

DRAFT/PROPOSED

**OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION**

MEMORANDUM

March 4, 2021

TO: Phillip Fielder, P.E., Chief Engineer

THROUGH: Rick Groshong, Environmental Programs Mgr., Compliance & Enforcement

THROUGH: Phil Martin, P.E., Engineering Manager, Existing Source Permits Section

THROUGH: Joseph K. Wills, P.E., Engineering Section

FROM: Junru Wang, E.I., Existing Source Permits Section

SUBJECT: Evaluation of Permit Application No. **2019-1308-TVR**
MarkWest Oklahoma Gas Company, L.L.C.
Buffalo Creek Processing Plant (BCPP) (SIC 1321/NAICS 211130)
Facility ID: 9798
NW/4 of Section 2, T10N, R25W, Beckham County
Latitude: 35.37370°N; Longitude: 99.82140°W
Directions: from Junction of I-40 and SH 152 travel 14 miles northwest on Highway 152 and then 0.5 miles south on County Road N1770, the facility is located on east side of the road.

SECTION I. INTRODUCTION

MarkWest Oklahoma Gas Company, L.L.C., (MarkWest or the applicant) has requested a renewal of their Title V operating permit for the Buffalo Creek Processing Plant. The facility is currently operating under Permit No. 2012-1026-TV (M-6), issued on December 4, 2018, and Permit No. 2012-1026-C (M-7), issued on August 10, 2020. The Title V renewal will incorporate all of the changes that were authorized by Permit No. 2012-1026-C (M-7). MarkWest has replaced combustion turbine T-1 according to Specific Condition 3 of Permit No. 2012-1026-C (M-7) and provided replacement notifications as required. There will be no emission limitation changes at the facility. The replacement turbine will be reflected in this application. There are no other physical or operational changes proposed in this permit application. This facility is a minor source for Prevention of Significant Deterioration (PSD) and an area source of Hazardous Air Pollutants (HAPs).

SECTION II. FACILITY DESCRIPTION

The natural gas plant has nine natural gas-fired reciprocating internal combustion engines, two natural gas-fired turbines, a 240-MMSCFD amine unit, a 28 MMBTUH regeneration heater, an acid gas flare, a main plant flare, three enclosed flares, and associated support operations.

The natural gas inlet stream from wells in the surrounding area enters the facility through an inlet separator. Liquids from the inlet gas stream are first sent to the stabilizer unit, which is designed to process liquid hydrocarbons by removing water and separating the lighter hydrocarbons from the heavier hydrocarbons. Water is sent to the produced water system and hydrocarbon liquids are sent to a series of filters to remove impurities present in the stream. The hydrocarbon liquids are sent to the stabilizer reboiler, which uses hot oil to partially vaporize the liquids. The hot stabilized condensate is separated out in the weir section of the reboiler, flows through the stabilizer product cooler, and is then sent to condensate product storage. Hydrocarbon vapors from the separator are sent to the stabilizer overhead compressor system and then sent back to the inlet gas stream. In the produced water system, liquid flows to a high pressure separator. The liquid then flows through a gun barrel separator and then to the produced water tanks. The condensate is loaded out by truck for sale and the water is loaded out by truck for disposal.

The inlet gas stream flows first to the amine unit for CO₂ removal. The amine solution chemically reacts by absorbing CO₂ from the gas. Treated gas from the scrubber is sent to the dehydration unit. The liquid from the scrubber is sent to the amine regeneration unit. The rich amine at the bottom of the amine contactor enters the amine regeneration unit as it flashes across the level control valve to low pressure. The flashed liquids flow to the amine flash tank where the hydrocarbon vapors are released under pressure control to the flare. CO₂ rich water vapors from the overhead of the amine still are condensed in the amine still reflux condenser. The resulting water and CO₂ stream flows to the amine still reflux accumulator where CO₂ gases are vented under pressure control to the flare.

After exiting the amine unit, the inlet gas stream flows to the molecular sieve dehydration unit for water removal. Water vapor is absorbed and retained within the molecular sieve during the dehydration cycle. Regeneration of the molecular sieve is accomplished using an inlet gas stream. The molecular sieve is heated with regeneration gas until complete regeneration of the absorption catalyst is achieved.

After dehydration, the inlet gas is processed in a cryogenic liquid recovery unit. The cryogenic unit is designed to recover ethane and heavier components contained in the feed gas while operating in the ethane recovery mode and propane and heavier components contained in the feed gas while operating in the propane recovery mode. Cooled gas goes to the residue gas compressors where the pressure is further increased to meet the required pipeline delivery specifications. The cryogenic unit was designed to switch from ethane recovery to ethane rejection mode. Due to the richness of the gas, a mechanical refrigeration system is provided to supplement the cooling of the feed gas. The refrigeration system is a closed loop system with two rotary screw refrigeration compressors driven by electric motors. Propane is utilized as the refrigerant.

SECTION III. EQUIPMENT

BCPP-EUG A. Reciprocating Internal Combustion Engines

EU	Point	Make/Model	HP	Serial #	Mfg. Date
C-1	MC3399	Caterpillar G3608LE ⁽¹⁾	2,370	BEN00541	1/09
C-2	MC3400	Caterpillar G3608LE ⁽¹⁾	2,370	BEN00559	3/09
C-3	MC3401	Caterpillar G3608LE ⁽¹⁾	2,370	BEN00554	3/09
C-4	MC3402	Caterpillar G3608LE ⁽¹⁾	2,370	BEN00549	2/09

BCPP-EUG A. Reciprocating Internal Combustion Engines

EU	Point	Make/Model	HP	Serial #	Mfg. Date
C-5	MC3277	Caterpillar G3606LE ⁽¹⁾	1,775	4ZS01803	5/13
C-6	MC3279	Caterpillar G3606LE ⁽¹⁾	1,775	4ZS01802	5/13
C-7	MC3387	Caterpillar G3606LE ⁽¹⁾	1,775	4ZS01100	12/08
C-8	MC4145	Caterpillar G3606LE ⁽¹⁾	1,775	4ZS01393	7/10
C-9	MC4289	Caterpillar G3606LE ⁽¹⁾	1,775	4ZS01292	9/09

⁽¹⁾ Equipped with oxidation catalyst.

BCPP-EUG B. Combustion Turbines

EU	Point	Make/Model	HP	Serial #	Mfg. Date
T-1	T-1	Solar Taurus 70-10802S	10,862	OHE20-B4569	6/5/20
T-2	T-2	Solar Taurus 70-10802SA	11,107	OHD 18B4908	4/18

BCPP-EUG C. Gas-Fired Heater

EU	Point	Description	MMBTUH	Const. Date
H-1	H-1	Regeneration Heater	28.0	2013

BCPP-EUG D. Amine Unit

EU	Point	Name	Throughput	Const. Date
AMINE-1	AMINE-1	Amine Unit	240 MMSCFD	2013

BCPP-EUG E. Flares

EU	Point	Emission Unit	Const. Date
FLARE-1	FLARE-1	Acid Gas Flare	2013
FLARE-2	FLARE-2	Main Plant Flare	2013
EFLARE-1	EFLARE-1	Condensate Tanks/Truck Loading Enclosed Flare	2013
EFLARE-2	EFLARE-2	Condensate Tanks/Truck Loading Enclosed Flare	2013
EFLARE-3	EFLARE-3	Produced Water Tank/Truck Loading Enclosed Flare	2013

BCPP-EUG F. Condensate Tanks

EU	Point	Contents	Barrels	Gallons	Const. Date
TK-1	EFLARE-1/2	Condensate	400	16,800	2013
TK-2	EFLARE-1/2	Condensate	400	16,800	2013
TK-3	EFLARE-1/2	Condensate	400	16,800	2013
TK-4	EFLARE-1/2	Condensate	400	16,800	2013
TK-5	EFLARE-1/2	Condensate	400	16,800	2013
TK-6	EFLARE-1/2	Condensate	400	16,800	2013
TK-7	EFLARE-1/2	Condensate	400	16,800	2013
TK-8	EFLARE-1/2	Condensate	400	16,800	2013

BCPP-EUG G. Produced Water Tanks

EU	Point	Description	Barrels	Gallons	Const. Date
PW-1	EFLARE-3	Gunbarrel Separator	500	21,000	2013
PW-2	EFLARE-3	Slop Oil/Produced Water Tank	400	16,800	2013

EU	Point	Description	Barrels	Gallons	Const. Date
PW-3	EFLARE-3	Produced Water Tank	210	8,400	2013
PW-4	EFLARE-3	Produced Water Tank	210	8,400	2013
PW-5	EFLARE-3	Produced Water Tank	210	8,400	2013
PW-6	EFLARE-3	Produced Water Tank	210	8,400	2013

BCPP-EUG H. Truck Loading

EU	Point	Name	Throughput	Const. Date
L-1	EFLARE-1/2	Condensate Truck Loading	1,460 MBPY	2013
L-2	EFLARE-3	Produced Water Truck Loading	91.26 MBPY	2019

BCPP-EUG I. Fugitives

EU	Point	Number Items	Type of Equipment
FUG	FUG	2,541	Valves
		1,792	Flanges
		9,994	Connectors
		18	Pump Seals
		67	Other

BCPP-EUG J. Blowdowns

EU	Point	Name	Throughput	Const. Date
BD-1	BD-1	Compressor Engine Blowdowns	1.32 MMSCFY	2013
BD-2	BD-2	Turbine Blowdowns	47.88 MSCFY	2019

BCPP-EUG K. Emergency Generator Reciprocating Internal Combustion Engine

EU	Point	Make/Model	HP	Serial #	Mfg. Date
GEN	GEN	General Motors Vortec	162	SGM329D8B	2/19/14

Engine Parameters

Source (make/model)	Height (feet)	Diameter (inches)	Flow (ACFM)	Temp. (°F)	Fuel ⁽¹⁾ (SCFH)
Caterpillar G3608LE w/OC	28	22	16,141	857	17,853
Caterpillar G3606LE w/OC	28	20	12,145	847	13,410
Solar Taurus 70-10802S ⁽²⁾	40	66	222,699	897	86,224
Solar Taurus 70-10802SA ⁽²⁾	40	66	222,710	888	84,322

⁽¹⁾ Based on a fuel heat content of 1,000 BTU/SCF (HHV); w/OC – with oxidation catalyst.

⁽²⁾ Based on maximum fuel consumption @ 59°F.

SECTION IV. EMISSIONS

ENGINES/TURBINES

Emissions estimates for the compressor engines are based on manufacturer’s emission data for NO_x, CO, VOC, and H₂CO, AP-42 (07/00), Section 3.2 emission factors for PM_{10/2.5} and SO₂, the rated horsepower and heat input, and continuous operation. The catalyst manufacturer provided a documented reduction of 80% for CO, 65% for VOC, and 85% for H₂CO from the manufacturer’s guarantees of 2.74, 0.63, and 0.26 g/hp-hr, respectively.

Engine Emission Factors

Name/Model	NO _x (g/hp-hr)	CO (g/hp-hr)	VOC (g/hp-hr)	H ₂ CO (g/hp-hr)
2,370-HP Caterpillar G3608LE ⁽¹⁾	0.50	0.55	0.26 ⁽²⁾	0.039
1,775-HP Caterpillar G3606LE ⁽¹⁾	0.50	0.55	0.26 ⁽²⁾	0.039

⁽¹⁾ Equipped with OC.

⁽²⁾ Includes H₂CO.

Engine Emissions

Name/Model	NO _x		CO		VOC ⁽¹⁾		H ₂ CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
2,370-HP Caterpillar G3608LE w/OC	2.61	11.44	2.87	12.59	1.35	5.93	0.20	0.89
1,775-HP Caterpillar G3606LE w/OC	1.96	8.57	2.15	9.43	1.01	4.44	0.15	0.67

⁽¹⁾ Includes H₂CO.

Emission estimates from the turbines are based on manufacturer’s emission data for NO_x, CO and VOC, AP-42 (04/00), Section 3.1 emission factors for H₂CO, PM_{10/2.5} and SO₂, the rated heat input, and continuous operation.

Turbine Emission Concentrations

Pollutant	Concentration	lb/MMBTU ⁽¹⁾
NO _x	15.0 ppmvd @ 15% O ₂	0.060
CO	25.0 ppmvd @ 15% O ₂	0.061
VOC ⁽²⁾	25.0 ppmvd @ 15% O ₂	0.035
H ₂ CO	N/A	0.00071

⁽¹⁾ LHV based on highest heat input @ 59 °F (80.03 MMBTUH for T-1 and 81.84 MMBTUH for T-2).

⁽²⁾ As Methane.

Turbine Emissions

EU #	NO _x		CO		VOC ⁽¹⁾		H ₂ CO	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
T-1	5.06	22.16	5.14	22.53	2.95	12.93	0.06	0.26
T-2	5.17	22.66	5.26	23.04	3.02	13.22	0.06	0.27

⁽¹⁾ Includes H₂CO.

Emissions from the emergency engine are based on the emission standards of New Source Performance Standards (NSPS), Subpart JJJJ and non-emergency operation of 100 hours per year.

Emergency Engine Emission Factors

Name/Model	NO _x (g/hp-hr)	CO (g/hp-hr)	VOC (g/hp-hr)
162-HP General Motors Vortec ⁽¹⁾	2.0	4.0	1.0

⁽¹⁾ Equipped with catalytic converter (CC).

Emergency Engine Emissions

EU #	NO _x		CO		VOC ⁽¹⁾	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
GEN	0.71	0.04	1.43	0.07	0.36	0.02

⁽¹⁾ Includes H₂CO.

HEATER

NO_x and CO emissions estimates from the heater are based on manufacturer’s data for Low-NO_x burners, the rated heat input, and continuous operation. VOC, PM_{10/2.5}, and SO₂, emission estimates from the heater are based on the AP-42 (07/98), Section 1.4 emission factors, the rated heat input, and continuous operation.

Heater Emission Factors

EU #	NO _x (lb/MMBTU)	CO (lb/MMBTU)	VOC (lb/MMBTU)	PM _{10/2.5} (lb/MMBTU)	SO ₂ (lb/MMBTU)
H-1 – 28.0-MMBTUH	0.045	0.071	0.005	0.0075	0.0006

Heater Emissions

EU #	NO _x		CO		VOC		PM _{10/2.5}		SO ₂	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
H-1	1.26	5.52	2.07	9.08	0.15	0.67	0.21	0.93	0.02	0.08

AMINE UNIT

Off-gases from the amine unit’s still vent and flash tank were estimated using ProComp process simulator Version 8.3.0.0_#6, a natural gas flow rate of 240 MMSCFD, and a Dow Chemical Company UCARSOL AP-814 solution flow rate of 300 gpm. The composition of the natural gas stream, acid gas stream, and flash tank stream were noted in the application. Emissions from the acid gas flare are based on a 100% collection efficiency of the gases from the still vent and flash tank, and a 98% combustion efficiency.

Amine Unit Emissions

Parameter	Data
Type of Amine	MDEA ⁽¹⁾
Dry Gas Flow Rate, MMSCFD	240
Inlet Gas H ₂ S Concentration, ppmv	4
Outlet Gas H ₂ S Concentration, ppmv	0
Lean Amine Recirculation Rate Input, gpm	300
Flash Tank Temperature, °F	115
Flash Tank Pressure, psig	100
Regenerator Vent	
Control	Acid Flare
H ₂ S Emissions, lb/hr	<0.01
Sulfur Dioxide (SO ₂) Emissions, lb/hr	<0.01
Flash Tank	
Control Type or Recycle	Acid Flare
H ₂ S Emissions, lb/hr	<0.01
SO ₂ Emissions, lb/hr	<0.01

Parameter	Data
Total Emissions	
VOC, lb/hr	0.12
VOC, TPY	0.54
Total HAPs, TPY	0.04
H ₂ S Emissions, lb/hr	<0.01
SO ₂ Emissions, lb/hr	<0.01

⁽¹⁾ MDEA = Methyldiethanolamine.

TANKS

No flashing emissions were estimated from the gas plant pressurized tanks or from the stabilized condensate tanks since the condensate is processed by a stabilizer prior to storage and all gases from the stabilization unit are vented through a closed system to the gas plant inlet. Working and breathing emission from the stabilized condensate storage tanks are based on a total throughput of 4,000 barrels/day split between all eight tanks, AP-42 (11/06), Section 7.1, using EPA TANKS 4.0.9d, a 98% collection efficiency, and a 98% destruction efficiency because the tanks are vented to the enclosed flares. Uncombusted emissions from the stabilized condensate tanks are included in the emissions from the enclosed flares. Uncaptured emissions from the stabilized condensate tanks are included as tank emissions.

TK-1 through TK-8 Emissions, per tank

Parameter	Data
Throughput, gal/yr	7,665,000
Flash Calculation Method/Tool	None
Working/Breathing Method/Tool	EPA TANKS 4.0.9d
Control Type	Enclosed Flare (EFLARE-1 & EFLARE-2)
Capture Efficiency	98%
Control Efficiency	98%
VOC Emissions Emitted at Tank, TPY	0.17
VOC Emissions Emitted at Flare, TPY	0.17
VOC Emissions, TPY	0.34

Flashing emissions from the gunbarrel separator (PW-1) are based on an average gas-to-oil (GOR) factor of 10 SCF of vapor per barrel of produced water, 250 barrels per day of produced water, a molecular weight of 25.01 lb/lb-mol, and a VOC content of 11.21% by weight. Flash emissions at the gunbarrel separator result as liquids under pressure enter the vessel at atmospheric pressure. Since the gunbarrel separator is upstream of the produced water storage tanks and all the flashing occurs at the separation tank, the produced water storage tanks will have no flashing emissions. Working and breathing emissions from the produced water tanks were calculated using EPA TANKS 4.0.9d and listed throughputs. Emissions from the tanks are controlled with an enclosed flare (EFLARE-3), which has a capture efficiency of 98% and a control efficiency of 98%. To be conservative, working and breathing emissions from the water storage tank were calculated with inputs adjusted to reflect a 99% water and 1% condensate mixture.

Produced Water Tank Emissions, per tank

Parameter	PW-1	PW-2	PW-3 to PW-6
Throughput, gal/yr	3,832,500	766,500	766,500
Flash Calculation Method/Tool	GOR	None ⁽¹⁾	None ⁽¹⁾
Working/Breathing Method/Tool	EPA TANKS 4.0.9d	EPA TANKS 4.0.9d	EPA TANKS 4.0.9d
Control Type	Enclosed Flare (EFLARE-3)	Enclosed Flare (EFLARE-3)	Enclosed Flare (EFLARE-3)
Capture Efficiency	98%	98%	98%
Control Efficiency	98%	98%	98%
VOC Emissions Emitted at Tank, TPY	0.07	<0.01	<0.01
VOC Emissions Emitted at Flare, TPY	0.07	<0.01	<0.01
VOC Emissions, TPY	0.14	<0.01	<0.01

⁽¹⁾ All flashing emissions occur at PW-1.

LOADING

Emissions from loading stabilized condensate into tank trucks were estimated using AP-42 (07/08), Section 5.2, Equation 1, a saturation factor of 0.6, a vapor pressure of 6.66 psia, a vapor molecular weight of 65 lb/lb-mol, a throughput of 61,320,000 gallons per year, a 70% collection efficiency for vapor collection and control, and a 98% destruction efficiency because the vapors are vented to the enclosed flares. Emissions from loading produced water into tank trucks were estimated using AP-42 (07/08), Section 5.2, Equation 1, a saturation factor of 0.6, a vapor pressure of 0.35 psia, a vapor molecular weight of 19.80 lb/lb-mol, a throughput of 3,832,500 gallons per year, a 70% collection efficiency for vapor collection and control, and a 98% destruction efficiency because the vapors are vented to the enclosed flare.

Loading Parameters and Emissions

EU #	L-1	L-2
Liquids Loaded	Condensate	Produced Water
Throughput, gal/yr	61,320,000	3,832,500
Saturation Factor	0.6	0.6
Temp., °F	62.18	62.18
TVP, psia	6.66	0.35
MW, lb/lbmol	65.00	19.80
VOC, wt. %	100	100
Emission Factor, lb/10 ³ gal	6.20	0.10
Control Type	EFLARE-1 & EFLARE-2	EFLARE-3
Capture Efficiency, %	70	70
Control Efficiency, %	98	98
VOC Emissions Emitted at Truck, TPY	57.00	0.06
VOC Emissions Emitted at Flare, TPY	2.66	<0.01
VOC Emissions, TPY	59.66	0.06

ACID FLARE

Emissions from the pilot were based on the NO_x, CO, VOC, and PM_{10/2.5} emission factors from AP-42 (07/98), Section 1.4, combustion of 50 SCFH of natural gas with a heat content of 1,000 BTU/SCF, and continuous operation. Emissions from combustion of the purge assist gas were based on the NO_x and CO emission factors from AP-42 (02/18), Section 13.5, combustion of 31,250 SCFH of natural gas with a heat content of 942.97 BTU/SCF, and continuous operation. Emissions from combustion of the waste gas from the flash tank and still vent were based on the NO_x and CO emission factors from AP-42 (02/18), Section 13.5, combustion of 20 SCFH of waste gas with a heat content of 569.56 BTU/SCF, and continuous operation. Emissions of VOC were based on analyses of the gases combusted and a 98% combustion efficiency. SO₂ emissions were based on an inlet concentration of 4 ppmv and 100% conversion of H₂S to SO₂.

Flare Combustion Emissions

EU #	Flare Stream Heat Value MMBTUH	Pilot Gas Flow Rate SCFH	Emission Factor		NO _x TPY	CO TPY
			NO _x	CO		
FLARE-1	29.48	-	0.068 ⁽¹⁾	0.31 ⁽¹⁾	8.78	40.02
	-	50	100 ⁽²⁾	84 ⁽²⁾	0.02	0.02

⁽¹⁾ Based on AP-42 (02/18), Table 13.5-1 and 13.5-2 for industrial flares (lb/MMBTU).

⁽²⁾ Based on AP-42 (07/98), Section 1.4 (lb/MMSCF).

Flare Destruction Emissions

Process Point(s)	Emission Point	VOC Emissions, TPY	SO ₂ Emissions, TPY
Pilot Emissions	FLARE-1 – Acid Gas Flare	<0.01	-
Amine Unit Emissions	FLARE-1 – Acid Gas Flare	0.21	27.73

FLARES

Emissions from the pilot and purge gas for the main flare (FLARE-2) were based on the NO_x, CO, VOC, and PM_{10/2.5} emission factors from AP-42 (07/98), Section 1.4, combustion of 590 SCFH of natural gas with a heat content of 1,000 BTU/SCF, and continuous operation. Emissions from combustion of the waste gas were based on the NO_x and CO emission factors from AP-42 (02/18), Section 13.5, combustion of 2,650 SCFH of waste gas with a heat content of 943 BTU/SCF, and continuous operation. Emissions of VOC were based on analyses of the gases combusted and a 98% combustion efficiency.

Flare Combustion Emissions

EU #	Flare Stream Heat Value MMBTUH	Pilot/Purge Gas Flow Rate SCFH	Emission Factor		NO _x TPY	CO TPY
			NO _x	CO		
FLARE-2	2.499	-	0.068 ⁽¹⁾	0.31 ⁽¹⁾	0.74	3.39
	-	590	100 ⁽²⁾	84 ⁽²⁾	0.26	0.22

⁽¹⁾ Based on AP-42 (02/18), Table 13.5-1 and 13.5-2 for industrial flares (lb/MMBTU).

⁽²⁾ Based on AP-42 (07/98), Section 1.4 (lb/MMSCF).

Flare Destruction Emissions

Process Point(s)	Emission Point	VOC Emissions, TPY
Pilot/Purge Gas Emissions	FLARE-2 – Main Flare	0.01
PSV ⁽¹⁾ and Equipment Vent Emissions	FLARE-2 – Main Flare	0.01
Turbine Blowdown Emissions	FLARE-2 – Main Flare	<0.01

⁽¹⁾ PSV = pressure safety valves.

Emissions from the condensate tanks and tank truck loading enclosed flares (EFLARE-1 & EFLARE-2) are based on: an total annual throughput of waste gas of 159.85 MMSCF/year with a heat content of approximately 171 BTU/SCF, AP-42 (02/18), Section 13.5 emission factors for NO_x and CO, and AP-42 (07/98), Section 1.4 emission factors for PM_{10/2.5} and SO₂ for combustion of the waste gas; an annual throughput of flare pilot fuel gas of 16.4 SCFH each with a heat content of approximately 1,000 BTU/SCF, and AP-42 (07/98), Section 1.4 for NO_x, CO, PM_{10/2.5}, and SO₂ from combustion of the pilot fuel gas. Emissions of VOC were based on analyses of the gases combusted and a 98% combustion efficiency.

Flare Combustion Emissions

EU #	Flare Stream Heat Value MMBTUH	Pilot Gas Flow Rate SCFH	Emission Factor		NO _x TPY	CO TPY
			NO _x	CO		
EFLARE-1	0.511	-	0.068 ⁽¹⁾	0.31 ⁽¹⁾	0.13	0.70
	-	16.4	100 ⁽²⁾	84 ⁽²⁾	0.01	0.01
EFLARE-2	0.511	-	0.068 ⁽¹⁾	0.31 ⁽¹⁾	0.13	0.70
	-	16.4	100 ⁽²⁾	84 ⁽²⁾	0.01	0.01

⁽¹⁾ Based on AP-42 (02/18), Table 13.5-1 and 13.5-2 for industrial flares (lb/MMBTU).

⁽²⁾ Based on AP-42 (07/98), Section 1.4 (lb/MMSCF).

Flare Destruction Emissions, per flare

Process Point(s)	Emission Point	VOC Emissions, TPY
Pilot Emissions	EFLARE-1 & EFLARE-2	<0.01
Condensate Tank Emissions	EFLARE-1 & EFLARE-2	0.68
Condensate Loading Emissions	EFLARE-1 & EFLARE-2	1.33

Emissions from the produced water tanks and tank truck loading enclosed flare (EFLARE-3) are based on: an annual throughput of waste gas of 1.61 MMSCF/year with a heat content of approximately 494 BTU/SCF, AP-42 (02/18), Section 13.5 emission factors for NO_x and CO, and AP-42 (07/98), Section 1.4 emission factors for PM_{10/2.5} and SO₂ for combustion of the waste gas; an annual throughput of flare pilot fuel gas of 16.4 SCFH with a heat content of approximately 1,000 BTU/SCF, and AP-42 (07/98), Section 1.4 for NO_x, CO, PM_{10/2.5}, and SO₂ from combustion of the pilot fuel gas. Emissions of VOC were based on analyses of the gases combusted and a 98% combustion efficiency.

Flare Combustion Emissions

EU #	Flare Stream Heat Value MMBTUH	Pilot Gas Flow Rate SCFH	Emission Factor		NO _x TPY	CO TPY
			NO _x	CO		
EFLARE-3	0.09	-	0.068 ⁽¹⁾	0.31 ⁽¹⁾	0.04	0.13
	-	16.4	100 ⁽²⁾	84 ⁽²⁾	0.01	0.01

⁽¹⁾ Based on AP-42 (02/18), Table 13.5-1 and 13.5-2 for industrial flares (lb/MMBTU).

⁽²⁾ Based on AP-42 (07/98), Section 1.4 (lb/MMSCF).

Flare Destruction Emissions, per flare

Process Point(s)	Emission Point	VOC Emissions, TPY
Pilot Emissions	EFLARE-3	<0.01
Produced Water Tank Emissions	EFLARE-3	0.08
Produced Water Loading Emissions	EFLARE-3	<0.01

FUGITIVES

Fugitive VOC emissions are based on estimated equipment counts, an estimated C₃₊ content, average emission factors from EPA's 1995 *Protocol for Equipment Leak Emission Estimates* (EPA-453/R-95-017), and LDAR control efficiencies for valves in gas (84.24%) and light liquid (76.02%) service and pump seals (62.12%) based on a steady state average of leak fractions before and after multiple monitoring cycles.

Fugitive Emissions

Equipment	Type of Service	Number of Items	Percent VOC	Control Effectiveness	Emission Factor, lb/hr/source	VOC Emissions	
						lb/hr	TPY
Valves	Gas/Vapor	1,301	18.58%	84.24%	0.00992	0.38	1.66
Flanges	Gas/Vapor	1,148	18.58%	-	0.00086	0.18	0.80
Compressor Seals	Gas/Vapor	4	18.58%	-	0.0194	0.01	0.06
Relief Valves	Gas/Vapor	56	18.58%	-	0.0194	0.20	0.88
Connectors	Gas/Vapor	8,141	18.58%	-	0.000441	0.67	2.92
Valves	Light Liquid	1,240	100.00%	76.02%	0.00551	1.64	7.18
Flanges	Light Liquid	644	100.00%	-	0.000243	0.16	0.68
Pump Seals	Light Liquid	18	100.00%	62.12%	0.0287	0.20	0.86
Connectors	Light Liquid	1,853	100.00%	-	0.000463	0.86	3.76
Other	Light Liquid	7	100.00%	-	0.0165	0.12	0.51
Total Fugitive VOC Emissions						4.41	19.31

BLOWDOWNS

Compressor engine blowdown emissions (BD-1) were calculated using 9 units with 60 blowdowns per year per unit for a total of 540 blowdowns per year for the facility, a total potential volume of 1.32 MMSCF/year and the following information.

Compressor Engine Blowdown Emissions

Scf/lb-mol	Molecular weight (lb/lb-mole)	Total lb/yr	Weight % VOC	Total VOC	
				lb/hr	TPY
379.4	16.78	58,380.6	0.165	0.22	0.05

Turbine blowdown emissions (BD-2) were calculated using 2 units with 24 blowdowns per year per unit for a total of 48 blowdowns per year for the facility, a total potential volume of 47.88 MSCF/year and the following information. Emissions from BD-2 are controlled with FLARE-2, which has a capture efficiency of 100% and a control efficiency of 98%.

Turbine Blowdown Uncontrolled Emissions

Scf/lb-mol	Molecular weight (lb/lb-mole)	Total lb/yr	Weight % VOC	Total VOC	
				lb/hr	TPY
379.4	16.78	47,880	0.165	0.07	<0.01

HAZARDOUS AIR POLLUANT EMISSIONS

Formaldehyde Emissions from the Engines & Turbines

EU #	Source	Rating	Factor	Reduction	Est. Emissions	
		HP	g/hp-hr	%	lb/hr	TPY
C-1-4	Caterpillar G3608LE w/OC	2,370	0.26	85	0.815	3.57
C-5-9	Caterpillar G3606LE w/OC	1,775	0.26	85	0.763	3.34
T-1	Solar Taurus 70-10802S	10,862	0.0025	0	0.060	0.26
T-2	Solar Taurus 70-10802SA	11,107	0.0025	0	0.061	0.27
GEN	General Motors Vortec	162	0.05	75	0.004	<0.01
Total Emissions					1.703	7.44

Facility-Wide Criteria Pollutant Emissions for BCPP

Sources	NO _x		CO		VOC		SO ₂		PM ₁₀ /PM _{2.5}	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
C-1	2.61	11.44	2.87	12.59	1.35 ⁽¹⁾	5.93 ⁽¹⁾	0.01	0.05	0.16	0.70
C-2	2.61	11.44	2.87	12.59	1.35 ⁽¹⁾	5.93 ⁽¹⁾	0.01	0.05	0.16	0.70
C-3	2.61	11.44	2.87	12.59	1.35 ⁽¹⁾	5.93 ⁽¹⁾	0.01	0.05	0.16	0.70
C-4	2.61	11.44	2.87	12.59	1.35 ⁽¹⁾	5.93 ⁽¹⁾	0.01	0.05	0.16	0.70
C-5	1.96	8.57	2.15	9.43	1.01 ⁽¹⁾	4.44 ⁽¹⁾	0.01	0.04	0.12	0.53
C-6	1.96	8.57	2.15	9.43	1.01 ⁽¹⁾	4.44 ⁽¹⁾	0.01	0.04	0.12	0.53
C-7	1.96	8.57	2.15	9.43	1.01 ⁽¹⁾	4.44 ⁽¹⁾	0.01	0.04	0.13	0.59
C-8	1.96	8.57	2.15	9.43	1.01 ⁽¹⁾	4.44 ⁽¹⁾	0.01	0.04	0.12	0.53
C-9	1.96	8.57	2.15	9.43	1.01 ⁽¹⁾	4.44 ⁽¹⁾	0.01	0.04	0.12	0.53
T-1 ⁽²⁾	5.06	22.16	5.14	22.53	2.95	12.93 ⁽¹⁾	0.29	1.26	0.56	2.44
T-2 ⁽²⁾	5.17	22.66	5.26	23.04	3.02	13.22 ⁽¹⁾	0.29	1.28	0.57	2.49
H-1	1.26	5.52	2.07	9.08	0.15	0.67	0.02	0.08	0.21	0.93
FLARE-1	2.01	8.80	9.14	40.04	0.05 ⁽³⁾	0.21 ⁽³⁾	6.33	27.73	0.01	0.02
FLARE-2	0.23	1.00	0.82	3.61	0.01 ⁽⁴⁾	0.03 ⁽⁴⁾	<0.01	<0.01	<0.01	0.02

Sources	NO _x		CO		VOC		SO ₂		PM ₁₀ /PM _{2.5}	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
EFLARE-1	---	0.14	---	0.71	---	2.01 ⁽⁵⁾	---	<0.01	---	<0.01
EFLARE-2	---	0.14	---	0.71	---	2.01 ⁽⁵⁾	---	<0.01	---	<0.01
EFLARE-3	---	0.05	---	0.14	---	0.09 ⁽⁶⁾	---	<0.01	---	<0.01
TK-1 to TK-8	---	---	---	---	---	1.35	---	---	---	---
PW-1 to PW-6	---	---	---	---	---	0.07	---	---	---	---
L-1	---	---	---	---	---	57.00	---	---	---	---
L-2	---	---	---	---	---	0.06	---	---	---	---
FUG	---	---	---	---	---	19.31	---	---	---	---
BD-1	---	---	---	---	---	0.05	---	---	---	---
BD-2	---	---	---	---	---	---	---	---	---	---
GEN	0.71	0.04	1.43	0.07	0.36	0.02	---	<0.01	---	<0.01
Emissions	34.68	149.12	46.09	197.44	16.99	154.95	7.02	30.75	2.63	11.43

(1) Includes H₂CO.

(2) lb/hr & TPY emissions based on maximum values @ 59 °F.

(3) Includes uncombusted emissions from the amine unit.

(4) Includes uncombusted emissions from the PSV, the equipment vents, and the turbine blowdowns.

(5) Includes uncombusted emissions from the condensate storage tanks and condensate loading emissions.

(6) Includes uncombusted emissions from the gunbarrel separator, produced water storage tanks, and produced water loading.

SECTION V. INSIGNIFICANT ACTIVITIES

The insignificant activities identified and justified in the application are listed below. Records are available to confirm the insignificance of the activities. Record keeping for activities indicated with “*” is required in the Specific Conditions. Any activity to which a state or federal applicable requirement applies is not insignificant even if it is included on this list.

1. Storage tanks with less than or equal to 10,000 gallons capacity that store volatile organic liquids with a true vapor pressure less than or equal to 1.0 psia at maximum storage temperature. There are lube oil and amine storage tanks on-site. The vapor pressures for lube oil and amine are less than 1.0 psia.
2. * Activities having the potential to emit no more than 5.0 TPY of any criteria pollutant. None identified but may be in the future.

SECTION VI. OKLAHOMA AIR QUALITY RULES

OAC 252:100-1 (General Provisions)

[Applicable]

Subchapter 1 includes definitions but there are no regulatory requirements.

OAC 252:100-2 (Incorporation by Reference)

[Applicable]

This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the “Federal Regulations” section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Primary Standards are in Appendix E and Secondary Standards are in Appendix F of the Air Pollution Control Rules. At this time, all of Oklahoma is in attainment of these standards.

OAC 252:100-5 (Registration of Air Contaminant Sources) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. Emission inventories have been submitted and fees paid for the past years.

OAC 252:100-8 (Permits for Part 70 Sources) [Applicable]
Part 5 includes the general administrative requirements for part 70 permits. Any planned changes in the operation of the facility which result in emissions not authorized in the permit and which exceed the “Insignificant Activities” or “Trivial Activities” thresholds require prior notification to AQD and may require a permit modification. Insignificant activities mean individual emission units that either are on the list in Appendix I (OAC 252:100) or whose actual calendar year emissions do not exceed the following limits:

- 5 TPY of any one criteria pollutant
- 2 TPY of any one HAP or 5 TPY of multiple HAP or 20% of any threshold less than 10 TPY for a HAP that the EPA may establish by rule

Emission limitations and operational requirements necessary to assure compliance with all applicable requirements for all sources are based on information in the application or developed from the applicable requirements.

OAC 252:100-9 (Excess Emissions Reporting Requirements) [Applicable]
Except as provided in OAC 252:100-9-7(a)(1), the owner or operator of a source of excess emissions shall notify the Director as soon as possible but no later than 4:30 p.m. the following working day of the first occurrence of excess emissions in each excess emission event. No later than thirty (30) calendar days after the start of any excess emission event, the owner or operator of an air contaminant source from which excess emissions have occurred shall submit a report for each excess emission event describing the extent of the event and the actions taken by the owner or operator of the facility in response to this event. Request for mitigation, as described in OAC 252:100-9-8, shall be included in the excess emission event report. Additional reporting may be required in the case of ongoing emission events and in the case of excess emissions reporting required by 40 CFR Parts 60, 61, or 63.

OAC 252:100-13 (Open Burning) [Applicable]
Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in this subchapter.

OAC 252:100-19 (Control of Emission of Particulate Matter) [Applicable]
This subchapter specifies a particulate matter (PM) emissions limitation of 0.6 lb/MMBTU from fuel-burning equipment with a rated heat input of 10 MMBTUH or less. For fuel-burning equipment rated less than 1,000 MMBTUH but greater than 10 MMBTUH, the allowable PM emissions are calculated using the formula: $E = 1.042808 X^{(-0.238561)}$, where E is the limit in

lb/MMBTU and X is the maximum heat input. The table below lists the fuel-burning equipment greater than 10 MMBTUH and their applicable emission limits. For external combustion units burning natural gas, AP-42 (7/98), Table 1.4-2, lists the total PM emissions for natural gas to be 7.6 lb/MMft³ or about 0.0076 lb/MMBTU. For 4-cycle lean-burn engines burning natural gas, AP-42 (7/00), Section 3.2, lists the total PM emissions as 0.00999 lb/MMBTU. Table 3.2-3 of AP-42 (7/00) lists the total PM emissions from 4-stroke, rich-burn, natural gas-fired engines to be 0.02 lb/MMBTU. For turbines burning natural gas, AP-42 (4/00), Section 3.1, lists the total PM emissions as 0.0066 lb/MMBTU.

Equipment	Max. Heat Input (MMBTUH) (HHV)	Allowable PM Emission Rate (lb/MMBTU) (HHV)	Potential PM Emissions (lb/MMBTU) (HHV)
2,370-hp Caterpillar G3608LE	17.88	0.524	0.0100
1,775-hp Caterpillar G3606LE	13.43	0.561	0.0100
10,862-hp Solar Taurus 70-1080S	84.32	0.362	0.0066
11,107-hp Solar Taurus 70-1080SA	86.22	0.360	0.0066
162-HP General Motors Vortec	1.16	0.60	0.02
Regeneration Heater	28.00	0.471	0.0076

The permit requires the use of natural gas for all fuel-burning equipment to ensure compliance with Subchapter 19.

This subchapter also limits emissions of particulate matter from industrial processes and direct-fired fuel-burning equipment based on their process weight rates. Since there are no significant particulate emissions from the non-fuel-burning processes at the facility compliance with the standard is assured without any special monitoring provisions.

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
 No discharge of greater than 20% opacity is allowed except for short-term occurrences that consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity. When burning natural gas, there is very little possibility of exceeding these standards. This permit requires the use of natural gas for all fuel-burning units to ensure compliance with Subchapter 25.

OAC 252:100-29 (Control of Fugitive Dust) [Applicable]
 No person shall cause or permit the discharge of any visible fugitive dust emissions beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. Under normal operating conditions, this facility has negligible potential to violate this requirement; therefore, it is not necessary to require specific precautions to be taken.

OAC 252:100-31 (Sulfur Compounds)

[Applicable]

Part 2, Section 31-7 limits the ambient air concentration of hydrogen sulfide (H₂S) emissions from any new or existing source to 0.2 ppmv (24-hour average) which is equivalent to 283 µg/m³. Based on modeling conducted for the general permit for oil and gas facilities, controlled amine units (still vent routed to a flare) at minor facilities are unlikely to exceed the H₂S ambient air concentration limit. Also, since the ambient impacts of H₂S from the engines, heaters, and boilers is so low, and there are no significant emissions of H₂S from the condensate or “sweet” crude oil storage, the facility as a whole would be in compliance with the H₂S ambient air concentration limit. Ambient impacts of H₂S from the amine unit have been previously estimated using AERSCREEN.

Ambient Impacts of H₂S

Averaging Time	Standard	Max Impacts
	µg/m ³	(µg/m ³)
24-hour	283	2

Part 5, Section 31-25 limits SO₂ emissions from new fuel-burning equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb SO₂/MMBTU heat input averaged over 3 hours. For fuel gas having a gross calorific value of 1,000 BTU/SCF, this limit corresponds to fuel sulfur content of 1,203 ppmv. The permit requires the use of gaseous fuel with sulfur content less than 4 ppmv for the Buffalo Creek Processing Plant to ensure compliance with Subchapter 31.

Part 5, Section 31-26(1) requires H₂S in the waste gas stream from any new petroleum or natural gas process equipment (constructed after July 1, 1972) to be reduced by 95% by removal or by being oxidized to SO₂. This requirement does not apply if a facility’s emissions of H₂S do not exceed 0.3 lb/hr, two-hour average. The owner or operator is required to install, maintain, and operate an alarm system that will signal a malfunction for all thermal devices used to control H₂S emissions from petroleum and natural gas processing facilities regulated under OAC 252:100-31-26. Emissions from the flash tank and still vent of the amine unit are vented to the acid gas flare with a combustion efficiency of 98%. The acid gas flare will be equipped with an alarm system that will signal when there is no pilot flame. The permit will require compliance with all applicable requirements.

Part 5, Section 31-26(2) acid gas streams with a sulfur content of greater than 0.54 LT/D or gas sweetening units or petroleum refinery process equipment which emit more than 100 lb/hr of SO₂ shall reduce the sulfur content prior to release to the ambient air by use of a sulfur recovery unit. The sulfur recovery unit shall meet the sulfur recovery efficiencies of OAC 252:100-31-26(2)(C-F). At 4 ppmv and 240 MMSCFD, the sulfur content of the gas stream would be 0.037 LT/D which is less than the de minimis (0.54 LT/D) for use of a sulfur recovery unit.

OAC 252:100-33 (Nitrogen Oxides)

[Applicable]

This subchapter limits new gas-fired fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to emissions of 0.2 lb of NO_x per MMBTU, three-hour average. The turbines exceed the 50 MMBTUH threshold. Emissions of NO_x from the turbines are approximately 0.060 lb/MMTBU which is in compliance with this subchapter. Compliance with the BACT emission limits will ensure compliance with this subchapter.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are located at this facility: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic cracking unit, or petroleum catalytic reforming unit.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3, Section 15, requires storage tanks constructed after December 28, 1974, with a capacity of 400 gallons or more and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with a permanent submerged fill pipe or with a vapor recovery and disposal system. If equipped with a vapor-recovery system, it must consist of a vapor-gathering system capable of collecting 85% or more of the uncontrolled VOC that would otherwise be emitted to the atmosphere and a vapor-disposal system capable of processing the VOC to prevent their emission to the atmosphere. The stabilized condensate tanks are subject to this subchapter and are equipped with a vapor recovery and disposal system (EFLARE-1/2).
Part 3, Section 16, requires VOC loading facilities with a throughput greater than 40,000 gallons per day to be equipped with a vapor-collection and disposal system as described below.

- (1) **Vapor-collection and disposal system.**
 - (A) **Vapor-collection portion of the system.**
 - (i) When loading VOCs through the hatches of a tank truck or trailer, using a loading arm equipped with a vapor collecting adaptor, a pneumatic, hydraulic, or mechanical means shall be provided to ensure a vapor-tight seal between the adaptor and the hatch.
 - (ii) When loading is effected through means other than hatches, all loading and vapor lines shall be equipped with fittings that make vapor-tight connections and which must be closed when disconnected or which close automatically when disconnected.
 - (B) **Vapor-disposal portion of the system.** The vapor-disposal portion of the system shall consist of:
 - (i) a vapor-liquid absorber system with a minimum recovery efficiency of 90 percent by weight of all the VOC vapors and gases entering such disposal system; or,
 - (ii) a variable-vapor space tank, compressor, and fuel-gas system of sufficient capacity to receive all VOC vapors and gases displaced from the tank trucks and trailers being loaded.
- (2) **Prevention of VOC drainage.** A means shall be provided in either loading system to prevent VOC drainage from the loading device when it is removed from any tank truck or trailer, or to accomplish complete drainage before removal.

The estimated throughput of the loading rack at the facility is greater than 40,000 gallons per day. All applicable requirements have been incorporated into the permit.

Part 5, Section 25, limits the VOC content of coatings from any coating line or other coating operation. This facility does not normally conduct coating or painting operations except for routine maintenance of the facility and equipment, which is exempt.

Part 7, Section 36, requires fuel-burning and refuse-burning equipment to be operated and maintained so as to minimize VOC emissions. Temperature and available air must be sufficient to provide essentially complete combustion.

Part 7, Section 37, requires all single-compartment or multiple-compartment VOC/water separators that receive effluent water containing 200 gal/d (760 l/d) or more of any VOC from any equipment processing, refining, treating, storing or handling VOC shall comply with one of the following:

- (1) The container totally encloses the liquid contents and all openings are sealed. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place. The oil removal devices shall be gas-tight except when manual skimming, inspection and/or repair is in progress.
- (2) The container is equipped with an external floating roof that consists of a pontoon type or double-deck type cover, or a fixed roof with an internal-floating cover. The cover shall rest on the surface of the contents and be equipped with a closure seal, or seals, to close the space between the cover edge and container wall. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place. The oil removal devices shall be gas-tight except when manual skimming, inspection and/or repair is in progress.
- (3) The container is equipped with a vapor-recovery system that consists of a vapor-gathering system capable of collecting the VOC vapors and gases discharged and a vapor-disposal system capable of processing such vapors and gases to prevent their emission to the atmosphere. All tank gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place. The VOC removal devices shall be gas-tight except when manual skimming, inspection and/or repair is in progress.
- (4) The container is approved prior to use by the Division Director and is equipped with controls that have efficiencies equal to the controls listed in 252:100-37-37(1) through (3).

The 500-barrel gunbarrel separator is considered an effluent water separator and is subject to these requirements. The separator totally encloses the liquid contents and all openings are sealed. All applicable requirements have been incorporated into the permit.

OAC 252:100-42 (Toxic Air Contaminants (TAC))

[Applicable]

This subchapter regulates TAC that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained unless a modification is approved by the Director. Since no AOC has been designated anywhere in the state, there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping)

[Applicable]

This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any

required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

The following Oklahoma Air Quality Rules are not applicable to this facility:

OAC 252:100-11	Alternative Emissions Reduction	not eligible
OAC 252:100-15	Mobile Sources	not in source category
OAC 252:100-17	Incinerators	not type of emission unit
OAC 252:100-23	Cotton Gins	not type of emission unit
OAC 252:100-24	Grain, Feed, or Seed Facility	not in source category
OAC 252:100-39	Non-attainment Areas	not in a subject area
OAC 252:100-47	Municipal Solid Waste Landfills	not type of source category

SECTION VII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Not Applicable]
 Facility wide potential emissions of each regulated air pollutant are less than the major source threshold of 250 TPY and the facility is not one of the listed facilities with a threshold of 100 TPY.

NSPS, 40 CFR Part 60 [Subparts A, JJJJ, KKKK, and OOOO Are Applicable]
Subpart A, General Requirements. The main plant flare (FLARE-2) is subject to the requirements of 60.18.

Subpart Db, Industrial-Commercial-Institutional Steam Generating Units. This subpart affects each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 MW (100 MMBTUH). There are no steam generating units larger than 100 MMBTUH at the site that could potentially be subject to this rule.

Subpart Dc, Small Industrial-Commercial-Institutional Steam Generating Units. This subpart affects steam-generating units constructed after June 9, 1989, and with capacity between 10 and 100 MMBTUH. The amine unit regenerator is not considered a “Steam Generating Unit” as that term is defined in this subpart and is not subject to this subpart.

Subpart Kb, Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984. This subpart regulates hydrocarbon storage tanks larger than 19,813-gal capacity. All of the tanks have capacities less than the de minimis threshold except for the gunbarrel separator. However, the gunbarrel separator is not considered a storage vessel but a process tank.

Subpart GG, Stationary Gas Turbines. This subpart affects stationary gas turbines with a heat input at peak load equal to or greater than 10 MMBTUH, based on the LHV of the fuel fired which commence construction, modification, or reconstruction after October 3, 1977, but on or before

February 18, 2005. The turbines located at this facility were constructed after February 18, 2005, and are subject to NSPS, Subpart KKKK.

Subpart KKK, Equipment Leaks of VOC from Onshore Natural Gas Processing Plants for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011. This subpart sets standards for natural gas processing plants which are defined as any site engaged in the extraction of natural gas liquids from field gas, fractionation of natural gas liquids, or both. A compressor station, dehydration unit, sweetening unit, underground storage tank, field gas gathering system, or liquefied natural gas unit is covered by this subpart if it is located at an onshore natural gas processing plant site. The BCPP facility commenced construction after August 23, 2011, and before September 18, 2015, and is subject to NSPS, Subpart OOOO.

Subpart LLL, SO₂ Emissions from Onshore Natural Gas Processing for Which Construction, Reconstruction, or Modification Commenced After January 20, 1984, and on or Before August 23, 2011. The amine unit at the BCPP facility commenced construction after August 23, 2011, and before September 18, 2015, and is subject to NSPS, Subpart OOOO. The amine unit also processes sweet natural gas (≤ 0.25 grains/DSCF; ≤ 4 ppmv) and would not be subject to this subpart.

Subpart IIII, Stationary Compression Ignition (CI) Internal Combustion Engines (ICE). This subpart affects CI ICE, that are not fire pump engines, which commenced construction after July 1, 2005, and were manufactured after April 1, 2006. There are no CI ICE at this facility.

Subpart JJJJ, Stationary Spark Ignition (SI) Internal Combustion Engines (ICE). This subpart promulgates emission standards for all new SI engines ordered after June 12, 2006 and all SI engines modified or reconstructed after June 12, 2006, regardless of size. Stationary SI ICE manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than or equal to 100-hp under the voluntary manufacturer certification program must certify those engines to the emission standards in Table 1 of Subpart JJJJ. Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100-hp must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE.

Emission Standards from Table 1, Subpart JJJJ, g/hp-hr (ppmvd @ 15%O₂)

Engine Type & Fuel	Max Power (hp)	Mfg. Date	NO _x	CO	VOC
Non-Emergency SI Natural Gas ¹	hp \geq 500	7/1/2007	2.0 (160)	4.0 (540)	1.0 (86)
		7/1/2010	1.0 (80)	2.0 (270)	0.7 (60)
Emergency	hp \geq 130	1/1/2009	2.0 (160)	4.0 (540)	1.0 (86)

¹ – except lean-burn engines $500 \leq HP < 1,350$

An initial notification is required only for owners and operators of engines greater than 500-hp that are non-certified. Owners or operators must demonstrate compliance with the applicable emissions limits according to one of the following methods:

- Purchase a certified engine and operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer’s emission-related written instructions; keep records of conducted maintenance to demonstrate compliance, but no performance testing is required.

- Purchase a certified engine (that is not operated and maintained according to the manufacturer's emission-related written instructions) or a non-certified engine and maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions; for engines greater than 500-hp conduct an initial performance test within 1 year of engine startup and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first.

The 2,370-HP Caterpillar G3608LE engines and 1,775-HP Caterpillar G3606LE engines were constructed after June 12, 2006, and are subject to this subpart. The engines may not be certified and/or maintained according to manufacturer's emission-related written instructions and will be subject to initial and periodic testing under this subpart. All applicable requirements have been incorporated into the permit.

Starting on January 1, 2011, emergency stationary SI ICE greater than or equal to 130-HP and less than 500-HP built on or after January 1, 2011, that do not meet the standards applicable to non-emergency engines, must install a non-resettable hour meter.

Emergency stationary ICE, must be operated according to the requirements in § 60.4243(d)(1-3). In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in § 60.4243(d)(1-3), is prohibited. If the engine is not operated according to the requirements in § 60.4243(d)(1-3), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines. Emergency engines are limited to 100 hours per year for maintenance and testing. There are no limits on hours of operation for emergencies but must keep records.

The 162-HP General Motors Vortec emergency engine is equipped with a non-resettable hour meter and will be operated according to the requirements for emergency engines. All applicable requirements have been incorporated into the permit.

Subpart KKKK, Stationary Combustion Turbines. This subpart establishes emission standards and compliance schedules for the control of emissions from stationary combustion turbines with a heat input at peak load equal to or greater than 10.7 gigajoules (10 MMBTU) per hour, based on the higher heating value of the fuel, that commenced construction, modification, or reconstruction after February 18, 2005. Stationary combustion turbines regulated under this subpart are exempt from the requirements of Subpart GG. New natural gas fired turbines with a heat input at peak load of > 50 MMBTUH and ≤ 850 MMBTUH must meet a NO_x emission limit of ≤ 25 ppm_{dv} @ 15% O₂. Turbines are also subject to either the SO₂ emission limitation of § 60.4330(a)(1) (0.90 lb SO₂/MWhr) or the fuel sulfur content limitation of § 60.4330(a)(2) (0.060 lb SO₂/MMBTU). Owners or operators must operate and maintain each turbine in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction. Owners or operators must demonstrate compliance with the applicable NO_x emission limit by performing annual testing or through use of either continuous emission monitoring or continuous parameter monitoring. If the results of the tests are less than 50% of the standard, the owner/operator may reduce the frequency of the subsequent test to once every two

years. If any subsequent test exceeds 75% of the standard, the performance testing shall revert to annual testing. If the fuel quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the fuel, specify that the total sulfur content for natural gas is ≤ 20 gr/100 SCF the owner or operator is exempt from monitoring the total sulfur content of the fuel.

The 11,107-HP Solar Taurus 70-10802SA and 10,862-HP Solar Taurus 70-10802S stationary combustion turbines were constructed after the applicability date of this subpart and are subject to this subpart. The facility uses performance testing to demonstrate compliance with the NO_x standard. The facility complies with the SO₂ standard by demonstrating that the fuel sulfur content does not exceed 20 gr/100 SCF. The permit incorporates all applicable requirements.

Subpart OOOO, Crude Oil and Natural Gas Facilities for Which Construction, Reconstruction, or Modification Commenced After August 23, 2011, and on or Before September 18, 2015. This subpart affects the following onshore affected facilities:

- (a) Each gas well affected facility, which is a single natural gas well.
- (b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals that is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment.
- (c) Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment.
- (d) Each pneumatic controller affected facility, which is:
 - (1) For the oil production segment (between the wellhead and the point of custody transfer to an oil pipeline): a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 SCFH.
 - (2) For the natural gas production segment (between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not including natural gas processing plants): a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 SCFH.
 - (3) For natural gas processing plants: a single continuous bleed natural gas-driven pneumatic controller.
- (e) Each storage vessel affected facility, which is a single storage vessel located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment, that contains an accumulation of crude oil, condensate, intermediate hydrocarbon liquids, or produced water and has the potential for VOC emissions equal to or greater than 6 TPY.
- (f) The group of all equipment, except compressors, within a process unit located at an onshore natural gas processing plant is an affected facility.
- (g) Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.

There are no wells located at this facility.

For each centrifugal compressor using wet seals, the owner/operator must reduce VOC emissions from each centrifugal compressor wet seal fluid degassing system by 95.0 percent or greater. The

centrifugal refrigeration compressors at this site use dry seals and are therefore not subject to this subpart.

For each reciprocating compressor the owner/operator must replace the rod packing before 26,000 hours of operation or prior to 36 months. If utilizing the number of hours, the hours of operation must be continuously monitored. The reciprocating compressors are not subject to this subpart since they were constructed prior to August 23, 2011.

Pneumatic controllers at a natural gas processing plant must have a bleed rate of zero. All pneumatic controllers at this facility have to comply with this subpart.

Storage vessels constructed, modified or reconstructed after August 23, 2011, with VOC emissions equal to or greater than 6 TPY must reduce VOC emissions by 95.0 % or greater. There are no storage vessels that have emissions greater than 6 TPY.

The group of all equipment, except compressors, within a process unit at a natural gas processing plant, must comply with the requirements of NSPS, Subpart VVa, except as provided in §60.5401. This facility complies with the equipment leak provisions of this subpart.

A sweetening unit means a process device that removes hydrogen sulfide and/or carbon dioxide from the sour natural gas stream. A sour natural gas stream is defined as containing greater than or equal to 0.25 grains sulfur per 100 standard cubic feet or 4 ppmv. The amine unit processes sweet natural gas and is not subject to this subpart.

The permit will require the facility to comply with all applicable requirements of NSPS, Subpart OOOO.

Subpart OOOOa, Crude Oil and Natural Gas Facilities for which Construction, Modification, or Reconstruction Commenced after September 18, 2015. This subpart affects the following onshore affected facilities:

- (a) Each well affected facility, which is a single well that conducts a well completion operation following hydraulic fracturing or refracturing.
- (b) Each centrifugal compressor affected facility, which is a single centrifugal compressor using wet seals. A centrifugal compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.
- (c) Each reciprocating compressor affected facility, which is a single reciprocating compressor. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.
- (d) Each pneumatic controller affected facility:
 - (1) Each pneumatic controller affected facility not located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 SCFH.
 - (2) Each pneumatic controller affected facility located at a natural gas processing plant, which is a single continuous bleed natural gas-driven pneumatic controller.

- (e) Each storage vessel affected facility, which is a single storage vessel with the potential for VOC emissions equal to or greater than 6 TPY as determined according to §60.5365a(e).
- (f) The group of all equipment within a process unit located at an onshore natural gas processing plant is an affected facility. Equipment within a process unit of an affected facility located at onshore natural gas processing plants are exempt from this subpart if they are subject to and controlled according to Subparts VVa, GGG, or GGGa.
- (g) Sweetening units located at onshore natural gas processing plants that process natural gas produced from either onshore or offshore wells.
- (h) Each pneumatic pump affected facility:
 - (1) For natural gas processing plants, each pneumatic pump affected facility, which is a single natural gas-driven diaphragm pump.
 - (2) For well sites, each pneumatic pump affected facility, which is a single natural gas-driven diaphragm pump.
- (i) The collection of fugitive emissions components at a well site, as defined in §60.5430a, is an affected facility, except as provided in § 60.5365a(i)(2).
- (j) The collection of fugitive emissions components at a compressor station, as defined in § 60.5430a, is an affected facility.

There are no wells located at this facility. The centrifugal compressors, reciprocating compressors, pneumatic controllers, storage vessels, equipment within each process unit, the sweetening units and pneumatic pumps at this gas plant commenced construction prior to September 18, 2015, and have not been modified or reconstructed.

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61

[Not Applicable]

There are no emissions of any of the regulated pollutants: arsenic, asbestos, beryllium, benzene, coke oven emissions, mercury, radionuclides, or vinyl chloride except for trace amounts of benzene. Subpart J (Equipment Leaks of Benzene) concerns only process streams, which contain more than 10% benzene by weight. All process streams at this facility are below this threshold.

NESHAP, 40 CFR Part 63

[Subpart ZZZZ is Applicable]

Subpart HH, Oil and Natural Gas Production Facilities. This subpart applies to affected emission points that are located at facilities that are major and area sources of HAP, and either process, upgrade, or store hydrocarbon liquids prior to custody transfer or that process, upgrade, or store natural gas prior to entering the natural gas transmission and storage source category. For purposes of this subpart natural gas enters the natural gas transmission and storage source category after the natural gas processing plant, if present. The only affected source at area sources are triethylene glycol (TEG) dehydration units. The combined HAP emissions from this facility are less than the major source thresholds. There are no TEG dehydration units at the BCPP facility.

Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines (RICE). This subpart affects any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions. Owners and operators of the following new or reconstructed RICE must meet the requirements of Subpart ZZZZ by complying with either 40 CFR Part 60 Subpart IIII (for CI engines) or 40 CFR Part 60 Subpart JJJJ (for SI engines):

- 1) Stationary RICE located at an area source;
- 2) The following Stationary RICE located at a major source of HAP emissions:
 - i) 2SLB and 4SRB stationary RICE with a site rating of ≤ 500 brake HP;
 - ii) 4SLB stationary RICE with a site rating of < 250 brake HP;
 - iii) Stationary RICE with a site rating of ≤ 500 brake HP which combust landfill or digester gas equivalent to 10% or more of the gross heat input on an annual basis;
 - iv) Emergency or limited use stationary RICE with a site rating of ≤ 500 brake HP; and
 - v) CI stationary RICE with a site rating of ≤ 500 brake HP.

No further requirements apply for engines subject to NSPS under this part. A stationary RICE located at an area source of HAP emissions is new if construction commenced on or after June 12, 2006. The engines at this facility are subject to this subpart and will comply with this subpart by complying with NSPS, Subpart JJJJ. All applicable requirements have been incorporated into the permit.

Subpart JJJJJ, Industrial, Commercial, and Institutional Boilers. This subpart affects new and existing boilers located at area sources of HAP, except for gas-fired boilers. Boiler means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam or hot water. Gas fired boilers are defined as any boiler that burns gaseous fuel not combined with any solid fuels, liquid fuel only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel. The regeneration heater is not considered a boiler and is not subject to this subpart.

Compliance Assurance Monitoring (CAM), 40 CFR Part 64 [Not Applicable]
This part applies to any pollutant-specific emission unit at a major source that is required to obtain an operating permit, for any application for an initial operating permit submitted after April 18, 1998, that addresses “large emissions units,” or any application that addresses “large emissions units” as a significant modification to an operating permit, or for any application for renewal of an operating permit, if it meets all of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant;
- It uses a control device to achieve compliance with the applicable emission limit or standard; and
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant greater than major source thresholds (100 TPY of a criteria pollutant, 10 TPY of a HAP, or 25 TPY of total HAP).

The engines utilize oxidation catalyst to comply with the applicable CO emission limits. However, the potential to emit CO for each engine is less than major source levels. Therefore, the engines are not subject to CAM. The amine unit and the turbines do not have potential emissions above 100 TPY of criteria pollutants or 10 TPY of a HAP; therefore, they are not subject to CAM.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Applicable]
This facility will handle naturally occurring hydrocarbon mixtures at a natural gas processing plant and the Accidental Release Prevention Provisions are applicable to this facility. The facility is required to submit the appropriate accidental release emergency response program plan prior to

operation of the facility. More information on this federal program is available on the web page: www.epa.gov/rmp.

Stratospheric Ozone Protection, 40 CFR Part 82

[Not Applicable]

These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).

Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030.

Subpart F requires that any persons servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment comply with the standards for recycling and emissions reduction.

This facility does not produce, consume, recycle, import, or export any controlled substances or controlled products as defined in this part, nor does this facility perform service on motor (fleet) vehicles that involves ozone-depleting substances. Therefore, as currently operated, this facility is not subject to these requirements. To the extent that the facility has air-conditioning units that apply, the permit requires compliance with Part 82.

SECTION VIII. COMPLIANCE

TIER CLASSIFICATION

This application has been classified as **Tier II** because it is a request for a renewal of a Title V operating permit. The permittee has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant owns the land.

PUBLIC and EPA REVIEW

The applicant published the “Notice of Filing a Tier II Application” in the Elk City News, a twice weekly publication in Beckham County on February 26, 2020. The notice stated that the application was available for review at the Elk City Carnegie Library in Beckham County, and also at the Air Quality Division’s main office in Oklahoma City. The information on all permit actions is available for review by the public in the Air Quality section of the DEQ web page at <https://www.deq.ok.gov>.

The applicant requested and was granted concurrent public and EPA review periods. The applicant will publish a “Notice of Tier II Draft Permit” in a local newspaper in Beckham County where the facility is located. The notices will state that the draft permit will be available for public review at the facility or the DEQ office in Oklahoma City. The notices will also state that the draft permit will be available for public review in Beckham County, Oklahoma. Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page: <https://www.deq.ok.gov>. The proposed permit will be sent to EPA for a 45-day review period.

If the Administrator does not object in writing during the 45-day EPA review period, any person that meets the requirements of this subsection may petition the Administrator within 60 days after the expiration of the Administrator's 45-day review period to make such objection. Any such petition shall be based only on objections to the permit that the petitioner raised with reasonable specificity during the public comment period provided for in 27A O.S. § 2-14-302.A.2., unless the petitioner demonstrates that it was impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period. If the Administrator objects to the permit as a result of a petition filed under this subsection, the DEQ shall not issue the permit until EPA's objection has been resolved, except that a petition for review does not stay the effectiveness of a permit or its requirements if the permit was issued after the end of the 45-day review period and prior to an EPA objection. If the DEQ has issued a permit prior to receipt of an EPA objection under this subsection, the DEQ will modify, terminate, or revoke such permit, and shall do so consistent with the procedures in 40 CFR §§ 70.7(g)(4) or (5)(i) and (ii) except in unusual circumstances. If the DEQ revokes the permit, it may thereafter issue only a revised permit that satisfies EPA's objection. In any case, the source will not be in violation of the requirement to have submitted a timely and complete application.

FEE PAID

Part 70 operating permit renewal fee of \$7,500 has been received.

TESTING

The most recent periodic testing showing compliance with the applicable NO_x and CO emission limits is summarized in the table below.

Point	Permit Limits		Test Results		Testing Date
	NO _x	CO	NO _x	CO	
	lb/hr	lb/hr	lb/hr	lb/hr	
C-1 ⁽¹⁾	2.61	2.87	1.32	0.09	11/05/18
C-2	2.61	2.87	0.08	0.13	08/21/20
C-3	2.61	2.87	0.29	0.06	08/21/20

Point	Permit Limits		Test Results		Testing Date
	NO _x	CO	NO _x	CO	
	lb/hr	lb/hr	lb/hr	lb/hr	
C-4	2.61	2.87	0.25	0.65	08/21/20
C-5 ⁽²⁾	1.96	2.15	0.80	0.31	03/22/19
C-6 ⁽³⁾	1.96	2.15	N/A	N/A	N/A
C-7 ⁽³⁾	1.96	2.15	N/A	N/A	N/A
C-8 ⁽³⁾	1.96	2.15	N/A	N/A	N/A
C-9 ⁽³⁾	1.96	2.15	N/A	N/A	N/A
T-1	5.06	5.14	0.62	0.44	07/16/20
T-2	5.17	5.26	0.16	0.22	08/21/20

⁽¹⁾ Has not been operated for more than 220 hours in the third quarter of 2020.

⁽²⁾ Has been temporarily removed from the facility.

⁽³⁾ Have been permanently removed from the facility.

INSPECTION

A Full Compliance Evaluation (FCE) was conducted on June 27, 2019. Camas Frey, Vanessa McKinzey, and Bobbi Franklin of Air Quality, who were accompanied by Donnie Parker, Darron Bond, Micah Kilhoffer, and Raleigh Wall of MarkWest Oklahoma Gas Company L.L.C., conducted the inspection. No violations were observed on-site.

SECTION IX. SUMMARY

The facility is operating as described in the permit application. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues that would prevent issuance of the permit. Issuance of the operating permit is recommended, contingent on public and EPA reviews.

DRAFT/PROPOSED

**PERMIT TO OPERATE
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS**

**MarkWest Oklahoma Gas Company, L.L.C.
Buffalo Creek Processing Plant (BCPP) (SIC 1321)**

**Permit Number 2019-1308-TVR
Facility ID: 9798**

The permittee is authorized to operate in conformity with the specifications submitted to Air Quality on December 20, 2019, and all supplemental materials. The Evaluation Memorandum dated March 4, 2021, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein.

1. Points of emissions and emissions limitations for each point: [OAC 252:100-8-6(a)(1)]

BCPP-EUG A. Reciprocating Internal Combustion Engines: Emission limitations have been established for EU C-1 through C-9 and include maintenance, startup, and shutdown (MSS). Emission limitations for emission units (EU) C-1 through C-9: [OAC 252:100-8-6(a)(1)]

EU	Point	Engine Make/Model	NO _x		CO		VOC ⁽¹⁾	
			lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
C-1	C-1	2,370-hp Caterpillar G3608LE w/Oxidation Catalyst	2.61	11.44	2.87	12.59	1.35	5.93
C-2	C-2	2,370-hp Caterpillar G3608LE w/Oxidation Catalyst	2.61	11.44	2.87	12.59	1.35	5.93
C-3	C-3	2,370-hp Caterpillar G3608LE w/Oxidation Catalyst	2.61	11.44	2.87	12.59	1.35	5.93
C-4	C-4	2,370-hp Caterpillar G3608LE w/Oxidation Catalyst	2.61	11.44	2.87	12.59	1.35	5.93
C-5	C-5	1,775-hp Caterpillar G3606LE w/Oxidation Catalyst	1.96	8.57	2.15	9.43	1.01	4.44
C-6	C-6	1,775-hp Caterpillar G3606LE w/Oxidation Catalyst ⁽²⁾	1.96	8.57	2.15	9.43	1.01	4.44
C-7	C-7	1,775-hp Caterpillar G3606LE w/Oxidation Catalyst ⁽²⁾	1.96	8.57	2.15	9.43	1.01	4.44
C-8	C-8	1,775-hp Caterpillar G3606LE w/Oxidation Catalyst ⁽²⁾	1.96	8.57	2.15	9.43	1.01	4.44
C-9	C-9	1,775-hp Caterpillar G3606LE w/Oxidation Catalyst ⁽²⁾	1.96	8.57	2.15	9.43	1.01	4.44

⁽¹⁾ Includes formaldehyde (H₂CO).

⁽²⁾ Have been permanently removed from the facility.

Name/Model	NO _x (g/hp-hr) ²	CO (g/hp-hr) ²	VOC (g/hp-hr) ^{2,3}
2,370-hp Cat. G3608LE ¹	0.50	0.55	0.26
1,775-hp Cat. G3606LE ¹	0.50	0.55	0.26

¹ – with oxidation catalyst

² – Based on a three hour average.

³ – Includes formaldehyde.

- a. The engines shall only be fired with natural gas having a maximum sulfur content of 0.25 grains or less of total sulfur (as hydrogen sulfide) per 100 standard cubic feet (< 4 ppmv). Compliance can be shown by the following methods: for gaseous fuel, a current gas company bill, lab analysis, stain-tube analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least once every calendar year. [OAC 252:100-31]
- b. Each lean-burn engine shall be equipped with a properly functioning oxidation catalyst. [OAC 252:100-8-5(d)(1)(A)]
- c. Each engine shall have a permanent identification plate attached that shows the make, model number, and serial number. [OAC 252:100-43]
- d. At least once per calendar quarter, the permittee shall conduct tests of NO_x and CO emissions from the engine(s) and from each replacement engine/turbine when operating under representative conditions for that period. Testing is required for any engine/turbine that runs for more than 220 hours during that calendar quarter. A quarterly test may be conducted no sooner than 20 calendar days after the most recent test. Testing shall be conducted using a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD Portable Analyzer Guidance document, or an equivalent method approved by Air Quality. When four consecutive quarterly tests show the engine/turbine to be in compliance with the emissions limitations shown in the permit, then the testing frequency may be reduced to semi-annual testing. A semi-annual test may be conducted no sooner than 60 calendar days nor later than 180 calendar days after the most recent test. Likewise, when the following two consecutive semi-annual tests show compliance, the testing frequency may be reduced to annual testing. An annual test may be conducted no sooner than 120 calendar days nor later than 365 calendar days after the most recent test. Upon any showing of non-compliance with emissions limitations or testing that indicates that emissions are within 10% of the emission limitations, the testing frequency shall revert to quarterly. Reduced testing frequency does not apply to engines with catalytic converters or oxidation catalyst.[OAC 252:100-8-6(a)(3)(A)]
- e. When periodic compliance testing shows engine exhaust emissions in excess of the lb/hr limits, the permittee shall comply with the provisions of OAC 252:100-9. [OAC 252:100-9]
- f. The permittee shall comply with the Standards of Performance for Stationary Spark Ignition Internal Combustion Engines (SI-ICE), NSPS Subpart JJJJ, for all affected emission units, including but not limited to the following: [40 CFR §§ 60.4230-60.4248]

What This Subpart Covers

- i. §60.4230 Am I subject to this subpart?

Emission Standards for Owners and Operators

ii. § 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

iii. § 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Other Requirements for Owners and Operators

iv. § 60.4236 What is the deadline for importing or installing stationary SI ICE produced in the previous model year?

v. § 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

Compliance Requirements for Owners and Operators

vi. § 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

Testing Requirements for Owners and Operators

vii. § 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Notification, Reports, and Records for Owners and Operators

viii. § 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

General Provisions

ix. § 60.4246 What parts of the General Provisions apply to me?

Definitions

x. §60.4248 What definitions apply to this subpart?

BCPP-EUG B. Combustion Turbines: Emission limitations have been established for EU T-1 and T-2.

EU	Point	Make/Model	HP
T-1	T-1	Solar Taurus 70-10802S	10,862
T-2	T-2	Solar Taurus 70-10802SA	11,107

Emissions limits for turbine T-1:

[OAC 252:100-8-6(a)(1)]

Pollutant	lb/hr	ppmvd ¹	TPY
NO _x	5.06 ²	15.0 ²	22.16
CO	5.14 ³	25.0 ³	22.53
VOC	2.95 ³	25.0 ³	12.93

¹ All concentrations are corrected to 15% O₂, per turbine.

² One-hour average.

³ Three-hour average.

Emissions limits for turbine T-2:

[OAC 252:100-8-6(a)(1)]

Pollutant	lb/hr	ppmvd ¹	TPY
NO _x	5.17 ²	15.0 ²	22.66
CO	5.26 ³	25.0 ³	23.04
VOC	3.02 ³	25.0 ³	13.22

- ¹ All concentrations are corrected to 15% O₂, per turbine.
- ² One-hour average.
- ³ Three-hour average.

- a. The turbines shall only be fired with natural gas having a maximum sulfur content of 0.25 grains or less of total sulfur (as hydrogen sulfide) per 100 standard cubic feet (< 4 ppmv). Compliance can be shown by the following methods: for gaseous fuel, a current gas company bill, lab analysis, stain-tube analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least once every calendar year.

[OAC 252:100-31]
- b. Each turbine shall have a permanent identification plate attached that shows the make, model number, and serial number.

[OAC 252:100-43]
- c. The turbines shall be equipped with Solar’s SoLoNO_xTM technology (Lean-Premixed, Dry, Low-NO_x Combustors).

[OAC 252:100-8-34(b)]
- d. At least once per calendar quarter, the permittee shall conduct tests of NO_x and CO emissions from the turbines(s) and from each replacement engine/turbine when operating under representative conditions for that period. Testing is required for any engine/turbine that runs for more than 220 hours during that calendar quarter. A quarterly test may be conducted no sooner than 20 calendar days after the most recent test. Testing shall be conducted using a portable analyzer in accordance with a protocol meeting the requirements of the latest AQD Portable Analyzer Guidance document, or an equivalent method approved by Air Quality. When four consecutive quarterly tests show the engine/turbine to be in compliance with the emissions limitations shown in the permit, then the testing frequency may be reduced to semi-annual testing. A semi-annual test may be conducted no sooner than 60 calendar days nor later than 180 calendar days after the most recent test. Likewise, when the following two consecutive semi-annual tests show compliance, the testing frequency may be reduced to annual testing. An annual test may be conducted no sooner than 120 calendar days nor later than 365 calendar days after the most recent test. Upon any showing of non-compliance with emissions limitations or testing that indicates that emissions are within 10% of the emission limitations, the testing frequency shall revert to quarterly. Reduced testing frequency does not apply to engines with catalytic converters or oxidation catalyst.

[OAC 252:100-8-6 (a)(3)(A)]
- e. When testing shows turbine exhaust emissions in excess of the limits, the permittee shall comply with the provisions of OAC 252:100-9.

[OAC 252:100-9]
- f. The turbines are subject to the NSPS for Stationary Combustion Turbines 40 CFR Part 60, Subpart KKKK and shall comply with all applicable requirements including but not limited to:

[40 CFR § 60.4300 to § 60.4420]

Introduction

- i. §60.4300 What is the purpose of this subpart?
- ii. Applicability
- iii. § 60.4305 Does this subpart apply to my stationary combustion turbine?
- iv. § 60.4310 What types of operations are exempt from these standards of performance?

Emission Limits

- v. § 60.4315 What pollutants are regulated by this subpart?
- vi. § 60.4320 What emission limits must I meet for nitrogen oxides (NO_x)?
- vii. § 60.4325 What emission limits must I meet for NO_x if my turbine burns both natural gas and distillate oil (or some other combination of fuels)?
- viii. § 60.4330 What emission limits must I meet for sulfur dioxide (SO₂)?

General Compliance Requirements

- ix. §60.4333 What are my general requirements for complying with this subpart?

Monitoring

- x. § 60.4335 How do I demonstrate compliance for NO_x if I use water or steam injection?
- xi. § 60.4340 How do I demonstrate continuous compliance for NO_x if I do not use water or steam injection?
- xii. § 60.4345 What are the requirements for the continuous emission monitoring system equipment, if I choose to use this option?
- xiii. § 60.4350 How do I use data from the continuous emission monitoring equipment to identify excess emissions?
- xiv. § 60.4355 How do I establish and document a proper parameter monitoring plan?
- xv. § 60.4360 How do I determine the total sulfur content of the turbine's combustion fuel?
- xvi. § 60.4365 How can I be exempted from monitoring the total sulfur content of the fuel?
- xvii. § 60.4370 How often must I determine the sulfur content of the fuel?

Reporting

- xviii. § 60.4375 What reports must I submit?
- xix. § 60.4380 How are excess emissions and monitor downtime defined for NO_x?
- xx. § 60.4385 How are excess emissions and monitoring downtime defined for SO₂?
- xxi. § 60.4390 What are my reporting requirements if I operate an emergency combustion turbine or a research and development turbine?
- xxii. § 60.4395 When must I submit my reports?

Performance Tests

- xxiii. § 60.4400 How do I conduct the initial and subsequent performance tests, regarding NO_x?
- xxiv. § 60.4410 How do I establish a valid parameter range if I have chosen to continuously monitor parameters?
- xxv. § 60.4415 How do I conduct the initial and subsequent performance tests for sulfur?

Definitions

- xxvi. § 60.4420 What definitions apply to this subpart?

BCPP-EUG C. Gas-Fired Heater: Emission limits have been established for NO_x and CO for EU H-1. All other emissions are based on AP-42 (7/1998), Section 1.4 and are considered insignificant.

EU	Point	Description	MMBTUH
H-1	H-1	Regeneration Heater	28.00

Emissions limits for EU H-1:

[OAC 252:100-8-6(a)(1)]

Pollutant	lb/hr	lb/MMBTU	ppmvd ¹	TPY
NO _x	1.26 ²	0.045	36 ²	5.52
CO	2.07 ²	0.074	93 ²	9.08

¹ All concentrations are corrected to 3% O₂.

² Three-hour average.

- a. The heater shall only be fired with natural gas having a maximum sulfur content of 0.25 grains or less of total sulfur (as hydrogen sulfide) per 100 standard cubic feet (< 4 ppmv). Compliance can be shown by the following methods: for gaseous fuel, a current gas company bill, lab analysis, stain-tube analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least once every calendar year.

[OAC 252:100-31]

- b. The heater (EU H-1) shall be equipped with Low-NO_x burners.

[OAC 252:100-8-5(d)(1)(A)]

BCPP-EUG D. Amine Unit: No emission limits have been established for EU AMINE-1 since the emissions from this unit are routed to the Acid Gas Flare (EU FLARE-1). However, a throughput limit and sulfur content limit on the gas processed has been established.

EU	Point	Name	Throughput
AMINE-1	AMINE-1	Amine Unit	240 MMSCFD

- a. The amine unit shall only process natural gas with a maximum sulfur content of 0.25 grains or less of total sulfur (as hydrogen sulfide) per 100 standard cubic feet (< 4 ppmv). Compliance can be shown by the following methods: lab analysis, stain-tube analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least quarterly.

[OAC 252:100-31]

- b. The throughput of the amine unit shall be limited to 240 MMSCFD. The permittee shall keep records of the amount of gas processed through the amine unit on a daily basis.

[OAC 252:100-8-6(a)(3)]

- c. The amine unit still vent and flash tank shall be routed to the Acid Gas Flare (FLARE-1).

[OAC 252:100-31-26]

BCPP-EUG E. Flares: Emission limits have been established for SO₂ for EU FLARE-1. All other emissions for EU FLARE-1 were based on the heat input rating, AP-42 (02/18), Section 13.5, and combustion of an estimated amount of waste gas with an estimated heat content. Emissions from EU FLARE-2, EFLARE-1, EFLARE-2, and EFLARE-3 are based on AP-42 (02/18), Section 13.5, AP-42 (07/98), Section 1.4, and combustion of an estimated amount of waste gas and pilot gas with estimated heat contents.

EU	Point	Emission Unit
FLARE-1	FLARE-1	Acid Gas Flare
FLARE-2	FLARE-2	Main Plant Flare
EFLARE-1	EFLARE-1	Condensate Tanks/Truck Loading Enclosed Flare
EFLARE-2	EFLARE-2	Condensate Tanks/Truck Loading Enclosed Flare
EFLARE-3	EFLARE-3	Produced Water Tank/Truck Loading Enclosed Flare

Emissions limits for EU FLARE-1:

[OAC 252:100-8-6(a)(1)]

EU	SO ₂	
	lb/hr	TPY
FLARE-1	6.33	27.73

- a. The amine unit’s still vent and flash tank shall be routed to the Acid Gas Flare (EU FLARE-1) which shall reduce by at least 98% the H₂S in the waste gas streams by being oxidized to SO₂ prior to being emitted to the ambient air. [OAC 252:100-31-26(1)(A)]
- b. The Acid Gas Flare (EU FLARE-1) shall have an alarm system installed, maintained, and operated that will signal a malfunction flare. [OAC 252:100-31-26(1)(B)]
- c. EU FLARE-2 shall comply with the requirements of NSPS, Subpart A, § 60.18.
- d. EU FLARE-2, EFLARE-1, EFLARE-2, EFLARE-3 shall comply with the following: [OAC 252:100-8-6(a)(1) & (3)]
 - i. The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
 - ii. Each flare shall be equipped with an auto re-ignite pilot as a means of ensuring that continuous flame pilots remain functional at all times.

BCPP-EUG F. Condensate Tanks:

EU	Point	Contents	Barrels	Gallons	VOC (TPY)
TK-1	EFLARE-1/2	Condensate	400	16,800	0.17
TK-2	EFLARE-1/2	Condensate	400	16,800	0.17
TK-3	EFLARE-1/2	Condensate	400	16,800	0.17
TK-4	EFLARE-1/2	Condensate	400	16,800	0.17
TK-5	EFLARE-1/2	Condensate	400	16,800	0.17
TK-6	EFLARE-1/2	Condensate	400	16,800	0.17
TK-7	EFLARE-1/2	Condensate	400	16,800	0.17
TK-8	EFLARE-1/2	Condensate	400	16,800	0.17

- a. The produced liquids from the inlet separator shall be treated by a condensate stabilizer. The off-gases from the stabilizer shall be recycled/recompressed into the inlet manifold of the gas plant. [OAC 252:100-8-6(a)(1)]
- b. The condensate tanks shall be routed to a vapor collection system. Using the vapor collection system, the off-gases from the condensate tanks shall be routed to an enclosed flare (EU EFLARE-1 or EFLARE-2), with an overall control efficiency of 96%. [OAC 252:100-37-15(b) & 8-5(d)(1)(A)]
- c. All vessel gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place. [OAC 252:100-37-15(b) & 37-15(a)(2)]

BCPP-EUG G. Produced Water Tanks:

EU	Point	Description	Barrels	Gallons	VOC (TPY)
PW-1	EFLARE-3	Gunbarrel Separator	500	21,000	0.07
PW-2	EFLARE-3	Slop Oil/Produced Water Tank	400	16,800	<0.01
PW-3	EFLARE-3	Produced Water Tank	210	8,400	<0.01
PW-4	EFLARE-3	Produced Water Tank	210	8,400	<0.01
PW-5	EFLARE-3	Produced Water Tank	210	8,400	<0.01
PW-6	EFLARE-3	Produced Water Tank	210	8,400	<0.01

- a. The throughput of EUG G shall be limited to 250 BPD (monthly average). The permittee shall keep records of the amount of liquids processed through EUG G on a monthly basis. [OAC 252:100-8-6(a)(1) & (3)]
- b. The produced water tanks shall be routed to a vapor collection system. Using the vapor collection system, the off-gases from the produced water tanks shall be routed to an enclosed flare (EU EFLARE-3), with an overall control efficiency of 96%. [OAC 252:100-8-6(a)(1)]
- c. EU PW-1 (Gunbarrel Separator) shall comply with one of the following standards:
 - i. The container totally encloses the liquid contents and all openings are sealed. [OAC 252:100-37-37(1)]
 - ii. The container is equipped with a vapor-recovery system that consists of a vapor-gathering system capable of collecting the VOC vapors and gases discharged and a vapor-disposal system capable of processing such vapors and gases to prevent their emission to the atmosphere. [OAC 252:100-37-37(1)]
- d. EU PW-1 (Gunbarrel Separator) shall comply with the following:
 - i. All gauging and sampling devices shall be gas-tight except when gauging or sampling is taking place. [OAC 252:100-37-37]
 - ii. The oil removal devices shall be gas-tight except when manual skimming, inspection and/or repair is in progress. [OAC 252:100-37-37]

BCPP-EUG H. Truck Loading: Emission estimates from loading condensate into tank trucks were estimated based on AP-42 (1/95), Section 5.2, a throughput of 1,460,000 barrels per year (BPY), a 70% collection efficiency for vapor collection and control, and a 98% destruction efficiency because the vapors are vented to the enclosed flares (EU EFLARE-1 & EFLARE-2). Emission estimates from loading produced water into tank trucks were estimated based on AP-42 (1/95), Section 5.2, a throughput of 91,261.9 BPY, a 70% collection efficiency for vapor collection

and control, and a 98% destruction efficiency because the vapors are vented to an enclosed flare (EU EFLARE-3).

EU	Point	Name	Throughput
L-1	EFLARE-1/2	Condensate Truck Loading	1,460 MBPY
L-2	ELFARE-3	Produced Water Truck Loading	91.26 MBPY

Emissions limits for EU L-1:

[OAC 252:100-8-6(a)(1)]

Sources	VOC
	TPY
Condensate Truck Loading	57.00
Produced Water Truck Loading	0.06

- a. Condensate throughput shall not exceed 1,460,000 barrels in any 12-month period. Produced water throughput shall not exceed 91,261.9 barrels in any 12-month period. The permittee shall monitor and record the condensate and produced water throughputs each month. [OAC 252:100-8-6(a)(1) & (3)]
- b. The condensate and produced water loading system shall be equipped with a vapor collection system that collects the gases from the tank trucks being loaded and routes the vapors to an enclosed flare. [OAC 252:100-8-5(d)(1)(A) & 37-16(a)]
 - i. All loading and vapor lines for the stabilized condensate loading system shall be equipped with fittings that make vapor-tight connections and which close automatically when disconnected. [OAC 252:100-37-16(a)(1)(A)(ii)]
 - ii. A means shall be provided to prevent VOC drainage from the stabilized condensate loading device when it is removed from the tank truck or which completely drains before removal. [OAC 252:100-37-16(a)(2)]
 - iii. The tank truck shall also be equipped with a vapor collection system. [OAC 252:100-8-6(a) & 8-5(d)(1)(A)]
 - iv. The tank truck vapor collection system shall be connected to the condensate vapor collection system when loading stabilized condensate from the gas plant. [OAC 252:100-8-6(a) & 8-5(d)(1)(A)]

BCPP-EUG I. Fugitives: Emissions from the fugitive equipment leaks are based on equipment type, the number of components and the average emission factors for oil and gas facilities. There are no emission limits or limits on the number of components for these EU but they are required to meet certain work practices.

EU	Point	Number Items	Type of Equipment
FUG	FUG	2,541	Valves
		1,792	Flanges
		9,994	Connectors
		18	Pump Seals
		67	Other

BCPP-EUG J. Blowdowns: Emission limits for the compressor engine blowdowns and turbine blowdowns are summarized below.

EU	Point	Name	Throughput	VOC Weight %
BD-1	BD-1	Compressor Engine Blowdowns	1.32 MMSCFY	0.165
BD-2	BD-2	Turbine Blowdowns	47.88 MSCFY	0.165

- a. Compressor engine blowdowns shall not exceed 1.32 MMSCF in any 12-month period. The permittee shall monitor and record the amount of gases related to compressor engine blowdowns each month. [OAC 252:100-8-6(a)(1) & (3)]
- b. Turbine blowdowns shall not exceed 47.88 MSCF in any 12-month period. The permittee shall monitor and record the amount of gases related to turbine blowdowns each month. Turbine blowdowns shall be routed to a vapor collection system. Using the vapor collection system, the off-gases from the turbine blowdowns shall be routed to a flare (EU FLARE-2), with an overall control efficiency of 98%. [OAC 252:100-8-6(a)(1) & (3)]

BCPP-EUG K. Emergency Generator Reciprocating Internal Combustion Engine: Emission limitations have been established for EU GEN and include MSS. Emission limitations for EU GEN:

EU	Point	Name/Model	NO _x (g/hp-hr) ¹	CO (g/hp-hr) ¹	VOC (g/hp-hr) ¹
GEN	GEN	162-hp General Motors Vortec	2.0	4.0	1.0

¹ - Based on NSPS, Subpart JJJJ.

- a. The generator engine shall operate as an emergency generator as defined in 40 CFR Part 60 NSPS JJJJ § 60.4248.
- b. The generator engine shall only be fired with natural gas having a maximum sulfur content of 0.25 grains or less of total sulfur (as hydrogen sulfide) per 100 standard cubic feet (< 4 ppmv). Compliance can be shown by the following methods: for gaseous fuel, a current gas company bill, lab analysis, stain-tube analysis, gas contract, tariff sheet, or other approved methods. Compliance shall be demonstrated at least once every calendar year. [OAC 252:100-31]
- c. Each generator engine shall have a permanent identification plate attached that shows the make, model number, and serial number. [OAC 252:100-43]
- d. The permittee shall comply with the Standards of Performance for Stationary Spark Ignition (SI) Internal Combustion Engines (ICE), NSPS Subpart JJJJ, for all affected emission units, including but not limited to the following: [40 CFR §§ 60.4230-60.4248]

What This Subpart Covers

- i. §60.4230 Am I subject to this subpart?
Emission Standards for Owners and Operators
- ii. § 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

- iii. § 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Other Requirements for Owners and Operators

- iv. § 60.4236 What is the deadline for importing or installing stationary SI ICE produced in the previous model year?

- v. § 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

Compliance Requirements for Owners and Operators

- vi. § 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

Testing Requirements for Owners and Operators

- vii. § 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Notification, Reports, and Records for Owners and Operators

- viii. § 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

General Provisions

- ix. § 60.4246 What parts of the General Provisions apply to me?

Definitions

- x. §60.4248 What definitions apply to this subpart?

2. The permittee shall be authorized to operate this facility continuously (24 hours per day, every day of the year), with the exception of GEN. [OAC 252:100-8-6(a)]

3. The permittee is authorized to replace any internal combustion engine or turbine with emissions limitations specified in this permit with an engine or turbine that meets the following requirements: [OAC 252:100-8-6(f)(2)]

- a. The replacement engine or turbine shall comply with the same emissions limits as the engine or turbine that it replaced. This applies to lb/hr and TPY limits specified in this permit.
- b. The authorization of replacement of an engine or turbine includes temporary periods of 6 months or less for maintenance purposes.
- c. The permittee shall notify AQD in writing not later than 7 days prior to start-up of the replacement engine or turbine. Said notice shall identify the old engine/turbine and shall include the new engine/turbine make and model, serial number, horsepower rating, and pollutant emission rates (g/hp-hr, lb/hr, and TPY) at maximum horsepower for the altitude/location.
- d. Quarterly emissions tests for the replacement engine(s)/turbine(s) shall be conducted to confirm continued compliance with NO_x and CO emission limitations. A copy of the first quarter testing shall be provided to AQD within 60 days of start-up of each replacement engine/turbine. The test report shall include the engine/turbine fuel usage, stack flow (ACFM), stack temperature (°F), and pollutant emission rates (g/hp-hr, lbs/hr, and TPY) at maximum rated horsepower for the altitude/location.
- e. Replacement equipment and emissions are limited to equipment and emissions which are not a modification under NSPS or NESHAP.

- f. Replacement equipment and emissions are limited to equipment and emissions which are not a modification or a significant modification under PSD. For existing PSD facilities, the permittee shall calculate the PTE or the net emissions increase resulting from the replacement to document that it does not exceed significance levels and submit the results with the notice required by paragraph (c) of this Specific Condition. The permittee shall attach each such notice to their copy of the relevant permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield described in OAC 252:100-8-6(d) does not apply to any change made pursuant to this paragraph.
 - g. Engines whose installation and operation are authorized under this Specific Condition which are subject to 40 CFR Part 63, Subpart ZZZZ and/or 40 CFR Part 60, Subpart JJJJ shall comply with all applicable requirements.
 - h. Turbines whose installation and operation are authorized under this Specific Condition which are subject to 40 CFR Part 60, Subpart KKKK shall comply with all applicable requirements.
4. The owner/operator shall comply with all applicable requirements of 40 CFR Part 63, NESHAP, Subpart ZZZZ: Reciprocating Internal Combustion Engines, for each affected facility including but not limited to: [40 CFR §§63.6580 through 63.6675]

What This Subpart Covers

- a. § 63.6580 What is the purpose of subpart ZZZZ?
- b. § 63.6585 Am I subject to this subpart?
- c. § 63.6590 What parts of my plant does this subpart cover?
- d. § 63.6595 When do I have to comply with this subpart?

Emission and Operating Limitations

- e. § 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?
- f. § 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?
- g. § 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?
- h. § 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
- i. § 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

General Compliance Requirements

- j. § 63.6605 What are my general requirements for complying with this subpart?

Testing and Initial Compliance Requirements

- k. § 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

- l. § 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?
- m. § 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?
- n. § 63.6615 When must I conduct subsequent performance tests?
- o. § 63.6620 What performance tests and other procedures must I use?
- p. § 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?
- q. § 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

Continuous Compliance Requirements

- r. § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
- s. § 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

Notifications, Reports, and Records

- t. § 63.6645 What notifications must I submit and when?
- u. § 63.6650 What reports must I submit and when?
- v. § 63.6655 What records must I keep?
- w. § 63.6660 In what form and how long must I keep my records?

Other Requirements and Information

- x. § 63.6665 What parts of the General Provisions apply to me?
- y. § 63.6670 Who implements and enforces this subpart?
- z. § 63.6675 What definitions apply to this subpart?

5. The permittee shall comply with NSPS, Subpart OOOO, Standards of Performance for Crude Oil and Natural Gas Facilities for Which Construction, Modification, or Reconstruction Commenced After August 23, 2011, and on or Before September 18, 2015, for all affected facilities located at this facility. [40 CFR §§60.5360 to 60.5430]

- a. § 60.5360 What is the purpose of this subpart?
- b. § 60.5365 Am I subject to this subpart?
- c. § 60.5370 When must I comply with this subpart?
- d. § 60.5375 What standards apply to gas well affected facilities?
- e. § 60.5380 What standards apply to centrifugal compressor affected facilities?
- f. § 60.5385 What standards apply to reciprocating compressor affected facilities?
- g. § 60.5390 What standards apply to pneumatic controller affected facilities?
- h. § 60.5395 What standards apply to storage vessel affected facilities?
- i. § 60.5400 What equipment leak standards apply to affected facilities at an onshore natural gas processing plant?
- j. § 60.5401 What are the exceptions to the equipment leak standards for affected facilities at onshore natural gas processing plants?

- k. § 60.5402 What are the alternative emission limitations for equipment leaks from onshore natural gas processing plants?
- l. § 60.5405 What standards apply to sweetening units at onshore natural gas processing plants?
- m. § 60.5406 What test methods and procedures must I use for my sweetening units affected facilities at onshore natural gas processing plants?
- n. § 60.5407 What are the requirements for monitoring of emissions and operations from my sweetening unit affected facilities at onshore natural gas processing plants?
- o. § 60.5408 What is an optional procedure for measuring hydrogen sulfide in acid gas-Tutwiler Procedure?
- p. § 60.5410 How do I demonstrate initial compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my equipment leaks and sweetening unit affected facilities at onshore natural gas processing plants?
- q. § 60.5411 What additional requirements must I meet to determine initial compliance for my covers and closed vent systems routing emissions from storage vessels, reciprocating compressors and centrifugal compressor wet seal fluid degassing systems?
- r. § 60.5412 What additional requirements must I meet for determining initial compliance with control devices used to comply with the emission standards for my storage vessel or centrifugal compressor affected facility?
- s. § 60.5413 What are the performance testing procedures for control devices used to demonstrate compliance at my storage vessel or centrifugal compressor affected facility?
- t. § 60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?
- u. § 60.5416 What are the initial and continuous cover and closed vent system inspection and monitoring requirements for my storage vessel, centrifugal compressor and reciprocating compressor affected facilities?
- v. § 60.5417 What are the continuous control device monitoring requirements for my storage vessel or centrifugal compressor affected facility?
- w. § 60.5420 What are my notification, reporting, and recordkeeping requirements?
- x. § 60.5421 What are my additional recordkeeping requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants?
- y. § 60.5422 What are my additional reporting requirements for my affected facility subject to VOC requirements for onshore natural gas processing plants?
- z. § 60.5423 What additional recordkeeping and reporting requirements apply to my sweetening unit affected facilities at onshore natural gas processing plants?
- aa. § 60.5425 What parts of the General Provisions apply to me?
- bb. § 60.5430 What definitions apply to this subpart?

6. The following records shall be maintained on-site to verify Insignificant Activities. No recordkeeping is required for those operations that qualify as Trivial Activities.

[OAC 252:100-8-6 (a)(3)(B)]

- a. For fluid storage tanks with a capacity of less than 39,894 gallons and a true vapor pressure less than 1.5 psia: records of capacity of the tanks and contents.
 - b. For activities that have the potential to emit less than 5 TPY (actual) of any criteria pollutant: the type of activity and the amount of emissions from that activity (annual).
7. The permittee shall maintain records of operations as listed below. These records shall be maintained on-site or at a local field office for at least five years after the date of recording and shall be provided to regulatory personnel upon request. [OAC 252:100-8-6 (a)(3)(B)]
- a. Periodic emission testing for the engines and each replacement engine/turbine.
 - b. Operating hours for the engines if less than 220 hours per quarter and not tested.
 - c. O&M records for an engine if not tested in each 6-month period.
 - d. Records of the flare pilot flame outages.
 - e. Records required by NSPS, Subparts A, JJJJ, KKKK, and OOOO.
 - f. Records required by NESHAP, Subpart ZZZZ.
 - g. Flow rate of the acid gas from the amine unit (quarterly average).
 - h. Amine unit emission estimates and H₂S concentrations of the natural gas or natural gas liquids (quarterly).
 - i. Condensate throughput for the gas plant (monthly and 12-month rolling totals).
 - j. Produced water throughput for the gas plant (monthly and 12-month rolling totals).
 - k. Records required by Specific Condition No. 1, BCPP-EUG A. a.; BCPP-EUG B. a.; and BCPP-EUG C. a.
8. No later than 30 days after each anniversary date of the issuance of the Part 70 operating permit (June 30, 2015), the permittee shall submit to Air Quality Division of DEQ, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit. [OAC 252:100-8-6 (c)(5)(A) & (D)]
9. This permit supersedes all previous Air Quality operating permits for this facility which are now cancelled.

**MAJOR SOURCE AIR QUALITY PERMIT
STANDARD CONDITIONS
(June 21, 2016)**

SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with the federal Clean Air Act (42 U.S.C. 7401, et al.) and under the authority of the Oklahoma Clean Air Act and the rules promulgated there under. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

B. The issuing Authority for the permit is the Air Quality Division (AQD) of the Oklahoma Department of Environmental Quality (DEQ). The permit does not relieve the holder of the obligation to comply with other applicable federal, state, or local statutes, regulations, rules, or ordinances. [Oklahoma Clean Air Act, 27A O.S. § 2-5-112]

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.

[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

D. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this paragraph shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety, or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations. [OAC 252:100-8-6(a)(7)(B)]

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

A. Any exceedance resulting from an emergency and/or posing an imminent and substantial danger to public health, safety, or the environment shall be reported in accordance with Section XIV (Emergencies). [OAC 252:100-8-6(a)(3)(C)(iii)(I) & (II)]

B. Deviations that result in emissions exceeding those allowed in this permit shall be reported consistent with the requirements of OAC 252:100-9, Excess Emission Reporting Requirements. [OAC 252:100-8-6(a)(3)(C)(iv)]

C. Every written report submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F. [OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. These records, including monitoring data and necessary support information, shall be retained on-site or at a nearby field office for a period of at least five years from the date of the monitoring sample, measurement, report, or application, and shall be made available for inspection by regulatory personnel upon request. Support information includes all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Where appropriate, the permit may specify that records may be maintained in computerized form.

[OAC 252:100-8-6 (a)(3)(B)(ii), OAC 252:100-8-6(c)(1), and OAC 252:100-8-6(c)(2)(B)]

B. Records of required monitoring shall include:

- (1) the date, place and time of sampling or measurement;
- (2) the date or dates analyses were performed;
- (3) the company or entity which performed the analyses;
- (4) the analytical techniques or methods used;
- (5) the results of such analyses; and
- (6) the operating conditions existing at the time of sampling or measurement.

[OAC 252:100-8-6(a)(3)(B)(i)]

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report.

[OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting Of Deviations From Permit Terms) of these standard conditions.

[OAC 252:100-8-6(a)(3)(C)(iii)]

E. In addition to any monitoring, recordkeeping or reporting requirement specified in this permit, monitoring and reporting may be required under the provisions of OAC 252:100-43, Testing, Monitoring, and Recordkeeping, or as required by any provision of the Federal Clean Air Act or Oklahoma Clean Air Act.

[OAC 252:100-43]

F. Any Annual Certification of Compliance, Semi Annual Monitoring and Deviation Report, Excess Emission Report, and Annual Emission Inventory submitted in accordance with this permit shall be certified by a responsible official. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete."

[OAC 252:100-8-5(f), OAC 252:100-8-6(a)(3)(C)(iv), OAC 252:100-8-6(c)(1), OAC 252:100-9-7(e), and OAC 252:100-5-2.1(f)]

G. Any owner or operator subject to the provisions of New Source Performance Standards (“NSPS”) under 40 CFR Part 60 or National Emission Standards for Hazardous Air Pollutants (“NESHAPs”) under 40 CFR Parts 61 and 63 shall maintain a file of all measurements and other information required by the applicable general provisions and subpart(s). These records shall be maintained in a permanent file suitable for inspection, shall be retained for a period of at least five years as required by Paragraph A of this Section, and shall include records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility, any malfunction of the air pollution control equipment; and any periods during which a continuous monitoring system or monitoring device is inoperative.

[40 C.F.R. §§60.7 and 63.10, 40 CFR Parts 61, Subpart A, and OAC 252:100, Appendix Q]

H. The permittee of a facility that is operating subject to a schedule of compliance shall submit to the DEQ a progress report at least semi-annually. The progress reports shall contain dates for achieving the activities, milestones or compliance required in the schedule of compliance and the dates when such activities, milestones or compliance was achieved. The progress reports shall also contain an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted. [OAC 252:100-8-6(c)(4)]

I. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer’s instructions and in accordance with a protocol meeting the requirements of the “AQD Portable Analyzer Guidance” document or an equivalent method approved by Air Quality. [OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

J. The reporting of total particulate matter emissions as required in Part 7 of OAC 252:100-8 (Permits for Part 70 Sources), OAC 252:100-19 (Control of Emission of Particulate Matter), and OAC 252:100-5 (Emission Inventory), shall be conducted in accordance with applicable testing or calculation procedures, modified to include back-half condensables, for the concentration of particulate matter less than 10 microns in diameter (PM₁₀). NSPS may allow reporting of only particulate matter emissions caught in the filter (obtained using Reference Method 5).

K. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 C.F.R. Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-8-6(c)(1) and OAC 252:100, Appendix Q]

SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to the AQD, with a copy to the US EPA, Region 6, a certification of compliance with the terms and conditions of this permit and of any other applicable requirements which have become effective since the issuance of this permit.

[OAC 252:100-8-6(c)(5)(A), and (D)]

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or

intermittent; the methods used for determining compliance, currently and over the reporting period. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source. [OAC 252:100-8-6(c)(5)(C)(i)-(v)]

C. The compliance certification shall contain a certification by a responsible official as to the results of the required monitoring. This certification shall be signed by a responsible official, and shall contain the following language: "I certify, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete." [OAC 252:100-8-5(f) and OAC 252:100-8-6(c)(1)]

D. Any facility reporting noncompliance shall submit a schedule of compliance for emissions units or stationary sources that are not in compliance with all applicable requirements. This schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with any applicable requirements for which the emissions unit or stationary source is in noncompliance. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the emissions unit or stationary source is subject. Any such schedule of compliance shall be supplemental to, and shall not sanction noncompliance with, the applicable requirements on which it is based, except that a compliance plan shall not be required for any noncompliance condition which is corrected within 24 hours of discovery.

[OAC 252:100-8-5(e)(8)(B) and OAC 252:100-8-6(c)(3)]

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

The permittee shall comply with any additional requirements that become effective during the permit term and that are applicable to the facility. Compliance with all new requirements shall be certified in the next annual certification. [OAC 252:100-8-6(c)(6)]

SECTION VI. PERMIT SHIELD

A. Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC 252:100-8) shall be deemed compliance with the applicable requirements identified and included in this permit. [OAC 252:100-8-6(d)(1)]

B. Those requirements that are applicable are listed in the Standard Conditions and the Specific Conditions of this permit. Those requirements that the applicant requested be determined as not applicable are summarized in the Specific Conditions of this permit. [OAC 252:100-8-6(d)(2)]

SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.

[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

SECTION VIII. TERM OF PERMIT

A. Unless specified otherwise, the term of an operating permit shall be five years from the date of issuance. [OAC 252:100-8-6(a)(2)(A)]

B. A source's right to operate shall terminate upon the expiration of its permit unless a timely and complete renewal application has been submitted at least 180 days before the date of expiration. [OAC 252:100-8-7.1(d)(1)]

C. A duly issued construction permit or authorization to construct or modify will terminate and become null and void (unless extended as provided in OAC 252:100-8-1.4(b)) if the construction is not commenced within 18 months after the date the permit or authorization was issued, or if work is suspended for more than 18 months after it is commenced. [OAC 252:100-8-1.4(a)]

D. The recipient of a construction permit shall apply for a permit to operate (or modified operating permit) within 180 days following the first day of operation. [OAC 252:100-8-4(b)(5)]

SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

[OAC 252:100-8-6 (a)(6)]

SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.

[OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued.

[OAC 252:100-8-6(c)(6)]

SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the DEQ may request to determine whether cause exists for modifying, reopening, revoking, reissuing, terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit.

[OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.

[OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer.

[Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.

[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances:

[OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

- (1) Additional requirements under the Clean Air Act become applicable to a major source category three or more years prior to the expiration date of this permit. No such reopening is required if the effective date of the requirement is later than the expiration date of this permit.
- (2) The DEQ or the EPA determines that this permit contains a material mistake or that the permit must be revised or revoked to assure compliance with the applicable requirements.
- (3) The DEQ or the EPA determines that inaccurate information was used in establishing the emission standards, limitations, or other conditions of this permit. The DEQ may revoke and not reissue this permit if it determines that the permittee has submitted false or misleading information to the DEQ.
- (4) DEQ determines that the permit should be amended under the discretionary reopening provisions of OAC 252:100-8-7.3(b).

C. The permit may be reopened for cause by EPA, pursuant to the provisions of OAC 100-8-7.3(d).

[OAC 100-8-7.3(d)]

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The notification should include any changes which may alter the status of a “grandfathered source,” as defined under AQD rules. Such changes may require a permit modification.

[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited.

[OAC 252:100-8-6(c)(6)]

SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(17) for confidential information submitted to or obtained by the DEQ under this section):

- (1) enter upon the permittee's premises during reasonable/normal working hours where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- (2) have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- (3) inspect, at reasonable times and using reasonable safety practices, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- (4) as authorized by the Oklahoma Clean Air Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit.

[OAC 252:100-8-6(c)(2)]

SECTION XIV. EMERGENCIES

A. Any exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.

[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance.

[OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error.

[OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that:

[OAC 252:100-8-6 (e)(2)]

- (1) an emergency occurred and the permittee can identify the cause or causes of the emergency;
- (2) the permitted facility was at the time being properly operated;
- (3) during the period of the emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit.

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof.

[OAC 252:100-8-6(e)(3)]

F. Every written report or document submitted under this section shall be certified as required by Section III (Monitoring, Testing, Recordkeeping & Reporting), Paragraph F.

[OAC 252:100-8-6(a)(3)(C)(iv)]

SECTION XV. RISK MANAGEMENT PLAN

The permittee, if subject to the provision of Section 112(r) of the Clean Air Act, shall develop and register with the appropriate agency a risk management plan by June 20, 1999, or the applicable effective date. [OAC 252:100-8-6(a)(4)]

SECTION XVI. INSIGNIFICANT ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate individual emissions units that are either on the list in Appendix I to OAC Title 252, Chapter 100, or whose actual calendar year emissions do not exceed any of the limits below. Any activity to which a State or Federal applicable requirement applies is not insignificant even if it meets the criteria below or is included on the insignificant activities list.

- (1) 5 tons per year of any one criteria pollutant.
- (2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.

[OAC 252:100-8-2 and OAC 252:100, Appendix I]

SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.

[OAC 252:100-8-2 and OAC 252:100, Appendix J]

SECTION XVIII. OPERATIONAL FLEXIBILITY

A. A facility may implement any operating scenario allowed for in its Part 70 permit without the need for any permit revision or any notification to the DEQ (unless specified otherwise in the permit). When an operating scenario is changed, the permittee shall record in a log at the facility the scenario under which it is operating. [OAC 252:100-8-6(a)(10) and (f)(1)]

B. The permittee may make changes within the facility that:

- (1) result in no net emissions increases,
- (2) are not modifications under any provision of Title I of the federal Clean Air Act, and
- (3) do not cause any hourly or annual permitted emission rate of any existing emissions unit to be exceeded;

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or

condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph. [OAC 252:100-8-6(f)(2)]

SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

A. The following applicable requirements and state-only requirements apply to the facility unless elsewhere covered by a more restrictive requirement:

- (1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]
- (2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]
- (3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for: [OAC 252:100-25]
 - (a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity;
 - (b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7;
 - (c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or
 - (d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.
- (4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]
- (5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]
- (6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]
- (7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

SECTION XX. STRATOSPHERIC OZONE PROTECTION

A. The permittee shall comply with the following standards for production and consumption of ozone-depleting substances: [40 CFR 82, Subpart A]

- (1) Persons producing, importing, or placing an order for production or importation of certain class I and class II substances, HCFC-22, or HCFC-141b shall be subject to the requirements of §82.4;
- (2) Producers, importers, exporters, purchasers, and persons who transform or destroy certain class I and class II substances, HCFC-22, or HCFC-141b are subject to the recordkeeping requirements at §82.13; and
- (3) Class I substances (listed at Appendix A to Subpart A) include certain CFCs, Halons, HBFCs, carbon tetrachloride, trichloroethane (methyl chloroform), and bromomethane (Methyl Bromide). Class II substances (listed at Appendix B to Subpart A) include HCFCs.

B. If the permittee performs a service on motor (fleet) vehicles when this service involves an ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all applicable requirements. Note: The term “motor vehicle” as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term “MVAC” as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant. [40 CFR 82, Subpart B]

C. The permittee shall comply with the following standards for recycling and emissions reduction except as provided for MVACs in Subpart B: [40 CFR 82, Subpart F]

- (1) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to § 82.156;
- (2) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to § 82.158;
- (3) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to § 82.161;
- (4) Persons disposing of small appliances, MVACs, and MVAC-like appliances must comply with record-keeping requirements pursuant to § 82.166;
- (5) Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to § 82.158; and
- (6) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to § 82.166.

SECTION XXI. TITLE V APPROVAL LANGUAGE

A. DEQ wishes to reduce the time and work associated with permit review and, wherever it is not inconsistent with Federal requirements, to provide for incorporation of requirements established through construction permitting into the Source’s Title V permit without causing redundant review. Requirements from construction permits may be incorporated into the Title V permit through the administrative amendment process set forth in OAC 252:100-8-7.2(a) only if the following procedures are followed:

- (1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be

incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.

- (2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
- (3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).
- (4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R. § 70.8(a) and (c).
- (5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
- (6) The DEQ complies with 40 C.F.R. § 70.8(d).
- (7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).
- (8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
- (9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).
- (10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

B. To the extent that these conditions are not followed, the Title V permit must go through the Title V review process.

SECTION XXII. CREDIBLE EVIDENCE

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any provision of the Oklahoma implementation plan, nothing shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed. [OAC 252:100-43-6]



PART 70 PERMIT

AIR QUALITY DIVISION
STATE OF OKLAHOMA
DEPARTMENT OF ENVIRONMENTAL QUALITY
707 NORTH ROBINSON, SUITE 4100
P.O. BOX 1677
OKLAHOMA CITY, OKLAHOMA 73101-1677

Permit No. 2019-1308-TVR

MarkWest Oklahoma Gas Company, L.L.C.,

having complied with the requirements of the law, is hereby granted permission to operate the Buffalo Creek Processing Plant, NE/4 of Section 2, T10N, R25W, Beckham County, Oklahoma, subject to Specific Conditions and Standard Conditions dated June 21, 2016, both of which are attached:

This permit shall expire 5 years from the date below, except as authorized under Section VIII of the Standard Conditions.

Kendal Stegmann, Division Director

Air Quality Division

Issuance Date



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

Jeremy Cantrell
Environmental Coordinator
MarkWest Oklahoma Gas Company, L.L.C.
905 S. Eastern Ave.
Elk City, OK 73644

SUBJECT: Permit Number: **2019-1308-TV**
Facility: Buffalo Creek Processing Plant [Facility ID: 9798]
Company: MarkWest Oklahoma Gas Company, L.L.C.
Location: NE/4, Section 2, T10N, R25W, Beckham County, Oklahoma

Dear Mr. Cantrell:

Air Quality Division has completed the initial review of your permit application referenced above. This application has been determined to be a **Tier II**. In accordance with 27A O.S. § 2-14-302 and OAC 252:004-7-13(c) the enclosed draft permit is now ready for public review. The requirements for public review include the following steps which you must accomplish:

1. Publish at least one legal notice (one day) in at least one newspaper of general circulation within the county where the facility is located. (Instructions enclosed)
2. Provide for public review, for a period of 30 days following the date of the newspaper announcement, a copy of the application and draft permit at a convenient location (preferentially at a public location) within the county of the facility.
3. Send AQD a signed affidavit of publication for the notice(s) from Item #1 above within 20 days of publication of the draft permit. Any additional comments or requested changes you have for the draft permit or the application should be submitted within 30 days of publication.

Thank you for your cooperation in this matter. If we may be of further service, please contact Junru Wang at Junru.Wang@deq.ok.gov or (405) 702-4197.

Sincerely,

A handwritten signature in black ink that reads 'Phillip Fielder'.

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION





SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

Jeremy Cantrell
Environmental Coordinator
MarkWest Oklahoma Gas Company, L.L.C.
905 S. Eastern Ave.
Elk City, OK 73644

SUBJECT: Permit Number: **2019-1308-TVR**
Facility: Buffalo Creek Processing Plant [Facility ID: 9798]
Company: MarkWest Oklahoma Gas Company, L.L.C.
Location: NE/4, Section 2, T10N, R25W, Beckham County, Oklahoma

Dear Mr. Cantrell:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to the certain standards and specific conditions that are attached. These conditions must be carefully followed since they define the limits of the permit and will be confirmed by periodic inspections.

Also note that you are required to annually submit an emissions inventory for this facility. An emissions inventory must be completed through DEQ's electronic reporting system by April 1st of every year. Any questions concerning the submittal process should be referred to the Emissions Inventory Staff at (405) 702-4100.

Thank you for your cooperation in this matter. If we may be of further service, please contact the permit writer at Junru.Wang@deq.ok.gov or (405) 702-4197.

Sincerely,

DRAFT

Phillip Fielder, P.E.
Chief Engineer
AIR QUALITY DIVISION

Enclosures



NOTICE OF DRAFT PERMIT TIER II or TIER III AIR QUALITY PERMIT APPLICATION

APPLICANT RESPONSIBILITIES

Permit applicants are required to give public notice that a **Tier II** or **Tier III** draft permit has been prepared by DEQ. The notice must be published in one newspaper local to the site or facility. Upon publication, a signed affidavit of publication must be obtained from the newspaper and sent to AQD. Note that if either the applicant or the public requests a public meeting, this must be arranged through the Customer Services Division of the DEQ.

REQUIRED CONTENT (27A O.S. § 2-14-302 and OAC 252:4-7-13(c))

1. A statement that a Tier II or Tier III draft permit has been prepared by DEQ;
2. Name and address of the applicant;
3. Name, address, driving directions, legal description and county of the site or facility;
4. The type of permit or permit action being sought;
5. A description of activities to be regulated, including an estimate of emissions from the facility;
6. Location(s) where the application and draft permit may be reviewed (a location in the county where the site/facility is located must be included);
7. Name, address, and telephone number of the applicant and DEQ contacts;
8. Any additional information required by DEQ rules or deemed relevant by applicant;
9. A 30-day opportunity to request a formal public meeting on the draft permit.

SAMPLE NOTICE on page 2.

SAMPLE NOTICE (*Italicized print is to be filled in by the applicant.*):

DEQ NOTICE OF TIER ...II or III... DRAFT PERMIT

A Tier ...II or III... application for an air quality ...type of permit or permit action being sought [e.g., Construction Permit for a Major Facility]... has been filed with the Oklahoma Department of Environmental Quality (DEQ) by applicant, ...name and address.

The applicant requests approval to ...brief description of purpose of application... at the ...site/facility name ... [proposed to be]... located at ...physical address (if any), driving directions, and legal description including county....

In response to the application, DEQ has prepared a draft permit [modification] (Permit Number: ...xx-xxx-x...), which may be reviewed at ...locations (one must be in the county where the site/facility is located)... or at the Air Quality Division's main office (see address below). The draft permit is also available for review in the Air Quality Section of DEQ's Web Page: <http://www.deq.ok.gov/>

This draft permit would authorize the facility to emit the following regulated pollutants: (list each pollutant and amounts in tons per year (TPY))

The public comment period ends 30 days after the date of publication of this notice. Any person may submit written comments concerning the draft permit to the Air Quality Division contact listed below. [Modifications only, add: Only those issues relevant to the proposed modification(s) are open for comment.] A public meeting on the draft permit [modification] may also be requested in writing at the same address. Note that all public meetings are to be arranged and conducted by DEQ/CSD staff.

In addition to the public comment opportunity offered under this notice, this draft permit is subject to U.S. Environmental Protection Agency (EPA) review, EPA objection, and petition to EPA, as provided by 40 CFR § 70.8. [For Construction Permits, add: The requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process. Therefore, no additional opportunity to provide comments or EPA review, EPA objection, and petitions to EPA will be available to the public when requirements from the construction permit are incorporated into the Title V permit.]

If the Administrator (EPA) does not object to the proposed permit, the public has 60 days following the Administrator's 45 day review period to petition the Administrator to make such an objection as provided in 40 CFR 70.8(d) and in OAC 252:100-8-8(j). Information on all permit actions and applicable review time lines is available in the Air Quality section of the DEQ Web page: <http://www.deq.ok.gov/>.

For additional information, contact ...names, addresses and telephone numbers of contact persons for the applicant, or contact DEQ at: Chief Engineer, Permits & Engineering Group, Air Quality Division, 707 N. Robinson, Suite 4100, P.O. Box 1677, Oklahoma City, OK, 73101-1677. Phone No. (405) 702-4100.

Department of Environmental Quality (DEQ)
Air Quality Division (AQD)
Acronym List
2-9-21

ACFM	Actual Cubic Feet per Minute	GR	Grain(s) (gr)
AD	Applicability Determination	H₂CO	Formaldehyde
AFRC	Air-to-Fuel Ratio Controller	H₂S	Hydrogen Sulfide
API	American Petroleum Institute	HAP	Hazardous Air Pollutants
ASTM	American Society for Testing and Materials	HC	Hydrocarbon
		HCFC	Hydrochlorofluorocarbon
BACT	Best Available Control Technology	HFR	Horizontal Fixed Roof
BAE	Baseline Actual Emissions	HON	Hazardous Organic NESHAP
BHP	Brake Horsepower (bhp)	HP	Horsepower (hp)
BTU	British thermal unit (Btu)	HR	Hour (hr)
		I&M	Inspection and Maintenance
C&E	Compliance and Enforcement	IBR	Incorporation by Reference
CAA	Clean Air Act	ICE	Internal Combustion Engine
CAM	Compliance Assurance Monitoring		
CAS	Chemical Abstract Service	LAER	Lowest Achievable Emission Rate
CAAA	Clean Air Act Amendments	LB	Pound(s) [Mass] (lb, lbs, lbm)
CC	Catalytic Converter	LB/HR	Pound(s) per Hour (lb/hr)
CCR	Continuous Catalyst Regeneration	LDAR	Leak Detection and Repair
CD	Consent Decree	LNG	Liquefied Natural Gas
CEM	Continuous Emission Monitor	LT	Long Ton(s) (metric)
CFC	Chlorofluorocarbon		
CFR	Code of Federal Regulations	M	Thousand (Roman Numeral)
CI	Compression Ignition	MAAC	Maximum Acceptable Ambient Concentration
CNG	Compressed Natural Gas	MACT	Maximum Achievable Control Technology
CO	Carbon Monoxide or Consent Order	MM	Prefix used for Million (Thousand-Thousand)
COA	Capable of Accommodating	MMBTU	Million British Thermal Units (MMBtu)
COM	Continuous Opacity Monitor	MMBTUH	Million British Thermal Units per Hour (MMBtu/hr)
		MMSCF	Million Standard Cubic Feet (MMscf)
D	Day	MMSCFD	Million Standard Cubic Feet per Day
DEF	Diesel Exhaust Fluid	MSDS	Material Safety Data Sheet
DG	Demand Growth	MWC	Municipal Waste Combustor
DSCF	Dry Standard (At Standard Conditions) Cubic Foot (Feet)	MWe	Megawatt Electrical
		NA	Nonattainment
EGU	Electric Generating Unit	NAAQS	National Ambient Air Quality Standards
EI	Emissions Inventory	NAICS	North American Industry Classification System
EPA	Environmental Protection Agency	NESHAP	National Emission Standards for Hazardous Air Pollutants
ESP	Electrostatic Precipitator	NH₃	Ammonia
EUG	Emissions Unit Group	NMHC	Non-methane Hydrocarbon
EUSGU	Electric Utility Steam Generating Unit	NGL	Natural Gas Liquids
		NO₂	Nitrogen Dioxide
FCE	Full Compliance Evaluation	NO_x	Nitrogen Oxides
FCCU	Fluid Catalytic Cracking Unit	NOI	Notice of Intent
FIP	Federal Implementation Plan	NSCR	Non-Selective Catalytic Reduction
FR	Federal Register	NSPS	New Source Performance Standards
GACT	Generally Achievable Control Technology		
GAL	Gallon (gal)		
GDF	Gasoline Dispensing Facility		
GEP	Good Engineering Practice		
GHG	Greenhouse Gases		

NSR	New Source Review	SOP	Standard Operating Procedure
O₃	Ozone	SRU	Sulfur Recovery Unit
O&G	Oil and Gas	T	Tons
O&M	Operation and Maintenance	TAC	Toxic Air Contaminant
O&NG	Oil and Natural Gas	THC	Total Hydrocarbons
OAC	Oklahoma Administrative Code	TPY	Tons per Year
OC	Oxidation Catalyst	TRS	Total Reduced Sulfur
PAH	Polycyclic Aromatic Hydrocarbons	TSP	Total Suspended Particulates
PAE	Projected Actual Emissions	TV	Title V of the Federal Clean Air Act
PAL	Plant-wide Applicability Limit	µg/m³	Micrograms per Cubic Meter
Pb	Lead	US EPA	U. S. Environmental Protection Agency
PBR	Permit by Rule	VFR	Vertical Fixed Roof
PCB	Polychlorinated Biphenyls	VMT	Vehicle Miles Traveled
PCE	Partial Compliance Evaluation	VOC	Volatile Organic Compound
PEA	Portable Emissions Analyzer	VOL	Volatile Organic Liquid
PFAS	Per- and Polyfluoroalkyl Substance	VRT	Vapor Recovery Tower
PM	Particulate Matter	VRU	Vapor Recovery Unit
PM_{2.5}	Particulate Matter with an Aerodynamic Diameter <= 2.5 Micrometers	YR	Year
PM₁₀	Particulate Matter with an Aerodynamic Diameter <= 10 Micrometers	2SLB	2-Stroke Lean Burn
POM	Particulate Organic Matter or Polycyclic Organic Matter	4SLB	4-Stroke Lean Burn
ppb	Parts per Billion	4SRB	4-Stroke Rich Burn
ppm	Parts per Million		
ppmv	Parts per Million Volume		
ppmvd	Parts per Million Dry Volume		
PSD	Prevention of Significant Deterioration		
psi	Pounds per Square Inch		
psia	Pounds per Square Inch Absolute		
psig	Pounds per Square Inch Gage		
RACT	Reasonably Available Control Technology		
RATA	Relative Accuracy Test Audit		
RFG	Refinery Fuel Gas		
RICE	Reciprocating Internal Combustion Engine		
RO	Responsible Official		
ROAT	Regional Office at Tulsa		
RVP	Reid Vapor Pressure		
SCC	Source Classification Code		
SCF	Standard Cubic Foot		
SCFD	Standard Cubic Feet per Day		
SCFM	Standard Cubic Feet per Minute		
SCR	Selective Catalytic Reduction		
SER	Significant Emission Rate		
SI	Spark Ignition		
SIC	Standard Industrial Classification		
SIP	State Implementation Plan		
SNCR	Selective Non-Catalytic Reduction		
SO₂	Sulfur Dioxide		
SO_x	Sulfur Oxides		