

**PROCESS DESCRIPTION**  
**TMFU 4577-10-44 PAD**  
**(TMFU 4577-10-12SH-H, TMFU 4577-15-14SH-H & TMFU 4577-15-44SH-H)**

Well Pad Configuration:

The TMFU 4577-10-44 PAD is comprised of the following three wells: TMFU 4577-10-12SH-H, TMFU 4577-15-14SH-H, and the TMFU 4577-15-44SH-H. All three wells have separate production equipment but share the same ECD and production flare. The facility diagram shows all three wells and the associated equipment configuration. Wells TMFU 4577-10-12SH-H and TMFU 4577-15-14SH-H are permitted under permit number CT-16294, issued July 15, 2014. Well TMFU 4577-15-44SH-H had been drilled at the time of issuance of permit CT-16294 but had not been completed. The first date of production for TMFU 4577-15-44SH-H was 12/14/2014.

Upon first production:

The mixed natural gas/oil/produced water stream exits the wellhead and continues to the vertical two-phase inlet separator. Following the inlet separator, the natural gas stream continues to the smaller vertical outlet separator (scrubber) which acts as a final scrubber before proceeding through the meter and to sales. The liquids (oil/water combination) continue on to the treater from the initial two-phase inlet separator. There is 1 vertical heater treater that has an external burner that provides heat to promote separation of the components, as well as prevent the process from freezing during colder months. Following the treater, any natural gas that breaks out continues to the smaller vertical two-phase outlet separator (scrubber) prior to being metered into the sales line. From the treater, the produced water is directed to the water storage tank and the oil is directed to the oil storage tanks. The flashing and standing/working/breathing vapors from the oil tanks are sent to the enclosed emission control device (ECD).

The production gas from the treater and the two-phase inlet separator proceed to the smaller vertical outlet separator (scrubber) as mentioned above where a final assurance that all liquids are contained and not allowed to reach the sales line. If excessive liquids do accumulate in the scrubber, a level switch will automatically shut the well in and close the appropriate valves to keep any liquids from reaching the sales line. Re-start of the system is not automatic and will demand the attention of the operator for a manual re-start. Liquids in the scrubber are drained back to the oil tanks prior to re-starting the process. Once corrections are made, the system is manually re-started. The produced natural gas from the scrubber is routed through an orifice sales meter for accurate measurement as it enters the gas gathering system. The flare will only be used in emergency situations if compression is interrupted.

There are flame safeguard controls in place which indicate the ECD and production flare are operational. The presences of a pilot flame in the ECD and production flare are continually monitored and are dated and time stamped every few seconds. An alarm is sent to Anadarko's automation system if the flame is not detected.

**Additional Information:**

Treater Operating Pressure

The typical operating pressure of the treaters at the facility ranges from 45 psig to 50 psig.

Emergency Fuel Tank

An emergency propane tank is installed at the facility in the event that fuel is required for start-up of the treaters after the well has been shut-in.



## TMFU 4577-10-44 PAD Equipment List

(2) 2-phase, high pressure inlet separator (9bbl)

(3) 2-phase, outlet separator (scrubber) (3bbl)

(3) 3-phase treater w/ 0.5 MMBtu/hr burner

(12) 400 bbl. Oil Tanks

(3) 400 bbl. Water Tank

### Fugitives

(1) Produced gas flare stack and monitoring device (Flare Startup: 1/25/2014, monitoring device startup:

(1) Smokeless ECD & monitoring device (ECD Startup: 1/25/2014, monitoring device startup: 1/25/2014)

(1) 1000 gal. propane tank (Emergency 3-phase treater startup fuel)

(3) Pneumatic Transducers

(1) Portable power generator

### Tank Truck Loading











# TANK TRUCK LOADING EMISSION CALCULATIONS

## POTENTIAL-TO-EMIT CALCULATION

### TMFU 4577-15-44SH-H

Emission Source:	Tank Truck Loading	
Emission Unit ID	TL-3	
Annual Throughput (BOPY)	50,005	
API Gravity @ Sales Temp	37	
Average Sales oil Temperature - T (°R)	520	
Vapor Molecular Weight - M (lb/lb mole):	29	
Saturation Factor - S:	0.6	as per AP-42
Loading Rate - LR (BBLs/Hr):	300	conservative estimate

Reid Vapor Pressure =  $-1.699 + (0.179 \times \text{APIG})$  = 4.9

(refer to Eq. 3-5 of API Publication Number 4683 which is attached)

Reid Vapor Pressure (refer to RVP analysis) = 8.60

True Vapor Pressure - P (psia) = 5.9

(refer to Section, 7.1, Figure 3-1 of AP-42; 9/06 edition)

$L_L$  - lb/1000 gallons loaded =  $12.46 \times S \times P \times M/T$  = 2.46

Hourly HC Emissions (lb/hr) =  $L_L/1000 \times (LR) \times (\text{conversion factor})$  = **30.99**

Annual HC Emissions (TPY) =  $LL/1000 \times (BOPY) \times (\text{conversion factor})$  = **2.58**

COMPONENT SPECIATION: Based on "Air Emissions Species Manual - Volume I: Volatile Organic Compound Species Profiles," 2nd edition; Report No. EPA-450/2-90-001A; page 258

Component	Weight Percent	lb/hr	TPY
Methane	6.20	1.9217	0.1602
Ethane	5.60	1.7357	0.1447
Propane	17.60	5.4551	0.4546
Iso-Butane	1.50	0.4649	0.0387
N-Butane	27.10	8.3995	0.7000
Iso-Pentane	1.50	0.4649	0.0387
N-Pentane	14.60	4.5252	0.3771
Heptane	9.20	2.8515	0.2376
Octane	6.90	2.1386	0.1782
Other NM/NE HC	1.80	0.5579	0.0465
N-Hexane (HAP)	7.90	2.4486	0.2041
Benzene (HAP)	0.10	0.0310	0.0026
TOTAL		30.99	2.58
TOTAL HAPS		2.48	<b>0.21</b>
TOTAL VOC		27.34	<b>2.28</b>



PNEUMATIC SOURCES EMISSION CALCULATIONS

**POTENTIAL-TO-EMIT CALCULATION  
TMFU 4577-15-44SH-H**

**Pneumatic Transducer**

Transducer operates emergency safety valve which shuts well in if necessary

$$\text{Emission (lb/hr)} = \text{PSCR (scf/min)} * 60 \text{ min/hr} * 1/379 \text{ scf/lbmole} * \text{Gas MW} * \text{VOC Mole Fraction}$$

Where PSCR = Pneumatic Source Consumption Rate

Gas MW = Gas Molecular Weight

VOC Wt Fraction = VOC Weight Fraction in the Gas Stream

Air Consumption Rate	4.1 scfh
Air Consumption Rate	0.07 scfm
Gas Consumption Rate	5.33 scfh
Gas Consumption Rate	0.09 scfm
VOC Weight Fraction	0.42
Specific Gravity of the Gas	0.86
Gas MW	25.09
Average Hours of Operation	288 hrs
No. of Devices	1

Equipment	VOC Emissions		VOC Emissions	
	(per device)		Total Devices	
	lb/hr	tpy	lb/hr	tpy
Fisher i2P-100	0.15	0.02	0.15	0.02

Transducer only emits VOC's during actuation of the emergency valve

Assumption: Extremely conservative estimation of 24 hours of valve activation per month



Anadarko Petroleum Corp  
 TMFU 4577-15-44SH-H

Pollutant	Weight Fraction
METHANE	0.48900
ETHANE	0.09128
PROPANE	0.18986
i-BUTANE	0.04221
n-BUTANE	0.09773
i-PENTANE	0.03243
n-PENTANE	0.03086
BENZENE	0.00027
TOLUENE	0.00059
ETHYLBENZENE	0.00027
XYLENES	0.00095
n-HEXANE	0.01000
OTHERS (HEXANES+)	0.01455
<hr/>	
TOTAL HC	1.0000
VOC	0.4197
HAPS	0.0121

Normalized (excluding nitrogen and carbon dioxide) Weight Fraction Calculation  
 per Gas Analysis CR-14097 taken 2/03/2014.

Pollutant	Mol Percent	Mol Fraction	Norm. Mol Frac.	MW	Weight	Wt. Fraction
METHANE	71.47400	0.71474	0.73602	16.043	11.80794	0.48900
ETHANE	7.11800	0.07118	0.07330	30.069	2.20403	0.09128
PROPANE	10.09600	0.10096	0.10397	44.096	4.58447	0.18986
i-BUTANE	1.70300	0.01703	0.01754	58.12	1.01925	0.04221
n-BUTANE	3.94300	0.03943	0.04060	58.12	2.35990	0.09773
i-PENTANE	1.05400	0.01054	0.01085	72.15	0.78310	0.03243
n-PENTANE	1.00300	0.01003	0.01033	72.15	0.74521	0.03086
BENZENE	0.00800	0.00008	0.00008	78.11	0.00643	0.00027
TOLUENE	0.01500	0.00015	0.00015	92.14	0.01423	0.00059
ETHYLBENZENE	0.00600	0.00006	0.00006	106.17	0.00656	0.00027
XYLENES	0.02100	0.00021	0.00022	106.17	0.02296	0.00095
n-HEXANE	0.27200	0.00272	0.00280	86.18	0.24139	0.01000
OTHERS (HEXANES+)	0.39600	0.00396	0.00408	86.18	0.35143	0.01455
<hr/>						
NITROGEN	1.28800	0.01288				
CARBON DIOXIDE	1.03900	0.01039				
<hr/>						
	99.43600	0.99436	1.00000		24.14690	1.00000



PRODUCTION FLARE EMISSION CALCULATIONS

**POTENTIAL-TO-EMIT CALCULATION**

TMFU 4577-15-44SH-H

**PRODUCED GAS FLARE EMISSIONS - EMERGENCY PURPOSES ONLY**

(PRODUCED GAS GOES TO SALES / GATHERING SYSTEM)

Flare Gas Flow Rate (Mscfd) 0.00 (Based on Anadarko's metered gas production)  
 Flare Gas Flow Rate (MMscfd) 0.00E+00  
 Annual Flare Gas (SCF/yr) -  
 Heat Content (BTU/SCF) 1,446 (see Gas Analysis)  
 CO Emission Factor (lb/10<sup>6</sup> BTU) 0.035 (C6S2 Permitting Guidance Page 63 (revised 2010))  
 NOx Emission Factor (lb/10<sup>6</sup> BTU) 0.140 (C6S2 Permitting Guidance Page 63 (revised 2010))  
 Assumptions:  
 VOC Weight Fraction 0.42  
 HAPS Weight Fraction 0.01  
 Flare Gas MW 25.1 lb/lb-mole (calculated using attached Gas Analysis)  
 Flare Destruction Efficiency 98%

Annual Flare Gas (SCF/yr)	Heat Content (BTU/SCF)	Heat Value (MMBTU/yr)	Emission Rate			
			CO		NOx	
			(lb/hr)	(tpy)	(lb/hr)	(tpy)
-	1,446	-	-	-	-	-

Hourly Emission Rate (lb/hr) = Emission Factor (lb/10<sup>6</sup> BTU) x Heat Value (MMBTU/yr) / 8,760 (hr/yr)

Annual Emission Rate (tpy) = Hourly Emission Rate (lb/hr) x 8,760 (hr/yr) / 2,000 (lb/ton)

Emission Rate			
VOC		HAP	
Uncontrolled (tpy)	Controlled (tpy)	Uncontrolled (tpy)	Controlled (tpy)
-	-	-	-

**PRODUCTION GAS FLARE - PILOT**

CO Emission Factor (lb/10<sup>6</sup> BTU) 0.035 (C6S2 Permitting Guidance Page 68 (revised 2007))  
 NOx Emission Factor (lb/10<sup>6</sup> BTU) 0.140 (C6S2 Permitting Guidance Page 68 (revised 2007))  
 Pilot Gas Volume (scf/min) 0.313 (Based on Manufacturer at 5 psi)

**NO<sub>x</sub> Emissions From Pilot**

TPY NO<sub>x</sub> = (# scf/min) x (1,000 Btu/scf) x (0.14 lb NOx/MMBtu) x (MMBtu/10<sup>6</sup> Btu) x (60 min/hr) x (8760 hr/yr)  
 TPY NO<sub>x</sub> 0.0115  
 lb/hr NO<sub>x</sub> 0.003

**CO Emissions From Pilot**

TPY CO = (# scf/min) x (1,000 Btu/scf) x (0.035 lb NOx/MMBtu) x (MMBtu/10<sup>6</sup> Btu) x (60 min/hr) x (8760 hr/yr)  
 TPY CO 0.00005  
 lb/hr CO 0.00



EXTERNAL COMBUSTION BURNER EMISSION CALCULATIONS

**POTENTIAL-TO-EMIT CALCULATION**

Emission Source:	Heater Treater - TMFU 4577-15-44SH-H
Emission Unit ID	H-3
Burner Rating (BTU/Hr)	500,000
Fuel Type	natural gas from well
Fuel Heating Value (BTU/scf)	1446
Annual Hours of Operation (hr/yr)	8760

Combustion Products	EMISSION FACTOR (lb/MMscf)	--EMISSION RATES--		Basis of Estimate
		(lb/hr)	(tpy)	
Nitrogen Oxides	100	0.07	0.30	AP-42 (07/00), Section 1.4, Table 1.4-1
Carbon Monoxide	84	0.06	0.26	AP-42 (07/00), Section 1.4, Table 1.4-1
Total Non-CH4 Organic Carbons (TNMOC)	5.5	0.00	0.02	AP-42 (07/00), Section 1.4, Table 1.4-2
Sulfur Dioxide	0.6	0.00	0.00	AP-42 (07/00), Section 1.4, Table 1.4-2
Particulate Matter	7.6	0.01	0.02	AP-42 (07/00), Section 1.4, Table 1.4-2

**CALCULATION METHODOLOGY**

Emission Rate (lb/hr) = (EF, lb/MMscf) x (Burner Rating, BTU/Hr) x (1 MMBTU/1,000,000 BTU) x (Fuel Heating Value/1020) x (1 scf/1020 BTU)

Emission Rate (tons/yr) = (Emission Rate, lbs/hr) x (Annual Hours of Operation, hrs/yr) / (2000 lbs/ton)



STORAGE TANK EMISSION CALCULATIONS

POTENTIAL-TO-EMIT CALCULATION  
TMFU 4577-15-44SH-H

OIL TANK EMISSIONS

UNCONTROLLED FLASHING/WORKING/BREATHING LOSSES

Oil Throughput (bbl/day)	137.00
VOC Hourly Emission Rate (lb/hr)	0.00 (see E&P Tanks Output Report)
VOC Annual Emission Rate (tpy)	0.00 (see E&P Tanks Output Report)
HAP Hourly Emission Rate (lb/hr)	0.00 (see E&P Tanks Output Report)
HAP Annual Emission Rate (tpy)	0.00 (see E&P Tanks Output Report)

LOSSES

Annual Tank Throughput (gal/yr)	2069550.00
VOC Annual Emission Rate (lbs/yr)	1166.22 (see EPA TANKS v. 4.0 Output Report)
VOC Hourly Emission Rate (lb/hr)	0.13
VOC Annual Emission Rate (tpy)	0.58
HAP Hourly Emission Rate (lb/hr)	0.00 Based on VOC/HAP speciation from HYSYS
HAP Annual Emission Rate (tpy)	0.01 HAPs = 1.379 % VOC

TOTAL UNCONTROLLED EMISSIONS

VOC Annual Emission Rate (tpy)	0.00
HAP Annual Emission Rate (tpy)	0.00

ENCLOSED FLARE EMISSIONS

Flash Gas Flow Rate (Mscfd)	0.00 (see E&P Tanks Output Report)
Flash Gas Flow Rate (scf/hr)	0.00
Heat Content Flash Gas (btu/scf)	- (see E&P Tanks Output Report)
CO Emission Factor (lb/10 <sup>6</sup> BTU)	0.035 (C6S2 Permitting Guidance Page 68 (revised 2007))
NOx Emission Factor (lb/10 <sup>6</sup> BTU)	0.140 (C6S2 Permitting Guidance Page 68 (revised 2007))
Pilot Gas Volume (scf/min)	0.340 (Based on Manufacturer at 6 psi)
Field Gas Heat Content (btu/scf)	1.412 (Extended Hydrocarbon Analysis - Gas)

NO<sub>x</sub> Emissions From Tank Flare

TPY NO <sub>x</sub> = (# scf/hr) x (# Btu/scf) x (0.14 lb NO <sub>x</sub> /MMBtu) x (MMBtu/10 <sup>6</sup> Btu) x (8760 hr/yr) x (1 ton/2000lb)	
TPY NO <sub>x</sub>	0.00
lb/hr NO <sub>x</sub>	0.000

NO<sub>x</sub> Emissions From Pilot

TPY NO <sub>x</sub> = (# scf/min) x (1,000 Btu/scf) x (0.14 lb NO <sub>x</sub> /MMBtu) x (MMBtu/10 <sup>6</sup> Btu) x (60 min/hr) x (8760 hr/yr) x (1 ton/2000 lb)	
TPY NO <sub>x</sub>	0.01
lb/hr NO <sub>x</sub>	0.003

Total NO<sub>x</sub> (TPY) 0.01

CO Emissions From Tank Flare

TPY CO = (# scf/hr) x (# Btu/scf) x (0.035 lb NO <sub>x</sub> /MMBtu) x (MMBtu/10 <sup>6</sup> Btu) x (8760 hr/yr) x (1 ton/2000lb)	
TPY CO	0.00
lb/hr CO	0.000

CO Emissions From Pilot

TPY CO = (# scf/min) x (1,000 Btu/scf) x (0.035 lb NO <sub>x</sub> /MMBtu) x (MMBtu/10 <sup>6</sup> Btu) x (60 min/hr) x (8760 hr/yr) x (1 ton/2000 lb)	
TPY CO	0.00005
lb/hr CO	0.00

Total CO (TPY) 0.00

Annual Flash Gas (SCF/yr)	Heat Content (BTU/SCF)	Heat Value (MMBTU/yr)	Emission Rate			
			CO		NOx	
			(lb/hr)	(tpy)	(lb/hr)	(tpy)
2,428	0	0.00	0.00	0.00	0.00	0.00

Hourly Emission Rate (lb/hr) = Emission Factor (lb/10<sup>6</sup> BTU) x Heat Value (MMBTU/yr) / 8,760 (hr/yr)

Annual Emission Rate (tpy) = Hourly Emission Rate (lb/hr) x 8,760 (hr/yr) / 2,000 (lb/ton)

CONTROLLED FLASHING LOSSES

Enclosed Flare Destruction Efficiency	98%
VOC Annual Emission Rate (tpy)	0.55
HAP Annual Emission Rate (tpy)	0.01

HEAT CONTENT OF FUEL GAS

Gas Component	Mole %	at 60 F and 14,696 psia Pure Component LHV (BTU/SCF)		Low Heat release per 1 SCF of gas
CH4	33.804	909.10	307.31	
C2H6	23.905	1,617.80	386.73	
C3H8	24.666	2,315.90	571.24	
iC4H10	3.145	3,001.00	94.39	
nC4H10	6.877	3,010.50	207.03	
iC5H12	1.847	3,697.90	68.28	
nC5H12	1.331	3,706.80	49.35	
C6H14	0.683	4,403.90	30.09	
C7H16	0.526	5,100.30	26.81	
C8H18	0.842	5,796.10	48.83	
CO2	2.042	-	0	
N2	0.332	-	0	
H2S	0.000	586.70	0	
O2	0.000	-	0	
Totals	100.000		1790.06	BTU/SCF

Mole Frac		Enter speciation from E&P Tanks	
		lb/hr	MW
0.020421	0.0007	0.0290 CO2	44.0000
0.003317	0.0001	0.0030 N2	28.0200
0.338039	0.0109	0.1750 C1	16.0400
0.239049	0.0077	0.2320 C2	30.0700
0.246661	0.0080	0.3510 C3	44.0900
0.031453	0.0010	0.0590 IC4	58.1200
0.06877	0.0022	0.1290 NC4	58.1200
0.018466	0.0006	0.0430 IC5	72.1500
0.013312	0.0004	0.0310 NC5	72.1500
0.003596	0.0001	0.0100 Hexanes	86.1700
0.005257	0.0002	0.0170 Heptanes	100.2000
0.00434	0.0001	0.0160 Octanes	114.2200
0.000966	0.0000	0.0040 Nonanes	128.2500
0.000793	0.0000	0.0020 Benzene	78.1100
0.000673	0.0000	0.0020 Toluene	92.1300
0	0.0000	0.0000 E-Benzene	106.1600
0.000292	0.0000	0.0010 Xylene	106.1600
0.003236	0.0001	0.0090 n-C6	86.1700
0.000271	0.0000	0.0010 2,2,4-Trim	114.2200
0.001089	0.0000	0.0050 C10 Mole	142.2800
0.0	0.0	1.1190	

0.6800



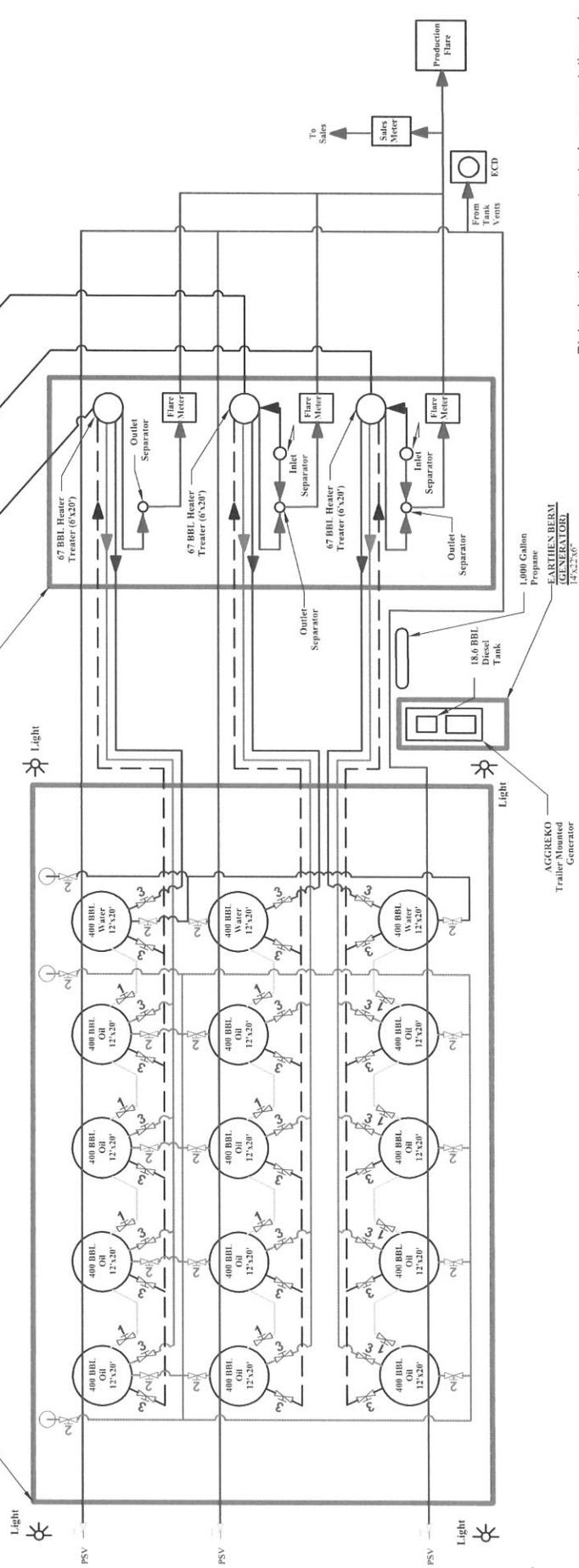
**The Site Security Plan for this facility is Fielded in the Anadarko Gillette Field office at 1400 East Lincoln Street, Gillette, WY 82716.**

TMFU 4577-10-12SH-H  
 TMFU 4577-15-14SH-H  
 TMFU 4577-15-14SH-L

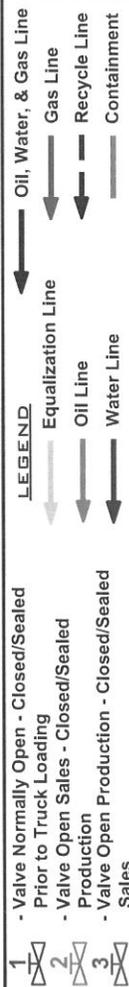
Direction of Stormwater Flow

STEEL BERM (CRUDE OIL) WATER  
 78X112X36"

STEEL BERM (HEATER/TREATER)  
 40X85X12"



Piping locations are not actual; representation only.



TMFU 4577-10-44 TANK BATTERY  
 TMFU 4577-10-12SH-H, 15-44SH-H, 15-14SH-H (WY125236X)  
 FACILITY LOCATION: SE. SEC. 10, T.45N, R.77W  
 N 43.881633, W -106.092785  
 JOHNSON COUNTY, WYOMING

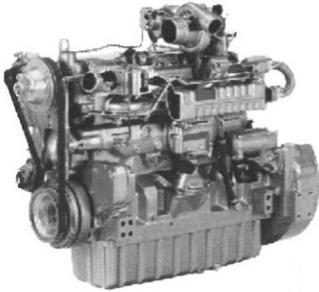
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 DRAWING: TMFU 4577-10-44.dwg



# PowerTech™ Plus

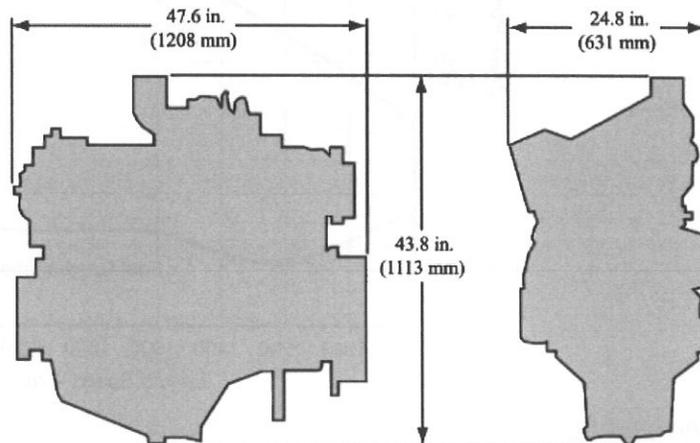
## 6090HF485 Diesel Engine

Industrial Engine Specifications



6090HF485 shown

### Dimensions



### Certifications

CARB  
EPA Tier 3  
EU Stage III A

### General data

Model	6090HF485	Length - mm (in)	1208 (47.6)
Number of cylinders	6	Width - mm (in)	630 (24.8)
Displacement - L (cu in)	9 (549)	Height-- mm (in)	1113 (43.8)
Bore and Stroke-- mm (in)	118.4 x 136.0 (4.66 x 5.35)	Weight, dry-- kg (lb)	901 (1986)
Compression Ratio	16.0 : 1		
Engine Type	In-line, 4-Cycle		
Aspiration	Turbocharged and air-to-air aftercooled		

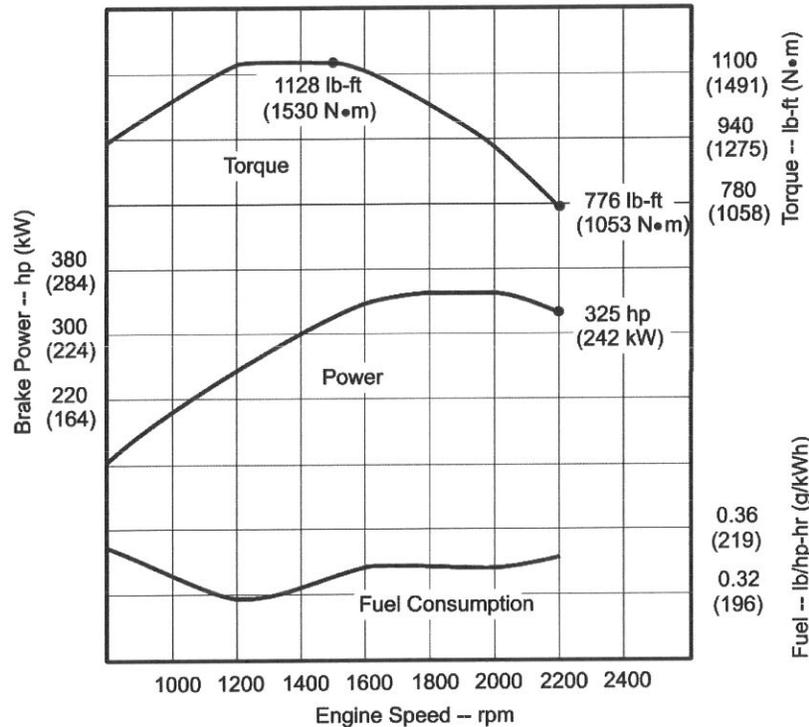
### Performance data

Application	Continuous
Rated Speed	242 kW (325 hp) @ 2200 rpm
Peak power	261 kW (350 hp) @ 2000 rpm
Power bulge %	8% @ 2000 rpm
Peak torque	1530 N.m (1128 ft-lb) @ 1500 rpm

The Industrial Continuous engine power rating is for applications that operate with constant load and speed, except for short periods during startup or shutdown.

Power output is within + or - 5% at standard SAE J 1995 and ISO 3046.

## Performance curve



## Features and benefits

## 4-Valve Cylinder Head

- The 4-valve cylinder head provides excellent airflow resulting in greater low-speed torque and better transient response. New 4-valve U-flow head design

## High-Pressure Common-Rail (HPCR) and Engine Control Unit (ECU)

- The HPCR fuel system provides variable common-rail pressure, multiple injections, and higher injection pressures, up to 1600 bar (23,000 psi). It also controls fuel injection timing and provides precise control for the start, duration, and end of the injection

## Cooled Exhaust Gas Recirculation (EGR)

- EGR cools and mixes measured amounts of cooled exhaust gas with incoming fresh air to lower peak combustion temperatures, thereby reducing NOx

## Variable Geometry Turbocharger (VGT)

- Varies exhaust pressure based on load and speed to insure proper EGR flow; greater low-speed torque, quicker transient response, higher peak torque, and best-in-class fuel economy.

## Air-to-Air Aftercooled

- This is the most efficient method of cooling intake air to help reduce engine emissions while maintaining low-speed torque, transient response time, and peak torque. It enables an engine to meet emissions regulations with better fuel economy and the lowest installed costs

## Compact Size

- Horsepower/displacement ratio is best-in-class
- Lower installed cost
- Mounting points are the same as Tier 2/Stage II engine models

## John Deere Electronic Engine Controls

- Electronic engine controls monitor critical engine functions, providing warning and/or shutdown to prevent costly engine repairs and eliminate the need for add-on governing components all lowering total installed costs. Snapshot diagnostic data that can be retrieved using commonly available diagnostic service tools
- Controls utilize new common wiring interface connector for vehicles or available OEM instrumentation packages; new solid conduit and "T" connectors to reduce wiring stress and provide greater durability and improved appearance
- Factory-installed, engine mounted ECU or remote-mounted ECU comes with wiring harness and associated components. Industry-standard SAE J1939 interface communicates with other vehicle systems, eliminating redundant sensors and reducing vehicle installed cost

## Additional Features

- Gear-driven auxiliary drives; 500-hour oil change; self-adjusting poly-vee fan drive; single-piece low friction piston; optional rear PTO; low-pressure fuel system with "auto-prime" feature; directed top-liner cooling

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* Project Setup Information
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Project File      : L:\SharedData\Denver\EHS\1 - Air\E&P\WY-NE\PRB Deep Wellsites\Facilities\TMFU 4577 -
10-44 PAD\Air Permitting\2014-07-15 CT-16294\Application\TMFU 4577-15-14SH-H.ept
Flowsheet Selection : Oil Tank with Separator
Calculation Method  : RVP Distillation
Control Efficiency   : 98.0%
Known Separator Stream : Low Pressure Oil
Entering Air Composition : No

Filed Name      : Wildcat
Well Name       : TMFU 4577-15-44SH-H
Well ID         : API #: 49-019-29939
Date            : 4/21/2014

```

```

*****
* Data Input
*****

```

```

Separator Pressure      : 36.00[psig]
Separator Temperature   : 128.00[F]
Ambient Pressure        : 12.00[psia]
Ambient Temperature     : 45.50[F]
C10+ SG                 : 0.8005
C10+ MW                 : 230.234

```

```

-- Low Pressure Oil -----

```

No.	Component	mol %
1	H2S	0.0000
2	O2	0.0000
3	C02	0.0240
4	N2	0.0010
5	C1	0.1970
6	C2	0.2580
7	C3	1.0130

```

8  i-C4      0.6560
9  n-C4      2.3140
10 i-C5      1.3210
11 n-C5      1.7470
12 C6       1.4130
13 C7       4.2060
14 C8      12.5370
15 C9       9.1240
16 C10+    61.3200
17 Benzene  0.2090
18 Toluene  0.5920
19 E-Benzene 0.1160
20 Xylenes  1.4190
21 n-C6     1.1540
22 224Trimethylp 0.3790
    
```

```

-- Sales Oil -----
Production Rate      : 317[bbbl/day]
Days of Annual Operation : 365 [days/year]
API Gravity         : 36.9
Reid Vapor Pressure : 8.60[psia]
    
```

```

*****
* Calculation Results
*****
    
```

```

-- Emission Summary -----
Item      Uncontrolled [ton/yr]  Uncontrolled [lb/hr]  Controlled [ton/yr]  Controlled [lb/hr]
Page 1-----
Total HAPS      0.000      0.000      0.000      0.000
Total HC        0.000      0.000      0.000      0.000
VOCs, C2+      0.000      0.000      0.000      0.000
VOCs, C3+      0.000      0.000      0.000      0.000
    
```

```

Uncontrolled Recovery Info.
Vapor      0.0000 x1E-3 [MSCFD]
HC Vapor   0.0000 x1E-3 [MSCFD]
    
```

GOR 0.00 [SCF/bbl]

-- Emission Composition -----

No	Emission Component	Uncontrolled [ton/yr]	Uncontrolled [lb/hr]	Controlled [ton/yr]	Controlled [lb/hr]
1	H2S	0.000	0.000	0.000	0.000
2	O2	0.000	0.000	0.000	0.000
3	CO2	0.000	0.000	0.000	0.000
4	N2	0.000	0.000	0.000	0.000
5	C1	0.000	0.000	0.000	0.000
6	C2	0.000	0.000	0.000	0.000
7	C3	0.000	0.000	0.000	0.000
8	i-C4	0.000	0.000	0.000	0.000
9	n-C4	0.000	0.000	0.000	0.000
10	i-C5	0.000	0.000	0.000	0.000
11	n-C5	0.000	0.000	0.000	0.000
12	C6	0.000	0.000	0.000	0.000
13	C7	0.000	0.000	0.000	0.000
14	C8	0.000	0.000	0.000	0.000
15	C9	0.000	0.000	0.000	0.000
16	C10+	0.000	0.000	0.000	0.000
17	Benzene	0.000	0.000	0.000	0.000
18	Toluene	0.000	0.000	0.000	0.000
19	E-Benzene	0.000	0.000	0.000	0.000
20	Xylenes	0.000	0.000	0.000	0.000
21	n-C6	0.000	0.000	0.000	0.000
22	224Trimethylp	0.000	0.000	0.000	0.000
	Total	0.000	0.000	0.000	0.000

-- Stream Data -----

No.	Component	MW	LP Oil mol %	Flash Oil mol %	Sale Oil mol %	Flash Gas mol %	W&S Gas mol %	Total Emissions mol %
1	H2S	34.80	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	O2	32.00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	CO2	44.01	0.0240	0.0240	0.0240	0.0000	0.0000	0.0000
4	N2	28.01	0.0010	0.0010	0.0010	0.0000	0.0000	0.0000
5	C1	16.04	0.1970	0.1970	0.1970	0.0000	0.0000	0.0000
6	C2	30.07	0.2580	0.2580	0.2580	0.0000	0.0000	0.0000
7	C3	44.10	1.0130	1.0130	1.0130	0.0000	0.0000	0.0000

8	i-C4	58.12	0.6560	0.6560	0.6560	0.6560	0.0000	0.0000	0.0000
9	n-C4	58.12	2.3140	2.3140	2.3140	2.3140	0.0000	0.0000	0.0000
10	i-C5	72.15	1.3210	1.3210	1.3210	1.3210	0.0000	0.0000	0.0000
11	n-C5	72.15	1.7470	1.7470	1.7470	1.7470	0.0000	0.0000	0.0000
12	C6	86.16	1.4130	1.4130	1.4130	1.4130	0.0000	0.0000	0.0000
13	C7	100.20	4.2060	4.2060	4.2060	4.2060	0.0000	0.0000	0.0000
14	C8	114.23	12.5370	12.5370	12.5370	12.5370	0.0000	0.0000	0.0000
15	C9	128.28	9.1240	9.1240	9.1240	9.1240	0.0000	0.0000	0.0000
16	C10+	230.23	61.3200	61.3200	61.3200	61.3200	0.0000	0.0000	0.0000
17	Benzene	78.11	0.2090	0.2090	0.2090	0.2090	0.0000	0.0000	0.0000
18	Toluene	92.13	0.5920	0.5920	0.5920	0.5920	0.0000	0.0000	0.0000
19	E-Benzene	106.17	0.1160	0.1160	0.1160	0.1160	0.0000	0.0000	0.0000
20	Xylenes	106.17	1.4190	1.4190	1.4190	1.4190	0.0000	0.0000	0.0000
21	n-C6	86.18	1.1540	1.1540	1.1540	1.1540	0.0000	0.0000	0.0000
22	224Trimethylp	114.24	0.3790	0.3790	0.3790	0.3790	0.0000	0.0000	0.0000

MW	179.71	179.71	179.71	179.71	179.71	179.71	0.00	0.00	0.00
Stream Mole Ratio	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.0000
Heating Value	[BTU/SCF]						0.00	0.00	0.00
Gas Gravity	[Gas/Air]						0.00	0.00	0.00
Bubble Pt. @ 100F	[psia]	13.35	13.35	13.35	13.35	13.35	0.00	0.00	0.00
RVP @ 100F	[psia]	5.60	5.60	5.60	5.60	5.60	0.00	0.00	0.00
Spec. Gravity @ 100F		0.697	0.697	0.697	0.697	0.697	0.00	0.00	0.00

Page 2----- E&P TANK

NSR Application A0001207  
TMFU 4577-10-44 PAD  
F026163  
June 24, 2015

Reviewer HMB  
cc: \_\_\_\_\_  
Modeler \_\_\_\_\_  
D.E. \_\_\_\_\_  
File \_\_\_\_\_  
IMP FID \_\_\_\_\_



**Air Quality Division**  
**Application for NSR Permit**

Jun 26 2015, 14:10:40

- **NSR Application**

Date application received : 06/24/2015

Is this a legacy NSR Application? No

*This information should be filled out for each New Source Review (NSR) application. An NSR permit is required for all air contaminant sources (emissions units) installed or modified after January 1, 1974. See the application instructions for additional information.*

Emission Unit application reason summary :	<input type="checkbox"/> Construction	<input type="checkbox"/> Synthetic Minor
	<input checked="" type="checkbox"/> Modification	<input type="checkbox"/> Temporary Permit
	<input type="checkbox"/> Reconstruction	<input type="checkbox"/> Other

Facility Type :

Sage Grouse :

- **Purpose of Application**

Please summarize the reason this permit is being applied for.

To add one well (TMFU 4577-15-44SH-H) and associated equipment to the existing permit No. CT-16294.

Has the facility changed location or is it a new/greenfield facility? No

Does production at this facility contain H2S? No

- **Federal Rules Applicability - Facility Level**

**Prevention of Significant Deterioration (PSD)** Not affected  
*These rules are found under WAQSR Chapter 6, Section 4.*

**Non-Attainment New Source Review** Not affected  
*These rules are found under WAQSR Chapter 6, Section 13.*

- **Trade Secret Information** - One or more Emissions Units in this application contains trade secret information.

No

- **Permit Application Contact** - Newly created contacts and application contact changes will be saved when the application is saved.

Peter Wolberg		Anadarko E&P Onshore LLC
Name	Title	Company
1099 18th St., Suite 1800	Denver, CO	80202
Street Address	City/Township, State	Zip Code
(720) 929-6105		Peter.Wolberg@anadarko.com
Phone	Fax	E-mail

- **Modeling Section**

*Ambient Air Quality Impact Analysis: WAQSR Chapter 6, Section 2(c)(ii) requires that permit applicants demonstrate that a proposed facility will not prevent the attainment or maintenance of any ambient air quality standard.*

Has the applicant contacted AQD to determine if modeling is required? No

Is a modeling analysis part of this application? No



Is the proposed project subject to Prevention of Significant Deterioration (PSD) No requirements?

- Application Attachments

Required Attachment	Public Document Id	Attachment Type	Description
X	6156	Process Flow Diagram	Process Flow Diagram
X	6157	Emissions Calculations	Emission Calculations
X	6158	Cover Letter/Project Description	Project Description
X	6159	Equipment List	Equipment List

- Notes

User Name	Date	Note
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**Section II - Specific Air Contaminant Source Information**

**AQD EU ID:** ENG001

**AQD EU description:**

**Company EU ID:** GEN001

**Company EU Description:** Portable Power Generator

- **Source Installation or Modification Schedule** – Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):

Modification

**When will you begin to modify the air contaminant source?**

12/14/2014

- **Emission Unit Type Specific Information**

Emission Unit Type : Engine

Btu Content : 130,000.00

Units : Btu/gallon

Fuel Sulfur Content : 15.00

Units : ppm

Type of Service : Generator

- **Potential Operating Schedule** – Provide the operating schedule for this emissions unit

Hours/day : 24

Hours/year : 8760

- **Emissions Information** "Potential to emit" means the maximum capacity of a source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations promulgated thereunder.

Basis for Determination Options:

- *Manufacturer Data*
- *Test results for this source*
- *Similar source test results*
- *GRICalc*
- *Tanks Program*
- *AP-42*
- *Other. If this is selected, attach a document with a description of the method used.*

**Criteria Pollutants :**

Pollutant	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
		Potential to Emit (PTE)*	Units*			
Particulate emissions (PE/PM) (formerly particulate matter, PM)	0	0		0	0	
PM # 10 microns in diameter (PE/PM10)	0	0		0	0	
PM # 2.5 microns in diameter (PE/PM2.5)	0	0		0	0	



Sulfur dioxide (SO2)	0	0		1.9	8.3	Manufacturer Data
Nitrogen oxides (NOx)	0	0		0.34	1.5	Manufacturer Data
Carbon monoxide (CO)	0	0		0	0	
Volatile organic compounds (VOC)	0	0		0	0	
Lead (Pb)	0	0		0	0	
Total Hazardous Air Pollutants (HAPs)	0	0		0	0	
Fluoride (F)	0	0		0	0	
Hydrogen Sulfide (H2S)	0	0		0	0	
Mercury (Hg)	0	0		0	0	
Total Reduced Sulfur (TRS)	0	0		0	0	
Sulfuric Acid Mist (SAM)	0	0		0	0	

**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants:**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

**Greenhouse Gases (GHGs):**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

\* Provide your calculations as an attachment and explain how all process variables and emissions factors were selected.

Note the emission factor(s) employed and document origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.

\*\* AQD Calculated - See 'Help' for more information.

**- Best Available Control Technology (BACT)**

Was a BACT Analysis completed for this unit? No

**- Lowest Achievable Emission Rate (LAER)**

Was a LAER Analysis completed for this unit? No

**- Federal and State Rule Applicability**

**New Source Performance Standards (NSPS)**

New Source Performance Standards are listed under 40 CFR 60 - Standards of Performance for New Stationary Sources.

Unknown

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61)**

National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).

Unknown



**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)**  
*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63.*

Unknown

**Prevention of Significant Deterioration (PSD)**  
*These rules are found under WAQSR Chapter 6, Section 4.*

Not Affected

**Non-Attainment New Source Review**  
*These rules are found under WAQSR Chapter 6, Section 13.*

Not Affected

- **Emission Unit Attachments**

Required Attachment	Public Document Id	Attachment Type	Description
	6218	Basis For Determination	CARB Certification
	6219	Basis For Determination	Generator Specifications



**Section II - Specific Air Contaminant Source Information**

**AQD EU ID:** FUG003

**AQD EU description:**

**Company EU ID:** FUG 3

**Company EU Description:** TMFU 4577-15-44SH-H Fugitive emissions

- **Source Installation or Modification Schedule** – Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):

Modification

**When will you begin to modify the air contaminant source?**

12/14/2014

- **Emission Unit Type Specific Information**

Emission Unit Type : Fugitive

Type of Fugitive Emission : Fugitive Leaks at O&G

Equipment and Service Type	Number of Each Equipment Type	Leak Rate (ppm)	Percent VOC
Connector; Gas	50	7.60	0.076
Connector; Light Oil	50	53.20	0.530
Connector; Water/Light Oil	25	0.01	0.000
Flange; Gas	50	15.20	0.200
Flange; Light Oil	50	30.40	0.400
Flange; Water/Light Oil	25	0.01	0.000
Pump; Gas	1	0.01	0.000
Pump; Light Oil	1	0.01	0.000
Pump; Water/Light Oil	1	0.01	0.000
Valve; Gas	65	175.00	2.300
Valve; Light Oil	35	418.00	5.500
Valve; Water/Light Oil	35	0.01	0.000
Other; Gas	12	61.00	0.610
Other; Light Oil	25	928.00	12.200
Other; Water/Light Oil	25	205.00	2.700

- **Potential Operating Schedule** – Provide the operating schedule for this emissions unit

Hours/day : 24

Hours/year : 8760

- **Emissions Information** "Potential to emit" means the maximum capacity of a source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations promulgated thereunder.

Basis for Determination Options:



- Manufacturer Data
- Test results for this source
- Similar source test results
- GRICalc
- Tanks Program
- AP-42
- Other. If this is selected, attach a document with a description of the method used.

**Criteria Pollutants :**

Pollutant	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
		Potential to Emit (PTE)*	Units*			
Particulate emissions (PE/PM) (formerly particulate matter, PM)	0	0		0	0	
PM # 10 microns in diameter (PE/PM10)	0	0		0	0	
PM # 2.5 microns in diameter (PE/PM2.5)	0	0		0	0	
Sulfur dioxide (SO2)	0	0		0	0	
Nitrogen oxides (NOx)	0	0		0	0	
Carbon monoxide (CO)	0	0		0	0	
Volatile organic compounds (VOC)	0	0		0.25	0	Other
Lead (Pb)	0	0		0	0	
Total Hazardous Air Pollutants (HAPs)	0	0		0	0	
Fluoride (F)	0	0		0	0	
Hydrogen Sulfide (H2S)	0	0		0	0	
Mercury (Hg)	0	0		0	0	
Total Reduced Sulfur (TRS)	0	0		0	0	
Sulfuric Acid Mist (SAM)	0	0		0	0	

**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants:**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

**Greenhouse Gases (GHGs):**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

\* Provide your calculations as an attachment and explain how all process variables and emissions factors were selected. Note the emission factor(s) employed and document origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.



\*\* AQD Calculated - See 'Help' for more information.

- **Best Available Control Technology (BACT)**

Was a BACT Analysis completed for this unit? No

- **Lowest Achievable Emission Rate (LAER)**

Was a LAER Analysis completed for this unit? No

- **Federal and State Rule Applicability**

**New Source Performance Standards (NSPS)** Unknown  
*New Source Performance Standards are listed under 40 CFR 60 - Standards of Performance for New Stationary Sources.*

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61)** Unknown  
*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)** Unknown  
*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63.*

**Prevention of Significant Deterioration (PSD)** Not Affected  
*These rules are found under WAQSR Chapter 6, Section 4.*

**Non-Attainment New Source Review** Not Affected  
*These rules are found under WAQSR Chapter 6, Section 13.*

- **Emission Unit Attachments**

Required Attachment	Public Document Id	Attachment Type	Description
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**Section II - Specific Air Contaminant Source Information**

**AQD EU ID:** HET003

**AQD EU description:**

**Company EU ID:** H-3

**Company EU Description:** TMFU 4577-15-44SH-H heater treater

- **Source Installation or Modification Schedule** – Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):

Modification

**When will you begin to modify the air contaminant source?**

12/14/2014

- **Emission Unit Type Specific Information**

Emission Unit Type : Heater/Chiller

Fuel Sulfur Content : 0.01

Units : ppm

- **Potential Operating Schedule** – Provide the operating schedule for this emissions unit

Hours/day : 24

Hours/year : 8760

- **Emissions Information** "Potential to emit" means the maximum capacity of a source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations promulgated thereunder.

Basis for Determination Options:

- *Manufacturer Data*
- *Test results for this source*
- *Similar source test results*
- *GRICalc*
- *Tanks Program*
- *AP-42*
- *Other. If this is selected, attach a document with a description of the method used.*

**Criteria Pollutants :**

Pollutant	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
		Potential to Emit (PTE)*	Units*			
Particulate emissions (PE/PM) (formerly particulate matter, PM)	0	0		0.01	0.02	AP-42
PM # 10 microns in diameter (PE/PM10)	0	0		0	0	
PM # 2.5 microns in diameter (PE/PM2.5)	0	0		0	0	
Sulfur dioxide (SO2)	0	0		0	0	AP-42
Nitrogen oxides (NOx)	0	0		0.07	0.3	AP-42



Carbon monoxide (CO)	0	0		0.06	0.26	AP-42
Volatile organic compounds (VOC)	0	0		0	0.02	AP-42
Lead (Pb)	0	0		0	0	
Total Hazardous Air Pollutants (HAPs)	0	0		0	0	
Fluoride (F)	0	0		0	0	
Hydrogen Sulfide (H <sub>2</sub> S)	0	0		0	0	
Mercury (Hg)	0	0		0	0	
Total Reduced Sulfur (TRS)	0	0		0	0	
Sulfuric Acid Mist (SAM)	0	0		0	0	

**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants:**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

**Greenhouse Gases (GHGs):**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

\* Provide your calculations as an attachment and explain how all process variables and emissions factors were selected. Note the emission factor(s) employed and document origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.

\*\* AQD Calculated - See 'Help' for more information.

**- Best Available Control Technology (BACT)**

Was a BACT Analysis completed for this unit? No

**- Lowest Achievable Emission Rate (LAER)**

Was a LAER Analysis completed for this unit? No

**- Federal and State Rule Applicability**

**New Source Performance Standards (NSPS)** Unknown  
*New Source Performance Standards are listed under 40 CFR 60 - Standards of Performance for New Stationary Sources.*

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61)** Unknown  
*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)** Unknown  
*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63.*



**Prevention of Significant Deterioration (PSD)** Not Affected  
*These rules are found under WAQSR Chapter 6, Section 4.*

**Non-Attainment New Source Review** Not Affected  
*These rules are found under WAQSR Chapter 6, Section 13.*

- **Emission Unit Attachments**

Required Attachment	Public Document Id	Attachment Type	Description
x	6220	Emissions Calculations	Emission Calculations



**Section II - Specific Air Contaminant Source Information**

**AQD EU ID:** LUD003

**AQD EU description:**

**Company EU ID:** TL-3

**Company EU Description:** TMFU 4577-15-44SH-H truck loading

- **Source Installation or Modification Schedule** – Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):

Modification

**When will you begin to modify the air contaminant source?**

12/14/2014

- **Emission Unit Type Specific Information**

Emission Unit Type : Loading/Unloading/Dump

Maximum Hourly Throughput 14

Units : barrels/hr

Detailed Description of Loading/Unloading/Dump Source : This is the transfer of oil from storage tanks to tanker trucks for transport offsite.

*\*Provide detailed calculations documenting the potential emissions and emission factors used to calculate emissions from this source.*

- **Potential Operating Schedule** – Provide the operating schedule for this emissions unit

Hours/day : 10

Hours/year : 3650

- **Emissions Information** "Potential to emit" means the maximum capacity of a source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations promulgated thereunder.

Basis for Determination Options:

- *Manufacturer Data*
- *Test results for this source*
- *Similar source test results*
- *GRICalc*
- *Tanks Program*
- *AP-42*
- *Other. If this is selected, attach a document with a description of the method used.*

**Criteria Pollutants :**

Pollutant	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
		Potential to Emit (PTE)*	Units*			
Particulate emissions (PE/PM) (formerly particulate matter, PM)	0	0		0	0	
PM # 10 microns in	0	0		0	0	



diameter (PE/PM10)						
PM # 2.5 microns in diameter (PE/PM2.5)	0	0		0	0	
Sulfur dioxide (SO2)	0	0		0	0	
Nitrogen oxides (NOx)	0	0		0	0	
Carbon monoxide (CO)	0	0		0	0	
Volatile organic compounds (VOC)	0	0		27.34	2.28	Other
Lead (Pb)	0	0		0	0	
Total Hazardous Air Pollutants (HAPs)	0	0		2.48	0.21	Other
Fluoride (F)	0	0		0	0	
Hydrogen Sulfide (H2S)	0	0		0	0	
Mercury (Hg)	0	0		0	0	
Total Reduced Sulfur (TRS)	0	0		0	0	
Sulfuric Acid Mist (SAM)	0	0		0	0	

**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants:**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

**Greenhouse Gases (GHGs):**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

\* Provide your calculations as an attachment and explain how all process variables and emissions factors were selected. Note the emission factor(s) employed and document origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.

\*\* AQD Calculated - See 'Help' for more information.

**- Best Available Control Technology (BACT)**

Was a BACT Analysis completed for this unit? No

**- Lowest Achievable Emission Rate (LAER)**

Was a LAER Analysis completed for this unit? No

**- Federal and State Rule Applicability**

**New Source Performance Standards (NSPS)** Unknown  
*New Source Performance Standards are listed under 40 CFR 60 - Standards of Performance for New Stationary Sources.*

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61)** Unknown  
*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*



**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)**  
*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63.*

Unknown

**Prevention of Significant Deterioration (PSD)**  
*These rules are found under WAQSR Chapter 6, Section 4.*

Not Affected

**Non-Attainment New Source Review**  
*These rules are found under WAQSR Chapter 6, Section 13.*

Not Affected

- **Emission Unit Attachments**

Required Attachment	Public Document Id	Attachment Type	Description
x	6221	Emissions Calculations	Emission Calculations



**Section II - Specific Air Contaminant Source Information**

**AQD EU ID:** PNE003

**AQD EU description:**

**Company EU ID:** PNE 3

**Company EU Description:** TMFU 4577-15-44SH-H Pneumatic transducer - only emits VOC's during actuation of the emergency valve

- **Source Installation or Modification Schedule** – Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):

Modification

**When will you begin to modify the air contaminant source?**

12/14/2014

- **Emission Unit Type Specific Information**

Emission Unit Type : Pneumatic Equipment

Motive Force : Field Gas

VOC Content (%) : 19.000

HAP Content (%) : 5.600

- **Potential Operating Schedule** – Provide the operating schedule for this emissions unit

Hours/day : 24

Hours/year : 8760

- **Emissions Information** "Potential to emit" means the maximum capacity of a source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations promulgated thereunder.

Basis for Determination Options:

- *Manufacturer Data*
- *Test results for this source*
- *Similar source test results*
- *GRICalc*
- *Tanks Program*
- *AP-42*
- *Other. If this is selected, attach a document with a description of the method used.*

**Criteria Pollutants :**

Pollutant	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
		Potential to Emit (PTE)*	Units*			
Particulate emissions (PE/PM) (formerly particulate matter, PM)	0	0		0	0	
PM # 10 microns in diameter (PE/PM10)	0	0		0	0	



PM # 2.5 microns in diameter (PE/PM2.5)	0	0		0	0	
Sulfur dioxide (SO2)	0	0		0	0	
Nitrogen oxides (NOx)	0	0		0	0	
Carbon monoxide (CO)	0	0		0	0	
Volatile organic compounds (VOC)	0	0		0.15	0.02	Other
Lead (Pb)	0	0		0	0	
Total Hazardous Air Pollutants (HAPs)	0	0		0	0	
Fluoride (F)	0	0		0	0	
Hydrogen Sulfide (H2S)	0	0		0	0	
Mercury (Hg)	0	0		0	0	
Total Reduced Sulfur (TRS)	0	0		0	0	
Sulfuric Acid Mist (SAM)	0	0		0	0	

**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants:**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

**Greenhouse Gases (GHGs):**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

\* Provide your calculations as an attachment and explain how all process variables and emissions factors were selected. Note the emission factor(s) employed and document origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.

\*\* AQD Calculated - See 'Help' for more information.

**- Best Available Control Technology (BACT)**

Was a BACT Analysis completed for this unit? No

**- Lowest Achievable Emission Rate (LAER)**

Was a LAER Analysis completed for this unit? No

**- Federal and State Rule Applicability**

**New Source Performance Standards (NSPS)** Unknown  
*New Source Performance Standards are listed under 40 CFR 60 - Standards of Performance for New Stationary Sources.*

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61)** Unknown  
*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*



**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)**  
*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63.*

Unknown

**Prevention of Significant Deterioration (PSD)**  
*These rules are found under WAQSR Chapter 6, Section 4.*

Not Affected

**Non-Attainment New Source Review**  
*These rules are found under WAQSR Chapter 6, Section 13.*

Not Affected

- **Emission Unit Attachments**

Required Attachment	Public Document Id	Attachment Type	Description
X	6216	Emissions Calculations	Emission Calculations



**Section II - Specific Air Contaminant Source Information**

**AQD EU ID:** TNK003

**AQD EU description:**

**Company EU ID:** 15-44 TNK

**Company EU Description:** TMFU 4577-15-44SH-H (4) 400 bbl oil tanks

- **Source Installation or Modification Schedule** – Select reason(s) for this emissions unit being included in this application (must be completed regardless of date of installation or modification):

Modification

**When will you begin to modify the air contaminant source?**

12/14/2014

- **Emission Unit Type Specific Information**

Emission Unit Type : Storage Tank/Silo

Maximum Hourly Throughput 13.2000

Units : barrels/hr

Is Tank Heated : No

Operating Pressure (psig) : 36.00

Vapor Pressure of Material 8.60  
Stored (psig) :

- **Potential Operating Schedule** – Provide the operating schedule for this emissions unit

Hours/day : 24

Hours/year : 8760

- **Emissions Information** "Potential to emit" means the maximum capacity of a source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation is enforceable by the EPA and the Division. This term does not alter or affect the use of this term for any other purposes under the Act, or the term "capacity factor" as used in Title IV of the Act or the regulations promulgated thereunder.

Basis for Determination Options:

- *Manufacturer Data*
- *Test results for this source*
- *Similar source test results*
- *GRICalc*
- *Tanks Program*
- *AP-42*
- *Other. If this is selected, attach a document with a description of the method used.*

**Criteria Pollutants :**

Pollutant	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
		Potential to Emit (PTE)*	Units*			
Particulate emissions (PE/PM) (formerly particulate matter, PM)	0	0		0	0	
PM # 10 microns in diameter (PE/PM10)	0	0		0	0	



PM # 2.5 microns in diameter (PE/PM2.5)	0	0		0	0	
Sulfur dioxide (SO2)	0	0		0	0	
Nitrogen oxides (NOx)	0	0		0	0	
Carbon monoxide (CO)	0	0		0	0	
Volatile organic compounds (VOC)	0	0		0	0	Tanks Program
Lead (Pb)	0	0		0	0	
Total Hazardous Air Pollutants (HAPs)	0	0		0	0	Tanks Program
Fluoride (F)	0	0		0	0	
Hydrogen Sulfide (H2S)	0	0		0	0	
Mercury (Hg)	0	0		0	0	
Total Reduced Sulfur (TRS)	0	0		0	0	
Sulfuric Acid Mist (SAM)	0	0		0	0	

**Hazardous Air Pollutants (HAPs) and Toxic Air Contaminants:**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

**Greenhouse Gases (GHGs):**

Pollutant	Pollutant Category	Pre-Controlled Potential Emissions (tons/yr)	Efficiency Standards		Potential to Emit (PTE) (lbs/hr)*	Potential to Emit (PTE) (tons/yr)*	Basis for Determination*
			Potential to Emit (PTE)*	Units*			

\* Provide your calculations as an attachment and explain how all process variables and emissions factors were selected. Note the emission factor(s) employed and document origin. Example: AP-42, Table 4.4-3 (8/97); stack test, Method 5, 4/96; mass balance based on MSDS; etc.

\*\* AQD Calculated - See 'Help' for more information.

**- Best Available Control Technology (BACT)**

Was a BACT Analysis completed for this unit? No

**- Lowest Achievable Emission Rate (LAER)**

Was a LAER Analysis completed for this unit? No

**- Federal and State Rule Applicability**

**New Source Performance Standards (NSPS)** Unknown  
*New Source Performance Standards are listed under 40 CFR 60 - Standards of Performance for New Stationary Sources.*

**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 61)** Unknown  
*National Emissions Standards for Hazardous Air Pollutants (NESHAP Part 61) are listed under 40 CFR 61. (These include asbestos, benzene, beryllium, mercury, and vinyl chloride).*



**National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63)**      Unknown  
*National Emission Standards for Hazardous Air Pollutants (NESHAP Part 63) standards are listed under 40 CFR 63.*

**Prevention of Significant Deterioration (PSD)**      Not Affected  
*These rules are found under WAQSR Chapter 6, Section 4.*

**Non-Attainment New Source Review**      Not Affected  
*These rules are found under WAQSR Chapter 6, Section 13.*

- **Emission Unit Attachments**

Required Attachment	Public Document Id	Attachment Type	Description
	6217	Emissions Calculations	TMFU 4577-15-44SH-H TANKS



**Facility Detail Report**  
**Facility Name: TMFU 4577-10-44 PAD**  
**ID: F026163**



**Facility : F026163**

Jun 26 2015, 14:10:38

- **Facility Information**

Facility ID: F026163  
 FacilityName: TMFU 4577-10-44 PAD  
 Facility Description: Well PAD consisting of three wells  
 Company Name: Anadarko E&P Onshore LLC  
 Operating Status: Operating  
 Facility Class: Minor  
 CERR Class: NON

AFS:  
 Facility Type: Production Site

- **Location**

Physical Address	City	County	Lat/Long	PLSS	Effective Date
Section 10, 45N, 77W	Johnson County	Johnson	43.88163/-106.09278	QSESE-S10-T45N-R77W	07/15/2014

Location Detail For : Section 10, 45N, 77W

Latitude: 43.88163 Longitude: -106.09278  
 Quarter Quarter: SE Quarter: SE  
 Section: 10  
 Township: 45N Range: 77W  
 County: Johnson State: Wyoming  
 Distict: District 3  
 Physical Address 1: Section 10, 45N, 77W Physical Address 2:  
 City: Johnson County Zip: 82834  
 Effective Date: 07/15/2014

- **API**

API
1929937
1929938
1929939

- **Notes**

User Name	Date	Note
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- **NAICS Codes**

211111 Crude Petroleum and Natural Gas Extraction (SIC 1311)

- **Contacts**

Contact Type	Contact Person	Phone Number	Email	Start Date	End Date
Environmental contact	Wolberg, Peter	(720)929-6105	Peter.Wolberg@anadarko.com	04/08/2015	

Contact Detail For : Wolberg, Peter

Prefix: Mr.

First Name: Peter



**Facility Detail Report**  
**Facility Name: TMFU 4577-10-44 PAD**  
**ID: F026163**

- **Facility Information**

Facility ID: F026163  
 FacilityName: TMFU 4577-10-44 PAD  
 Facility Description: Well PAD consisting of three wells  
 Company Name: Anadarko E&P Onshore LLC  
 Operating Status: Operating AFS:  
 Facility Class: Minor Facility Type: Production Site  
 CERR Class: NON

- **Location**

Physical Address	City	County	Lat/Long	PLSS	Effective Date
Section 10, 45N, 77W	Johnson County	Johnson	43.88163/-106.09278	QSESE-S10-T45N-R77W	07/15/2014

Location Detail For : Section 10, 45N, 77W

Latitude: 43.88163 Longitude: -106.09278  
 Quarter Quarter: SE Quarter: SE  
 Section: 10  
 Township: 45N Range: 77W  
 County: Johnson State: Wyoming  
 Distict: District 3  
 Physical Address 1: Section 10, 45N, 77W Physical Address 2:  
 City: Johnson County Zip: 82834  
 Effective Date: 07/15/2014

- **API**

API
1929937
1929938
1929939

- **Notes**

User Name	Date	Note

- **NAICS Codes**

211111 Crude Petroleum and Natural Gas Extraction (SIC 1311)

- **Contacts**

Contact Type	Contact Person	Phone Number	Email	Start Date	End Date
Environmental contact	Wolberg, Peter	(720)929-6105	Peter.Wolberg@anadarko.com	04/08/2015	

Contact Detail For : Wolberg, Peter

Prefix: Mr.

First Name: Peter

Middle Name:

Last Name: Wolberg

Suffix:

Company Title:

Contact's Company Name: Anadarko E&P Onshore LLC

Address 1: 1099 18th St., Suite 1800

Address 2:

City: Denver

Zip Code: 80202

State: Colorado

Work Phone No: (720) 929-6105

Secondary Phone No.:

Address 2:

Secondary Ext. No.:

Mobile Phone No.:

Pager No.:

Fax No:

Pager PIN No.:

Email: Peter.Wolberg@anadarko.com

Email Pager Address:

- Rules & Regs

Subject to Part 60 NSPS:

Subject to 112(r) Accidental Release Prevention:

Subject to Part 61 NESHAP:

Subject to non-attainment NSR:

Subject Part 63 NESHAP:

Subject to PSD:

Subject to Title IV Acid Rain:

- Attachments

Description	Type	Modified By	Modified Date
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- Version

Version ID	Version Start Date	Version End Date	Preserved
CURRENT	06/24/2015		X
29930	04/08/2015	06/24/2015	X
27343	07/15/2014	04/08/2015	X

## Emission Unit : ENG001

Sep 4 2015, 06:43:20

**- Emission Unit Information**

AQD Emissions Unit ID: ENG001  
 Emission Unit Type: Engine  
 Name Plate Rating: 346.00 Units: hp  
 Site Rating: 346.00 Units: hp  
 Primary Fuel Type: Diesel Secondary Fuel Type: Diesel  
 Model Name and Number: 6090HF485 Engine: Compression Ignition  
 AQD Description:  
 Company Equipment ID: GEN001  
 Company Equipment Description: Portable Power Generator  
 Operating Status: Operating  
  
 Initial Construction Commencement 01/25/2014  
 Date:  
 Initial Operation Commencement 01/25/2014  
 Date:  
 Most Recent Construction/Modification Commencement Date:  
 Most Recent Operation Commencement Date:

**- Serial Number Tracking**

Serial Number	Manufacturer Name	Construction/Installation Commencement Date	Operation Commencement/Start-up Date	Order Date	Manufacture Date	Shutdown Date	Removal Date
RG6090K088 225	John Deere	06/28/2014	06/28/2014		09/03/2011		

**- Permitted Emissions**

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

**- Processes**

**- Emission Process Information**

Process ID: PRC017  
 Process Name: Generator  
 Company Process Description: Generator  
 Source Classification Code (SCC): 2-02-001-02

## Emission Unit : FLR001

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: FLR001

Emission Unit Type: Flare

Maximum Design Capacity: 120000.0

Units: scf/day

Minimum Design Capacity: 0.01

Units: scf/day

Pilot Gas Volume (scf/min): 0.3400

AQD Description:

Company Equipment ID: FLR-1

Company Equipment Description: TMFU 4577-10-44 PAD enclosed flare to control tank vapors

Operating Status: Operating

Initial Construction Commencement Date: 01/25/2014

Initial Operation Commencement Date: 01/25/2014

Most Recent Construction/Modification Commencement Date:

Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

### - Processes

#### - Emission Process Information

Process ID: PRC002

Process Name: Flare

Company Process Description: Flare

Source Classification Code (SCC): 3-10-002-05

## Emission Unit : FUG001

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: FUG001

Emission Unit Type: Fugitive

AQD Description:

Company Equipment ID: FUG 1

Company Equipment Description: TMFU 4577-10-12SH-H Fugitive emissions

Operating Status: Operating

Initial Construction Commencement Date: 01/25/2014

Initial Operation Commencement Date: 01/25/2014

Most Recent Construction/Modification Commencement Date:

Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC001

Process Name: Fugitives

Company Process Description: Fugitive emissions from leaks

Source Classification Code (SCC): 3-10-888-11

## Emission Unit : FUG002

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: FUG002

Emission Unit Type: Fugitive

AQD Description:

Company Equipment ID: FUG 2

Company Equipment Description: TMFU 4577-15-14SH-H Fugitive emissions

Operating Status: Operating

Initial Construction Commencement Date: 01/25/2014

Initial Operation Commencement Date: 01/25/2014

Most Recent Construction/Modification Commencement Date:

Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC003

Process Name: Fugitives

Company Process Description: Fugitive emissions from leaks

Source Classification Code (SCC): 3-10-888-11

## Emission Unit : FUG003

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: FUG003

Emission Unit Type: Fugitive

AQD Description:

Company Equipment ID: FUG 3

Company Equipment Description: TMFU 4577-15-44SH-H Fugitive emissions

Operating Status: Operating

Initial Construction Commencement Date: 12/11/2014

Initial Operation Commencement Date: 12/11/2014

Most Recent Construction/Modification Commencement Date:

Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC004

Process Name: Fugitives

Company Process Description: Fugitive emissions from leaks

Source Classification Code (SCC): 3-10-888-11

# Emission Unit : HET001

Sep 4 2015, 06:43:20

## - Emission Unit Information

AQD Emissions Unit ID: HET001  
Emission Unit Type: Heater/Chiller  
Firing Type: Indirect  
Heat Input Rating: 0.5  
Units: MMBtu/hr  
Primary Fuel Type: Pipeline Grade Natural Gas  
Secondary Fuel Type: Pipeline Grade Natural Gas  
Heat Content of Fuel (BTU/scf): 1502  
AQD Description:  
Company Equipment ID: H-1  
Company Equipment Description: TMFU 4577-10-12SH-H heater treater  
Operating Status: Operating  
Initial Construction Commencement Date: 01/25/2014  
Initial Operation Commencement Date: 01/25/2014  
Most Recent Construction/Modification Commencement Date:  
Most Recent Operation Commencement Date:

## - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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## - Processes

### - Emission Process Information

Process ID: PRC005  
Process Name: Heater Treater  
Company Process Description: Heater Treater  
Source Classification Code (SCC): 3-10-001-07

## Emission Unit : HET002

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: HET002  
Emission Unit Type: Heater/Chiller  
Firing Type: Indirect  
Heat Input Rating: 0.5 Units: MMBtu/hr  
Primary Fuel Type: Pipeline Grade Natural Gas Secondary Fuel Type: Pipeline Grade Natural Gas  
Heat Content of Fuel (BTU/scf): 1446  
AQD Description:  
Company Equipment ID: H-2  
Company Equipment Description: TMFU 4577-15-14SH-H heater treater  
Operating Status: Operating  
Initial Construction Commencement 01/25/2014  
Date:  
Initial Operation Commencement 01/25/2014  
Date:  
Most Recent  
Construction/Modification  
Commencement Date:  
Most Recent Operation  
Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

### - Processes

#### - Emission Process Information

Process ID: PRC006  
Process Name: Heater Treater  
Company Process Description: Heater Treater  
Source Classification Code (SCC): 3-10-001-07

**Emission Unit : HET003**

Sep 4 2015, 06:43:20

**- Emission Unit Information**

AQD Emissions Unit ID: HET003  
 Emission Unit Type: Heater/Chiller  
 Firing Type: Indirect  
 Heat Input Rating: 0.5  
 Primary Fuel Type: Pipeline Grade Natural Gas  
 Heat Content of Fuel (BTU/scf): 1446  
 AQD Description:  
 Company Equipment ID: H-3  
 Company Equipment Description: TMFU 4577-15-44SH-H heater treater  
 Operating Status: Operating  
 Initial Construction Commencement Date: 12/11/2014  
 Initial Operation Commencement Date: 12/11/2014  
 Most Recent Construction/Modification Commencement Date:  
 Most Recent Operation Commencement Date:

Units: MMBtu/hr

Secondary Fuel Type: Pipeline Grade Natural Gas

**- Permitted Emissions**

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

**- Processes**

**- Emission Process Information**

Process ID: PRC007  
 Process Name: Heater Treater  
 Company Process Description: Heater Treater  
 Source Classification Code (SCC): 3-10-001-07

## Emission Unit : LUD001

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: LUD001  
Emission Unit Type: Loading/Unloading/Dump  
Type of Material: liquid  
Material Description: Oil transfer  
Maximum Annual Throughput: 58035 Units: barrels/yr  
AQD Description:  
Company Equipment ID: TL-1  
Company Equipment Description: TMFU 4577-10-12SH-H truck loading  
Operating Status: Operating  
Initial Construction Commencement Date: 01/25/2014  
Initial Operation Commencement Date: 01/25/2014  
Most Recent Construction/Modification Commencement Date:  
Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC008  
Process Name: Storage Tank Loadout  
Company Process Description: Storage Tank Loadout  
Source Classification Code (SCC): 4-06-001-32

## Emission Unit : LUD002

Sep 4 2015, 06:43:20

**- Emission Unit Information**

AQD Emissions Unit ID: LUD002  
 Emission Unit Type: Loading/Unloading/Dump  
 Type of Material: liquid  
 Material Description: Oil transfer  
 Maximum Annual Throughput: 115705 Units: barrels/yr  
 AQD Description:  
 Company Equipment ID: TL-2  
 Company Equipment Description: TMFU 4577-15-14SH-H truck loading  
 Operating Status: Operating  
 Initial Construction Commencement Date: 01/25/2014  
 Initial Operation Commencement Date: 01/25/2014  
 Most Recent Construction/Modification Commencement Date:  
 Most Recent Operation Commencement Date:

**- Permitted Emissions**

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

**- Processes**

**- Emission Process Information**

Process ID: PRC009  
 Process Name: Storage Tank Loadout  
 Company Process Description: Storage Tank Loadout  
 Source Classification Code (SCC): 4-06-001-32

## Emission Unit : LUD003

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: LUD003

Emission Unit Type: Loading/Unloading/Dump

Type of Material: liquid

Material Description: Oil transfer

Maximum Annual Throughput: 50005

Units: barrels/yr

AQD Description:

Company Equipment ID: TL-3

Company Equipment Description: TMFU 4577-15-44SH-H truck loading

Operating Status: Operating

Initial Construction Commencement Date: 12/11/2014

Initial Operation Commencement Date: 12/11/2014

Most Recent  
Construction/Modification  
Commencement Date:

Most Recent Operation  
Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC010

Process Name: Storage Tank Loadout

Company Process Description: Storage Tank Loadout

Source Classification Code (SCC): 4-06-001-32

## Emission Unit : PNE001

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: PNE001

Emission Unit Type: Pneumatic Equipment

Type of Equipment: Controller (Intermittent)

Bleed rate (cu. ft/hr): 0.0100

Gas Consumption Rate (cu. ft/hr):

AQD Description:

Company Equipment ID: PNE 1

Company Equipment Description: TMFU 4577-10-12SH-H Pneumatic transducer - only emits VOC's during actuation of the emergency valve

Operating Status: Operating

Initial Construction Commencement Date: 01/25/2014

Initial Operation Commencement Date: 01/25/2014

Most Recent Construction/Modification Commencement Date:

Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

### - Processes

#### - Emission Process Information

Process ID: PRC012

Process Name: Pneumatic Device

Company Process Description: Pneumatic Device

Source Classification Code (SCC): 3-10-001-99

## Emission Unit : PNE002

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: PNE002

Emission Unit Type: Pneumatic Equipment

Type of Equipment: Contoller (Intermittent)

Bleed rate (cu. ft/hr): 0.0100

Gas Consumption Rate (cu. ft/hr):

AQD Description:

Company Equipment ID: PNE 2

Company Equipment Description: TMFU 4577-15-14SH-H Pneumatic transducer - only emits VOC's during actuation of the emergency valve

Operating Status: Operating

Initial Construction Commencement Date: 01/25/2014

Initial Operation Commencement Date: 01/25/2014

Most Recent Construction/Modification Commencement Date:

Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC013

Process Name: Pneumatic Device

Company Process Description: Pneumatic Device

Source Classification Code (SCC): 3-10-001-99

## Emission Unit : PNE003

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: PNE003

Emission Unit Type: Pneumatic Equipment

Type of Equipment: Contoller (Intermittent)

Bleed rate (cu. ft/hr): 0.0100

Gas Consumption Rate (cu. ft/hr):

AQD Description:

Company Equipment ID: PNE 3

Company Equipment Description: TMFU 4577-15-44SH-H Pneumatic transducer - only emits VOC's during actuation of the emergency valve

Operating Status: Operating

Initial Construction Commencement Date: 12/11/2014

Initial Operation Commencement Date: 12/11/2014

Most Recent Construction/Modification Commencement Date:

Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC011

Process Name: Pneumatic Device

Company Process Description: Pneumatic Device

Source Classification Code (SCC): 3-10-001-99

## Emission Unit : TNK001

Sep 4 2015, 06:43:20

### - Emission Unit Information

AQD Emissions Unit ID: TNK001  
Emission Unit Type: Storage Tank/Silo  
Material Type: Liquid  
Description of Material Stored: Crude oil  
Capacity: 1600 Units: barrels  
Maximum Throughput: 159.0000 Units: barrels/day  
AQD Description:  
Company Equipment ID: 10-12 TNK  
Company Equipment Description: TMFU 4577-10-12SH-H (4) 400 bbl oil tanks  
Operating Status: Operating  
Initial Construction Commencement Date: 01/25/2014  
Initial Operation Commencement Date: 01/25/2014  
Most Recent Construction/Modification Commencement Date:  
Most Recent Operation Commencement Date:

### - Permitted Emissions

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments
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### - Processes

#### - Emission Process Information

Process ID: PRC014  
Process Name: Oil Storage Tank  
Company Process Description: Oil Storage Tank  
Source Classification Code (SCC): 4-04-003-12

## Emission Unit : TNK002

Sep 4 2015, 06:43:20

**- Emission Unit Information**

AQD Emissions Unit ID: TNK002  
 Emission Unit Type: Storage Tank/Silo  
 Material Type: Liquid  
 Description of Material Stored: Crude oil  
 Capacity: 1600 Units: barrels  
 Maximum Throughput: 317.0000 Units: barrels/day  
 AQD Description:  
 Company Equipment ID: 15-14 TNK  
 Company Equipment Description: TMFU 4577-15-14SH-H (4) 400 bbl oil tanks  
 Operating Status: Operating

Initial Construction Commencement 01/25/2014  
 Date:

Initial Operation Commencement 01/25/2014  
 Date:

Most Recent  
 Construction/Modification  
 Commencement Date:

Most Recent Operation  
 Commencement Date:

**- Permitted Emissions**

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

**- Processes**

**- Emission Process Information**

Process ID: PRC015  
 Process Name: Oil Storage Tank  
 Company Process Description: Oil Storage Tank  
 Source Classification Code (SCC): 4-04-003-12

## Emission Unit : TNK003

Sep 4 2015, 06:43:20

**- Emission Unit Information**

AQD Emissions Unit ID: TNK003  
 Emission Unit Type: Storage Tank/Silo  
 Material Type: Liquid  
 Description of Material Stored: Crude oil  
 Capacity: 1600 Units: barrels  
 Maximum Throughput: 137.0000 Units: barrels/day  
 AQD Description:  
 Company Equipment ID: 15-44 TNK  
 Company Equipment Description: TMFU 4577-15-44SH-H (4) 400 bbl oil tanks  
 Operating Status: Operating

Initial Construction Commencement 12/11/2014  
 Date:

Initial Operation Commencement 12/11/2014  
 Date:

Most Recent  
 Construction/Modification  
 Commencement Date:

Most Recent Operation  
 Commencement Date:

**- Permitted Emissions**

Pollutant	Potential Emissions (Lbs/hour)	Potential Emissions (Tons/Year)	Allowable Emissions (Lbs/Hour)	Allowable Emissions (Tons/Year)	Comments

**- Processes**

**- Emission Process Information**

Process ID: PRC016  
 Process Name: Oil Storage Tank  
 Company Process Description: Oil Storage Tank  
 Source Classification Code (SCC): 4-04-003-12