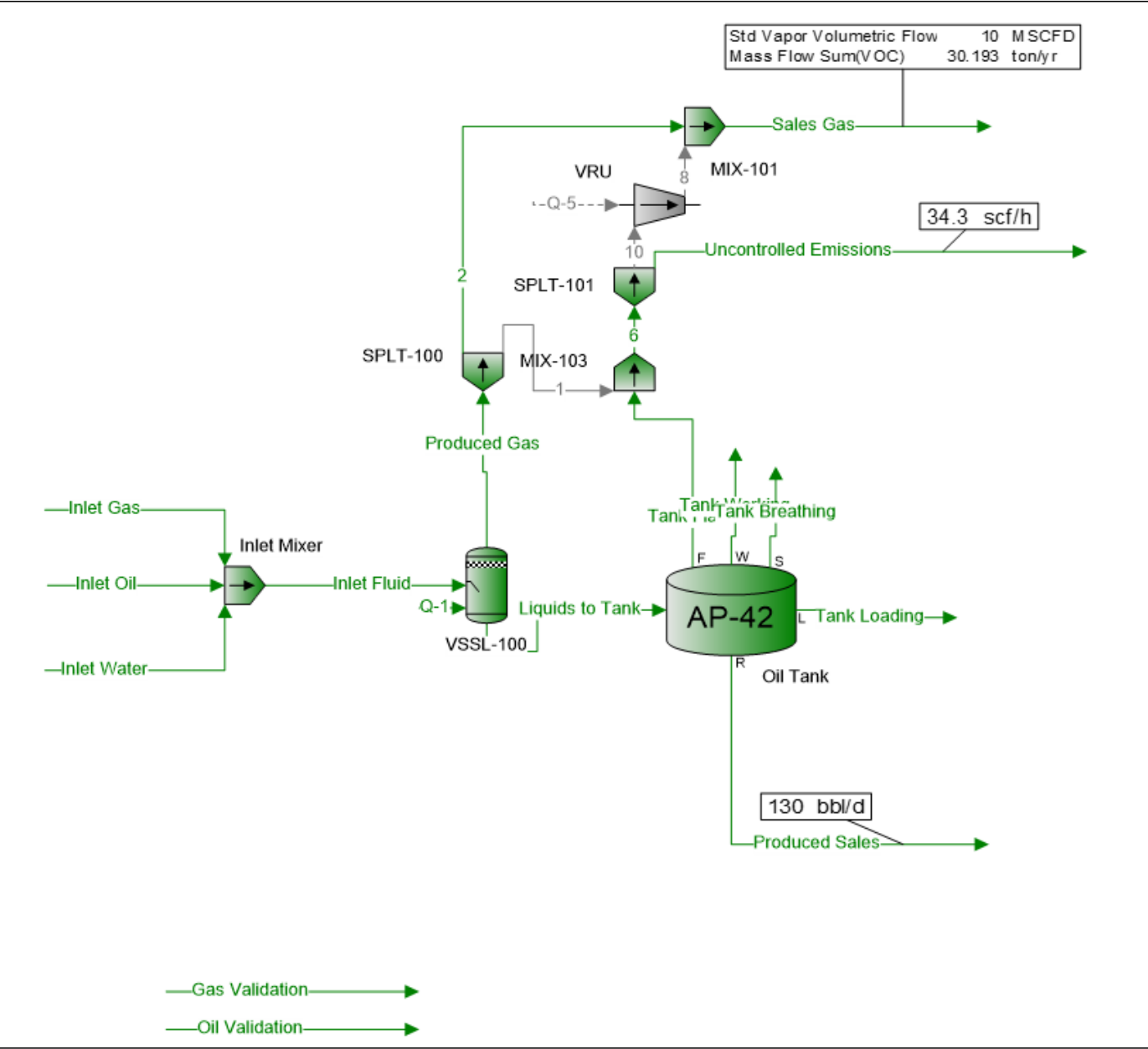
1. Representative liquid analysis and extended HAPs based on a sample taken 6/12/2022.
2. Wt % VOC is the VOC % in the hydrocarbon portion of the gas.

**ATTACHMENT 4
 POTENTIAL EMISSIONS FROM MSS ACTIVITIES (MSS)
 PEMBROOK 131 SATELLITE
 PIONEER NATURAL RESOURCES USA, INC.
 UPTON COUNTY**

Summary of MSS Activities		
Activity	VOC¹	
	(lb/hr)	(T/yr)
Engine, compressor, turbine and other combustion facilities maintenance	0.06	0.25
Repair, adjustment, calibration, lubrication and cleaning of site process equipment		
Replacement of piping components, pneumatic controllers, boiler refractories, wet and dry seals, meters, instruments, analyzers, screens and filters		
Turbine or engine component swaps		
Piping used to bypass a facility during maintenance		
30 TAC 106.359(b)(6): "Planned MSS activities with the same character and quantity as those listed above.		
Total =	0.06	0.25

Notes:

1. Defaults from TCEQ emissions spreadsheet.



Tank Characteristics		
Tank Geometry	Vertical Cylinder	
Shell Length	16	ft
Shell Diameter	15.5	ft
Number of Storage Tanks	1	
Maximum Fraction Fill of Tank	90 %	
Average Fraction Fill of Tank	50 %	
Minimum Fraction Fill of Tank	10 %	
Material Category	Light Organics	
Insulation	Uninsulated	
Bolted or Riveted Construction?	<input type="checkbox"/>	
Vapor Balanced Tank?	<input type="checkbox"/>	
Known Sum of Increases in Liquid Level?	<input type="checkbox"/>	
Sum of Increases in Liquid Level	1413.03	ft/yr
Paint Characteristics		
Shell Color	Tan	
Shell Paint Condition	Average	
Roof Color	Tan	
Roof Paint Condition	Average	
Roof Characteristics		
Roof Type	Cone	
Slope of Coned Roof	0.0625	
Radius of Domed Roof	ft	
Breather Vent Settings		
Breather Vent Pressure	0.03 psi	
Breather Vacuum Pressure	-0.03 psi	
Operating Pressure	13.26 psia	
Tank Conditions		
Location	Midland, TX	
Time Frame	Year	
Known Liquid Bulk Temperature?	<input type="checkbox"/>	
Liquid Bulk Temperature	66.5461 °F	
Use AP 42 Raoult's Vapor Pressure?	<input checked="" type="checkbox"/>	
Flashing Temperature	77.5152 °F	
Average Daily Maximum Ambient Temperature	76.7 °F	
Average Daily Minimum Ambient Temperature	51.4 °F	
Atmospheric Pressure at Tank Location	13.26 psia	
Daily Solar Insolation	1698 Btu/(day*ft^2)	
Average Wind Speed	11 mph	
Component Subset	VOCs	
	Total Emissions	Emissions per Tank
	ton/yr	ton/yr
Flashing Losses	8.72406	8.72406
Working and Standing Losses	0.180508	0.180508
Working Losses	0.159006	0.159006
Standing Losses	0.0215016	0.0215016
Loading Losses	0.13075	0.13075

July 2, 2022

FESCO, Ltd.
1100 Fesco Ave. - Alice, Texas 78332

For: Pioneer Natural Resources
777 Hidden Ridge
Irving, Texas 75038

Sample: Jack Garner Tank Battery
First Stage Separator
Spot Gas Sample @ 62 psig & 104 °F

Date Sampled: 06/22/2022

Job Number: 222442.001

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286

COMPONENT	MOL%	GPM
Hydrogen Sulfide*	0.001	
Nitrogen	1.646	
Carbon Dioxide	0.492	
Methane	74.269	
Ethane	10.262	2.741
Propane	6.585	1.812
Isobutane	0.872	0.285
n-Butane	2.610	0.822
2-2 Dimethylpropane	0.006	0.002
Isopentane	0.725	0.265
n-Pentane	0.807	0.292
Hexanes	0.702	0.289
Heptanes Plus	<u>1.023</u>	<u>0.419</u>
Totals	100.000	6.926

Computed Real Characteristics Of Heptanes Plus:

Specific Gravity ----- 3.354 (Air=1)
Molecular Weight ----- 96.71
Gross Heating Value ----- 5124 BTU/CF

Computed Real Characteristics Of Total Sample:

Specific Gravity ----- 0.808 (Air=1)
Compressibility (Z) ----- 0.9955
Molecular Weight ----- 23.31
Gross Heating Value
Dry Basis ----- 1360 BTU/CF
Saturated Basis ----- 1337 BTU/CF

*Hydrogen Sulfide tested on location by: Stain Tube Method (GPA 2377)
Results: 0.629 Gr/100 CF, 10.0 PPMV or 0.001 Mol %

Base Conditions: 14.650 PSI & 60 Deg F

Sampled By: (16) RG
Analyst: KV
Processor: KV
Cylinder ID: T-3918

Certified: FESCO, Ltd. - Alice, Texas

Conan Pierce 361-661-7015

**CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2286
TOTAL REPORT**

COMPONENT	MOL %	GPM	WT %
Hydrogen Sulfide*	0.001		0.001
Nitrogen	1.646		1.978
Carbon Dioxide	0.492		0.929
Methane	74.269		51.116
Ethane	10.262	2.741	13.238
Propane	6.585	1.812	12.457
Isobutane	0.872	0.285	2.174
n-Butane	2.610	0.822	6.508
2,2 Dimethylpropane	0.006	0.002	0.019
Isopentane	0.725	0.265	2.244
n-Pentane	0.807	0.292	2.498
2,2 Dimethylbutane	0.008	0.003	0.030
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.095	0.039	0.351
2 Methylpentane	0.207	0.086	0.765
3 Methylpentane	0.135	0.055	0.499
n-Hexane	0.257	0.106	0.950
Methylcyclopentane	0.202	0.071	0.729
Benzene	0.025	0.007	0.084
Cyclohexane	0.138	0.047	0.498
2-Methylhexane	0.033	0.015	0.142
3-Methylhexane	0.044	0.020	0.189
2,2,4 Trimethylpentane	0.000	0.000	0.000
Other C7's	0.173	0.075	0.736
n-Heptane	0.075	0.035	0.322
Methylcyclohexane	0.118	0.047	0.497
Toluene	0.024	0.008	0.095
Other C8's	0.108	0.050	0.511
n-Octane	0.022	0.011	0.108
Ethylbenzene	0.004	0.002	0.018
M & P Xylenes	0.006	0.002	0.027
O-Xylene	0.001	0.000	0.005
Other C9's	0.033	0.017	0.179
n-Nonane	0.004	0.002	0.022
Other C10's	0.008	0.005	0.048
n-Decane	0.001	0.001	0.006
Undecanes (11)	<u>0.004</u>	<u>0.003</u>	<u>0.027</u>
Totals	100.000	6.926	100.000

Computed Real Characteristics of Total Sample

Specific Gravity -----	0.808	(Air=1)
Compressibility (Z) -----	0.9955	
Molecular Weight -----	23.31	
Gross Heating Value		
Dry Basis -----	1360	BTU/CF
Saturated Basis -----	1337	BTU/CF

July 2, 2022

FESCO, Ltd.
1100 Fesco Ave. - Alice, Texas 78332

Sample: Jack Garner Tank Battery
First Stage Separator
Spot Gas Sample @ 62 psig & 104 °F

Date Sampled: 06/22/2022

Job Number: 222442.001

GLYCALC FORMAT

COMPONENT	MOL%	GPM	Wt %
Carbon Dioxide	0.492		0.929
Hydrogen Sulfide	0.001		0.001
Nitrogen	1.646		1.978
Methane	74.269		51.116
Ethane	10.262	2.741	13.238
Propane	6.585	1.812	12.457
Isobutane	0.872	0.285	2.174
n-Butane	2.616	0.824	6.527
Isopentane	0.725	0.265	2.244
n-Pentane	0.807	0.292	2.498
Cyclopentane	0.000	0.000	0.000
n-Hexane	0.257	0.106	0.950
Cyclohexane	0.138	0.047	0.498
Other C6's	0.445	0.183	1.645
Heptanes	0.527	0.217	2.118
Methylcyclohexane	0.118	0.047	0.497
2,2,4 Trimethylpentane	0.000	0.000	0.000
Benzene	0.025	0.007	0.084
Toluene	0.024	0.008	0.095
Ethylbenzene	0.004	0.002	0.018
Xylenes	0.007	0.003	0.032
Octanes Plus	0.180	0.088	0.901
Totals	100.000	6.926	100.000

Real Characteristics Of Octanes Plus:

Specific Gravity ----- 4.047 (Air=1)
Molecular Weight ----- 116.71
Gross Heating Value ----- 5953 BTU/CF

Real Characteristics Of Total Sample:

Specific Gravity ----- 0.808 (Air=1)
Compressibility (Z) ----- 0.9955
Molecular Weight ----- 23.31
Gross Heating Value
Dry Basis ----- 1360 BTU/CF
Saturated Basis ----- 1337 BTU/CF

July 18, 2022

FESCO, Ltd.
1100 FESCO Avenue - Alice, Texas 78332

For: Pioneer Natural Resources
777 Hidden Ridge
Irving, Texas 75038

Sample: Jack Garner Tank Battery
First Stage Separator Hydrocarbon Liquid
Sampled @ 62 psig & 104 °F

Date Sampled: 06/12/2022

Job Number: 222442.002

CHROMATOGRAPH EXTENDED ANALYSIS - GPA 2186-M

COMPONENT	MOL %	LIQ VOL %	WT %
Nitrogen	0.059	0.010	0.010
Carbon Dioxide	0.034	0.009	0.009
Methane	1.695	0.440	0.163
Ethane	1.350	0.553	0.243
Propane	2.772	1.169	0.732
Isobutane	0.784	0.393	0.273
n-Butane	3.234	1.561	1.125
2,2 Dimethylpropane	0.061	0.036	0.026
Isopentane	2.171	1.215	0.937
n-Pentane	3.044	1.689	1.314
2,2 Dimethylbutane	0.073	0.047	0.038
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.443	0.278	0.228
2 Methylpentane	1.760	1.118	0.908
3 Methylpentane	1.127	0.705	0.581
n-Hexane	2.699	1.699	1.392
Heptanes Plus	<u>78.693</u>	<u>89.078</u>	<u>92.021</u>
Totals:	100.000	100.000	100.000

Characteristics of Heptanes Plus:

Specific Gravity ----- 0.8375 (Water=1)
°API Gravity ----- 37.45 @ 60°F
Molecular Weight ----- 195.4
Vapor Volume ----- 13.60 CF/Gal
Weight ----- 6.98 Lbs/Gal

Characteristics of Total Sample:

Specific Gravity ----- 0.8107 (Water=1)
°API Gravity ----- 43.04 @ 60°F
Molecular Weight ----- 167.1
Vapor Volume ----- 15.40 CF/Gal
Weight ----- 6.75 Lbs/Gal

Base Conditions: 14.650 PSI & 60 °F

Certified: FESCO, Ltd. - Alice, Texas

Sampled By: (10) T. Widener
Analyst: JG
Processor: ANBdjv
Cylinder ID: W-2397

Conan Pierce 361-661-7015

TANKS DATA INPUT REPORT - GPA 2186-M

COMPONENT	Mol %	LiqVol %	Wt %
Carbon Dioxide	0.034	0.009	0.009
Nitrogen	0.059	0.010	0.010
Methane	1.695	0.440	0.163
Ethane	1.350	0.553	0.243
Propane	2.772	1.169	0.732
Isobutane	0.784	0.393	0.273
n-Butane	3.296	1.597	1.151
Isopentane	2.171	1.215	0.937
n-Pentane	3.044	1.689	1.314
Other C-6's	3.404	2.148	1.755
Heptanes	9.619	6.021	5.375
Octanes	12.835	8.887	8.221
Nonanes	6.557	5.299	4.969
Decanes Plus	45.270	66.146	70.729
Benzene	0.254	0.109	0.119
Toluene	1.075	0.551	0.593
E-Benzene	0.808	0.477	0.513
Xylenes	1.091	0.645	0.693
n-Hexane	2.699	1.699	1.392
2,2,4 Trimethylpentane	<u>1.183</u>	<u>0.942</u>	<u>0.809</u>
Totals:	100.000	100.000	100.000

Characteristics of Total Sample:

Specific Gravity -----	0.8107 (Water=1)
°API Gravity -----	43.04 @ 60°F
Molecular Weight-----	167.1
Vapor Volume -----	15.40 CF/Gal
Weight -----	6.75 Lbs/Gal

Characteristics of Decanes (C10) Plus:

Specific Gravity -----	0.8669 (Water=1)
Molecular Weight-----	261.1

Characteristics of Atmospheric Sample:

°API Gravity -----	41.19 @ 60°F
Reid Vapor Pressure Equivalent (D-6377)-----	8.03 psi

QUALITY CONTROL CHECK			
	Sampling Conditions	Test Samples	
Cylinder Number	-----	W-2397*	-----
Pressure, PSIG	62	57	-----
Skin Temperature, °F	104	104	-----

* Sample used for analysis

COMPONENT	Mol %	LiqVol %	Wt %
Nitrogen	0.059	0.010	0.010
Carbon Dioxide	0.034	0.009	0.009
Methane	1.695	0.440	0.163
Ethane	1.350	0.553	0.243
Propane	2.772	1.169	0.732
Isobutane	0.784	0.393	0.273
n-Butane	3.234	1.561	1.125
2,2 Dimethylpropane	0.061	0.036	0.026
Isopentane	2.171	1.215	0.937
n-Pentane	3.044	1.689	1.314
2,2 Dimethylbutane	0.073	0.047	0.038
Cyclopentane	0.000	0.000	0.000
2,3 Dimethylbutane	0.443	0.278	0.228
2 Methylpentane	1.760	1.118	0.908
3 Methylpentane	1.127	0.705	0.581
n-Hexane	2.699	1.699	1.392
Methylcyclopentane	2.006	1.087	1.010
Benzene	0.254	0.109	0.119
Cyclohexane	1.976	1.030	0.995
2-Methylhexane	0.882	0.628	0.529
3-Methylhexane	0.925	0.650	0.554
2,2,4 Trimethylpentane	1.183	0.942	0.809
Other C-7's	1.758	1.163	1.044
n-Heptane	2.074	1.465	1.243
Methylcyclohexane	4.027	2.479	2.366
Toluene	1.075	0.551	0.593
Other C-8's	6.915	4.924	4.561
n-Octane	1.892	1.484	1.293
E-Benzene	0.808	0.477	0.513
M & P Xylenes	0.794	0.472	0.504
O-Xylene	0.297	0.173	0.189
Other C-9's	5.300	4.216	4.004
n-Nonane	1.257	1.083	0.964
Other C-10's	5.300	4.632	4.481
n-decane	1.049	0.986	0.894
Undecanes(11)	5.159	4.626	4.538
Dodecanes(12)	3.994	3.869	3.848
Tridecanes(13)	3.805	3.952	3.984
Tetradecanes(14)	3.086	3.433	3.509
Pentadecanes(15)	2.608	3.108	3.215
Hexadecanes(16)	2.066	2.631	2.745
Heptadecanes(17)	1.835	2.471	2.603
Octadecanes(18)	1.716	2.433	2.578
Nonadecanes(19)	1.585	2.341	2.495
Eicosanes(20)	1.180	1.812	1.942
Heneicosanes(21)	1.055	1.705	1.837
Docosanes(22)	0.947	1.595	1.729
Tricosanes(23)	0.808	1.410	1.538
Tetracosanes(24)	0.727	1.315	1.441
Pentacosanes(25)	0.667	1.251	1.377
Hexacosanes(26)	0.587	1.142	1.262
Heptacosanes(27)	0.565	1.138	1.264
Octacosanes(28)	0.514	1.071	1.193
Nonacosanes(29)	0.484	1.041	1.164
Triacosanes(30)	0.440	0.976	1.095
Hentriacosanes Plus(31+)	<u>5.094</u>	<u>17.205</u>	<u>19.999</u>
Total	100.000	100.000	100.000