OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **March 21, 2005**

TO: Dawson Lasseter, P.E., Chief Engineer, Permits Section

THROUGH: Ing Yang, P.E., New Source Permits Section

THROUGH: Herb Neumann, P.E., Tulsa Regional Office

THROUGH: Peer Review

FROM: David Schutz, P.E., New Source Permits Section

SUBJECT: Evaluation of Permit Application No. **98-117-C (M-2)(PSD)**
Wynnewood Refining Company
Wynnewood, Garvin County, Oklahoma
906 S. Powell
Located Immediately South of Wynnewood on US-77

SECTION I. INTRODUCTION

Wynnewood Refining Company operates a petroleum refinery (SIC 2911) in south-central Oklahoma. The facility has applied for a permit to construct a new sulfur recovery unit and associated equipment for the purpose of producing low-sulfur fuels. The facility is currently operating under Permit No. 98-117-TV issued June 28, 2002.

The construction permit will authorize the following construction:

- An existing 10,000-bbl tank will be converted to storage for "sour water" (water contaminated with H_2S and ammonia). The tank will be operated with a diesel layer floating on the water to minimize H_2S and ammonia emissions.
- A new 1,000-bbl tank will be constructed to store molten sulfur.
- A new amine treater will be constructed to remove sulfur from the Hydrocracker.
- New 41.7 and 12.2 MMBTUH hot oil heaters will be constructed.
- A new 0.2 MMBTUH flare will be constructed to support the Hydrocracker Unit.
- A new sulfur pit will be constructed.
- New wastewater collection systems will be constructed for the new sulfur recovery unit.
- The existing Hydrocracker Cooling Tower (currently designated "P-CWT4") will be modified to increase its capacity but to reduce emissions.
- Molten sulfur loading racks will be constructed.
- Sulfur compounds will be processed in a new sulfur recovery unit. The unit will have a capacity of 50 LT/D and will have a tail gas incinerator rated at 7.55 MMBTUH.
- The existing hydrocracker will be modified to accommodate the increased usage.
- Several existing gas-fired reciprocating engines will be shut down to provide PSD netting credits.
- Three asphalt tank heaters will be switched from natural gas to refinery fuel gas.

The throughput of all units handling sulfur is limited by the design capacity of the new sulfur recovery unit, 50 LT/D. The density of molten sulfur is 125 lb/ft^3. At this density, the throughput of all sulfur storage and loading equipment will be 896 ft^3/day, or approximately 6,700 gallons.

SECTION II. FACILITY DESCRIPTION

The refinery converts crude oil into a variety of liquid fuels, solvents, asphalt and liquefied petroleum gases (LPG). Operations at the facility are divided into four categories: storage tanks, process units, utilities and auxiliaries, and blending and loading. The facility includes 20 process units for distillation and chemical reaction operations, 107 storage tanks, 40 combustion units, 4 additional combustion units operated for controlling air pollution emissions, product and raw material loading/unloading units, and auxiliary units for waste handling. The facility capacity is 54,000 barrels per day crude oil input. Crude oil arrives primarily by pipeline and also by truck and rail.

A. Process Units

There are 25 separate processing operations identified by the Wynnewood Refinery process flow diagram. These operations are identified as the No. 1 Crude Unit, No. 2 Crude Unit, Straight Run Stabilizer, Merox Unit, No. 1 Splitter, No. 2 Splitter, Naphtha Unifiner, Hydrogen Plant, Hysomer Unit, Crude Vacuum Unit, ROSE (Residual Oil Supercritical Extraction) Unit, CCR (Continuous Catalyst Regeneration) Platformer, Hydrocracker, Fluid Catalytic Cracking Unit, Platformer Depropanizer, Deisobutanizer, Olefins Treater, Propylene Splitter, Alkylation Unit, Fuel Gas Treater, Fuel Gas Drum, Asphalt Oxidizer, Asphalt Blending, Distillate Blending, and Gasoline Blending. The refinery also operates gasoline, distillate, asphalt, LPG (liquefied petroleum gas), NaSH (sodium hydrosulfide), solvent, and slurry loading facilities and steam and utility systems.

Crude oil processing begins at the No. 1 and No. 2 Crude Units. First, salt, water, and inorganic particles are separated from the crude oil, which is then distilled. In the distillation process, the crude is divided into several fractions depending on boiling point of the hydrocarbons present. Streams from the Crude Units include light hydrocarbons (methane, ethane, propane, butane) that become refinery fuel gas and liquefied petroleum gas (LPG), straight run gasoline, naphtha, distillate, and residual streams such as gas oil and reduced crude. The residual oil, referred to as "reduced crude," is first processed in the Crude Vacuum Unit where additional gas oil is distilled out at reduced pressures. The gas oil from the crude units and the vacuum unit become the primary feed to the Fluid Catalytic Cracking Unit (FCCU). As an intermediate step, some of the vacuum bottoms are processed for removal of asphaltenes/resins in the ROSE (Residual Oil Supercritical Extraction) Unit before proceeding to either the Asphalt Oxidizer or FCCU.

The FCCU heats residual hydrocarbons to 900-1,000^{o}F in the presence of a silica-based catalyst to convert the "gas oil" into lighter components. The large organic molecules break into smaller components. Most of these lighter components (about 60%) are recovered for gasoline blending. Other lighter components are recovered as reactants for other refinery processes, fuel gas, olefins, or LPG. Heavy oil off the bottom of the unit is sold as slurry oil. Some of the organic materials become "coke" on the surface of the catalyst that is regenerated by burning off the coke before re-circulating the catalyst back to the FCCU.

Some of the light naphtha is processed by the "CCR Platformer Unit." "CCR Platformer" is a shortened form of "continuous catalyst regeneration platinum-catalyzed reformer" which converts naphtha into aromatic components of gasoline such as benzene, ethyl benzene, toluene, and xylene.

Other gasoline blending components are prepared by combining smaller organic components in the LPG range into heavier components. Olefins separated from the processes (mostly as products of the FCCU) are reacted in the presence of hydrogen fluoride (HF) to form larger heptane and octane molecules.

Sulfur must be removed from sour refinery fuel gas, blending components, and reactants which will become blending components. WRC treats refinery fuel gas by controlled contact and chemical reaction with sodium hydroxide (NaOH). The product of the reaction (NaSH) is generally sold to the pulp and paper industry. Some distillates are processed by a "Merox" unit, in which high-strength sodium hydroxide reacts with mercaptans and converts them to disulfide oils which remain in the product. Light naphtha is treated in a "Unifiner" Unit. "Unifining" is equivalent to hydrodesulfurization, where hydrogen gas is used to react with hydrocarbons, breaking off sulfur as hydrogen sulfide and lesser amounts of other Total Reduced Sulfur (TRS) compounds such as methyl sulfide. Hydrotreating also converts larger olefins into aliphatic hydrocarbons and naphthas which are not prone to form gummy resins during storage. An amine unit is used to further reduce the H_2S content of some of the fuel gas. The H_2S-containing gas from the amine unit is burned in the Aklylation Unit's depropanizer reboiler (Heater 5H1, a "grandfathered" unit).

Hydrotreating requires large amounts of hydrogen gas to be created. Most of the hydrogen is created by "steam reforming." Here, steam is mixed with hydrocarbons such as methane in a reaction such as $CH_4 + H_2O \rightarrow H_2 + CO_2$. The Platformer Unit also creates a large amount of hydrogen gas. Unreacted hydrogen gas is vented from other units into the Refinery Fuel Gas system.

In addition, this refinery includes a "Hysomer Unit." This unit is commonly referred to as an "Isomerization Unit," which changes the molecular structure of organic compounds into ones more favorable to gasoline blending. This refinery also operates a hydrocracker. Similar to the FCCU, this unit cracks larger molecules into ones in the size range for gasoline blending.

For compliance purposes, the facility has reorganized the 25 process units into 10 process unit areas that also include associated tankage. This is allowed by 40 CFR Part 63, Subpart CC.

B. Storage Tanks

There are 107 storage tanks at the refinery. Of these, 27 are pressure vessels operated with only fugitive emissions. The other 80 are operated at atmospheric pressure. Most of the tanks store organic liquids, but hydrogen fluoride (HF) and hydrogen chloride (HCl) are also stored.

There are several rules and regulations affecting storage tanks, depending on liquid stored, capacity, vapor pressure, hazardous air pollutant (HAP) concentrations, and date of construction/reconstruction. The tanks' designs are internal floating roof, external floating roof, vertical cone roof, and horizontal.

These tanks include raw material storage, product storage, and storage for intermediates. Having intermediate storage allows various process units to keep operating when upstream or downstream units are down or operating at reduced capacity. The presence of intermediate storage allows for delineation between process units as necessitated by NSPS Subpart GGG and 40 CFR Part 63, Subpart CC.

C. Utility Operations

Utility operations provide fuel and steam to heat various operations, and allow for discharge of waste.

Refinery fuel gas is a blend of natural gas, non-condensable gases, gases from relief valve discharge, unit purges, and a variety of process unit off-gases. A wide spectrum of gases generated in the refinery which are combustible become refinery fuel gas. These gases are combined in a single fuel mix drum for supply to all units within the refinery. Ideally, the refinery would generate the same amount of fuel gas as is needed, but in reality, fluctuations result in purchasing natural gas and in flaring excess fuel gas. The fuel gas averaged 764 BTU/SCF heating value in 1999.

The mix drum blends three streams, "sweet" gases from the platformer, "sour" gases from other units, and pipeline-grade natural gas. Sour fuel gas is contacted with sodium hydroxide to remove sulfur compounds as liquid sodium hydrosulfide. Gas from this unit will have 200-500 ppm H_2S, which cannot be burned in a unit subject to NSPS Subpart J unless its sulfur content is reduced to 160 ppm. The fuel gas stream is split into two portions, with one going to a diethanolamine (DEA) contactor for sulfur removal, while the other goes to a glycol dehydration unit.

There are three boilers at the facility. These boilers are designated Boiler #4, Boiler #5, and Wickes Steam Boiler 1-B-8. The Wickes Boiler was converted from being the FCCU waste heat recovery boiler to being a dual-fueled boiler in 1979. It is now fueled exclusively by fuel gas.

Three flares are present at the facility. The South Flare burns releases from relief systems and vents in the Crude Units, Crude Vacuum Units, Hydrocracker Unit, Hysomer Unit, No. 1 Naphtha Splitter, No. 2 Naphtha Splitter, Merox treater, ROSE Unit, RFG Unit, and miscellaneous units located at the south end of the facility. There are two North Flares, the new ("Peabody") flare installed in 1991 and a back-up flare. These flares burn releases from the Naphtha Unifiner Unit, CCR Platformer, FCCU, Deisobutanizer Unit, Plat Depropanizer Unit, Alkylation Unit, LPG loading rack, and pressure tanks for propane, butane, and olefins. The new flare is designed to process 150,000 lb/hr. Excess pressure diverts additional hydrocarbons to the back-up flare.

Wastewater is collected throughout the refinery. The most significant source is the crude oil desalters, where oily water is separated from crude oil. Various units generate additional wastewater with varying degrees of oil content. The refinery segregates stormwater that falls outside the process areas into a separate wastewater system that discharges through a permitted stormwater outfall. Stormwater that falls in process areas is not collected in separate sewers, but some units do preliminary oil-water separation prior to discharging into integrated sewers. There is an initial oil-water separator adjacent to the Crude Desalter and another one adjacent to the Crude Unit, Hydrocracker, and Platformer. Oily water proceeds to an API separator, then to an Activated Sludge unit. Sludge is periodically collected and dewatered for shipment off-site, while water continues to clarifiers and lagoons, and eventually to the Washita River.

Those wastewater handling units that are subject to NSPS Subpart QQQ are grouped as Emission Unit Group No. 57.

D. Blending and Product Loading Operations

Equipment is present for shipping or receiving several hydrocarbon products: LPG, gas oil, asphalt, propylene, isobutane, n-butane, gasoline, jet fuel (JP-8), and diesel. LPG, gas oil, propylene, and butanes are both bought and sold by the refinery, depending on market conditions, short-terms excesses, etc. Sodium hydrosulfide is also loaded as an aqueous solution and slurry.

Gasoline blending is done on a batch basis using large tanks. The several components are metered into the tanks. The tanks perform dual roles, both as process equipment and storage equipment.

Gasoline products are sold by either pipeline or truck. The truck loading rack is equipped with a vapor recovery unit to recover the hydrocarbon vapors displaced out of the mobile tanks loaded.

SECTION III. EQUIPMENT

Equipment which will be constructed or modified is listed in the following tables:

EUG 17 – Internal Floating Roof Tank (Sour Water With Diesel "Blanket"), Not Subject to 40 CFR Part 63 Subpart CC (Group 2 Storage Vessels)

EU	Point	Normal Contents	Capacity	Installation/ <Modification Date
P-T301	P-T301	Sour water / diesel	10,000-bbl.	1992

T-301 has been storing caustic from construction.

EUG 18 – Cone Roof Tank for Molten Sulfur

EU	Point	Normal Contents	Capacity	Installed Date
P-T302	P-T302	Sulfur	1,000-bbl.	2006

EUG 30 - Fugitive Emissions Subject to Monitoring Requirements (MACT, Consent Order, and/or NSPS Subpart GGG)

EU	Point	Equipment	Estimated Number of Items	Modified Date
EU-3725A	EU-3725A	VOC Leakage at Hydrocracker	123 gas valves	2006
			459 light liquid valves	
			495 heavy liquid valves	
			1,152 flanges	
			2 light liquid pumps	
			13 heavy liquid pumps	
			11 gas relief valves	
			20 compressor seals	

EUG 35 - Fugitive Emissions Subject to Monitoring Requirements (40 CFR Part 63 Subpart CC and NSPS Subpart GGG) – New Amine Treating Unit, Sour Water Stripper, Sulfur Recovery Unit, and Tail Gas Treating Unit

EU	Point	Equipment	Estimated Number of Items	Installed Date
EU-3740C	EU-3740C	VOC Leakage at New Amine Treating Unit, Sour Water Stripper, Sulfur Recovery Unit, and Tail Gas Treating Unit	156 gas valves	2006
			14 light liquid valves	
			294 heavy liquid valves	
			1,343 flanges	
			3 light liquid pumps	
			14 heavy liquid pumps	

EUG 40: Grandfathered Fuel Gas Combustion Devices

EU	Point	Equipment	MMBTUH	Installed Date
P-JH101	P-JH101	Hydrocracker fractionator reboiler	36.8	1965
P-SB#4	P-SB#4	Steam boiler No. 4	72	1958
P-SB#5	P-SB#5	Steam boiler No. 5	72	1953

A limitation on fuel sulfur will be established for these units for netting purposes. This will include removing sour water stripper off-gas feed to these combustion units. Only SO_2 emissions are affected, and SO_2 emissions will decrease.

EUG 41: Fuel Gas Combustion Devices Subject to Oklahoma Rules but Not NSPS

EU	Point	Equipment	MMBTUH	Installed Date
P-1B8	P-1B8	Wickes steam boiler	126	1965 (modified 1979)

A limitation on fuel sulfur will be established for this unit for netting purposes.

EUG 42 – Fuel Gas Combustion Devices Subject to NSPS Subpart J

EU	Point	Equipment	MMBTUH	Installed Date
P-HT134	P-HT134	Tank 134 heater	8.4	1991
P-HT136	P-HT136	Tank 136 heater	8.4	1991
P-HT264	P-HT264	Tank 264 heater	1	1996

Current emissions limitations for the above units are based on burning natural gas. The operator will be authorized to use refinery fuel gas in these units following issuance of this permit.

EUG 44 – Fuel Gas Combustion Devices Subject to NSPS Subpart J

EU	Point	Equipment	MMBTUH	Installed Date
P-H501	P-H501	SRU Hot Oil Heater	41.7	2006
P-H502	P-H502	SRU Hot Oil Heater	12.2	2006

EUG 48 – New Hydrocracker Flare Subject to NSPS Subpart J

EU	Point	Equipment	Installed Date
P-FS1503	P-FS1503	0.2 MMBTUH Hydrocracker Flare	2006

EUG 54 – Molten Sulfur Pit

EU	Point	Normal Contents	Capacity	Installed Date
P-SP301	P-SP301	Sulfur	--	2006

EUG 60 – New SRU Wastewater Systems Subject to NSPS Subpart QQQ and 40 CFR Part 63 Subpart CC

EU	Point	Equipment	Installed Date
EU-WW3	ES-WW3	25 P-trap drains	2006
		2 Junction boxes	2006

EUG 67 – Hydrocracker Cooling Tower

EU	Point	Equipment	Modified Date
P-CWT4	P-CWT4	Hydrocracker cooling tower	2006

EUG 70 – Grandfathered Reciprocating Gas-fueled Engines

EU	Point	Make	Service	HP	Serial #	Installed Date
P-3C1	P-3C1	Clark	FCCU	440	19878	1954
P-3C2	P-3C2	Clark	FCCU	440	19877	1954
P-HC1A	P-HC1A	Clark	Hysomer	330	6BJ516	1958
P-HC1B	P-HC1B	Clark	Hysomer	330	6BJ517	1958
P-3C101	P-3C101	Clark	FCCU	660	B-21006	1954
P-PC1A	P-PC1A	Clark	Platformer	550	22744	1958
P-PC1B	P-PC1B	Clark	Platformer	550	22745	1958
P-PC1C	P-PC1C	Clark	Platformer	550	22746	1958

EUG 82 – Molten Sulfur Loading Racks

EU	Point	Equipment	Installed Date
P-SLRR	P-SLRR	Sulfur railcar loading rack	2006
P-SLRT	P-SLRT	Sulfur truck loading rack	2006

EUG 87 – SRU Tail Gas Incinerator Subject to NSPS Subpart J and 40 CFR Part 63 Subpart UUU

EU	Point	Equipment	MMBTUH	Installed Date
P-TGIS1	P-TGIS1	SRU Tail Gas Incinerator	7.55	2006

SECTION IV. EMISSIONS

The facility operates up to 8,760 hours per year. Emissions were calculated using the following factors which were taken from the references as shown:

Unit ID	Processes	Emission Factors	Factor Reference
P-T1301	Sour Water Tank	TANKS4.09, 0.5 psia, 56,560,000 bbl throughput	TANKS4.09
P-T1302	Sulfur Tank	H_2S: 4,000 ppm, 50 LT/D (898 ft^3/day displacement)	engineering estimate plus 100% safety factor
EU-3725C	Hydrocracker Fugitive VOC Leakage	gas valves: 0.0177 lb/hr/pt, 98.2% control for LDAR	"Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017), Table 2-2
		lt liq valves: 0.024 lb/hr/pt, 84.3% control for LDAR	
		hvy liq valves: 0.0005 lb/hr/pt, 0% control for LDAR	
		flanges: 0.00056 lb/hr/pt, 76.4% control for LDAR	
		lt liq pumps: 0.25 lb/hr/pt, 89.4% control for LDAR	
		hvy liq pumps: 0.046 lb/hr/pt, 35.3% control for LDAR	
		gas relief valves: 0.0177 lb/hr/pt, 98.2% control for LDAR	
		compressor seals: 1.40 lb/hr/pt, 85.8% control for LDAR	
EU-3740C	VOC Leakage at New Amine Treating Unit, Sour Water Stripper, Sulfur Recovery Unit, and Tail Gas Treating Unit	gas valves: 0.0177 lb/hr/pt, 98.2% control for LDAR	"Protocol for Equipment Leak Emission Estimates" (EPA-453/R-95-017), Table 2-2
		lt liq valves: 0.024 lb/hr/pt, 84.3% control for LDAR	
		hvy liq valves: 0.0005 lb/hr/pt, 0% control for LDAR	
		flanges: 0.00056 lb/hr/pt, 76.4% control for LDAR	
		lt liq pumps: 0.25 lb/hr/pt, 89.4% control for LDAR	
		hvy liq pumps: 0.046 lb/hr/pt, 35.3% control for LDAR	

Unit ID	Processes	Emission Factors	Factor Reference
P-H501	SRU Hot Oil Heater (41.7 MMBTUH)	SO_2: 160 ppm in fuel, 800 BTU/SCF	NSPS Subpart J limit
		NOx: 0.15 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
		CO: 0.126 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
		VOC: 0.00825 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
		PM: 0.0114 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
P-H502	SRU Hot Oil Heater (12.2 MMBTUH)	SO_2: 160 ppm in fuel, 800 BTU/SCF	NSPS Subpart J limit
		NOx: 0.15 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
		CO: 0.126 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
		VOC: 0.00825 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
		PM: 0.0114 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
P-FS1503	Hydrocracker Flare (0.2 MMBTUH)	SO_2: 160 ppm in fuel, 800 BTU/SCF	NSPS Subpart J limit
		NOx: 0.068 lb/MMBTU	AP-42 (1/95), Sect. 13.5
		CO: 0.37 lb/MMBTU	AP-42 (1/95), Sect. 13.5
		VOC: 0.14 lb/MMBTU	AP-42 (1/95), Sect. 13.5
		PM: 0.0076 lb/MMBTU	AP-42 (7/00), Sect. 1.4
P-SP301	Molten Sulfur Pit	H_2S: 4,000 ppm, 50 LT/D (898 ft^3/day displacement)	engineering estimate plus 100% safety factor
EU-WW3	Wastewater collection at New SRU	P-leg traps: 0.035 lb/hr/unit VOC	Background Information Document (BID) for NSPS Subpart QQQ
		jct boxes: 0.7 lb/hr/unit VOC	
P-CWT4	Hydrocracker Cooling Tower	VOC: 0.7 lb/MMGal	AP-42 (1/95) Sec. 5.1
		PM: 0.005% drift, 1,100 ppm TDS, 50% of PM is PM_{10}	Mass balance
P-SLRR P-SLRT	Molten Sulfur Loading Racks	H_2S: 4,000 ppm, 50 LT/D (898 ft^3/day displacement)	engineering estimate plus 100% safety factor

Unit ID	Processes	Emission Factors	Factor Reference
P-TGIS1	SRU Tail Gas Incinerator (7.55 MMBTUH tail gas incinerator plus 4.15 MMBTUH process combustion)	SO_2: 250 ppm SO_2	NSPS Subpart J limit
		NOx: 0.15 lb/MMBTU	AP-42 (7/00), Sect. 1.4 + 50% safety factor
		CO: 300 ppm	manufacture guarantee
		VOC: 0.00825 lb/MMBTU	AP-42 (7/00), Sect. 1.4+ 50% safety factor
		PM: 0.0114 lb/MMBTU	AP-42 (7/00), Sect. 1.4+ 50% safety factor

EUG 17 – Internal Floating Roof Tank (Sour Water With Diesel Blanket), Not Subject to 40 CFR Part 63 Subpart CC (Group 2 Storage Vessels)

EU	Point	Normal Contents	VOC	
			lb/hr	TPY
P-T301	P-T301	Diesel / Sour Water	0.05	0.20

EUG 18 – Cone Roof Tank for Molten Sulfur

EU	Point	Normal Contents	H_2S	
			lb/hr	TPY
P-T302	P-T302	Sulfur	0.014	0.06

EUG 30 - Fugitive Emissions Subject to Monitoring Requirements (40 CFR Part 63 Subpart CC, Consent Order and/or NSPS Subpart GGG)

EU	Description	Equipment	Number of Items	Emission Factor, lb/hr/source	Control Eff.	VOC	
						lb/hr	TPY
EU-3725A	VOC Leakage at Hydrocracker	gas valves	123	0.0177	98.2%	0.065	0.286
		lt liquid valves	459	0.024	84.3%	1.730	7.575
		hvy liq valves	495	0.0005	0%	0.248	1.084
		flanges	1152	0.00056	76.4%	0.152	0.667
		lt liq pumps	2	0.25	89.4%	0.053	0.232
		hvy liq pumps	13	0.046	35.3%	0.387	1.695
		gas relief valves	11	0.0177	98.2%	0.543	2.376
		compr. seals	20	1.400 *	85.8%	1.97	8.65
SUBTOTALS						**5.151**	**22.561**

* since the stream is expected to be at least 50% hydrogen, emissions have been reduced by 50%.

EUG 35 - Fugitive Emissions Subject to Monitoring Requirements (40 CFR Part 63 Subpart CC and/or NSPS Subpart GGG)

EU	Description	Equipment	Number of Items	Emission Factor, lb/hr/source	Control Eff.	VOC	
						lb/hr	TPY
EU-3740C	VOC Leakage at New Amine Treating Unit, Sour Water Stripper, Sulfur Recovery Unit, and Tail Gas Treating Unit	gas valves	156	0.0177	98.2%	0.017	0.073
		lt liquid valves	14	0.024	84.3%	0.053	0.231
		hvy liq valves	294	0.0005	0%	0.147	0.644
		flanges	1343	0.00056	76.4%	0.177	0.777
		lt liq pumps	3	0.25	89.4%	0.080	0.348
		hvy liq pumps	14	0.046	35.3%	0.417	1.825
SUBTOTALS						**0.890**	**3.898**

EUG 42 – Fuel Gas Combustion Devices Subject to NSPS Subpart J

EU	Point	Equipment	SO_2	
			lb/hr	TPY
P-HT134	P-HT134	Tank 134 heater	0.28	1.23
P-HT136	P-HT136	Tank 136 heater	0.28	1.23
P-HT264	P-HT264	Tank 264 heater	0.03	0.15
SUBTOTALS			**0.59**	**2.61**

EUG 44 - Fuel Gas Combustion Device, Subject to NSPS Subpart J

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
P-H501	SRU Hot Oil Heater	0.46	2.04	1.40	6.12	6.14	26.92	0.34	1.48	5.16	22.61
P-H502	SRU Hot Oil Heater	0.13	0.55	0.37	1.64	1.66	7.27	0.09	0.40	1.39	6.11
SUBTOTALS		**0.59**	**2.59**	**1.77**	**7.76**	**7.80**	**34.19**	**0.43**	**1.88**	**6.55**	**28.72**

EUG 48 - New Hydrocracker Flare, Subject to NSPS Subpart J

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
P-FS1503	Hydrocracker Flare	0.01	0.01	0.01	0.01	0.02	0.09	0.03	0.13	0.07	0.32

EUG 54 – Molten Sulfur Pit

EU	Point	Normal Contents	H_2S	
			lb/hr	TPY
P-SP301	P-SP301	Sulfur	0.014	0.06

EUG 60 – New SRU Wastewater Systems Subject to NSPS Subpart QQQ and 40 CFR Part 63 SubpartCC

EU	Point	Equipment	VOC	
			lb/hr	TPY
EU-WW3	EU-WW3	P-trap Drains	0.88	3.83
		Junction Boxes	0.14	0.61
TOTALS			**1.02**	**4.44**

EUG 67 – Hydrocracker Cooling Tower

EU	Point	Equipment	VOC		PM	
			lb/hr	TPY	lb/hr	TPY
P-CWT4	P-CWT4	Hydrocracker Cooling Tower	0.26	1.10	0.08	0.36

EUG 82 – Molten Sulfur Loading Racks

EU	Point	Equipment	H_2S	
			lb/hr	TPY
P-SLRR	P-SLRR	Sulfur railcar loading rack	0.014	0.06
P-SLRT	P-SLRT	Sulfur truck loading rack		
TOTALS			0.014	0.06

EUG 87 - SRU Tail Gas Incinerator Subject to NSPS Subpart J and 40 CFR Part 63 Subpart UUU

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
P-TGIS1	Sulfur Recovery Unit	0.22	1.00	18.90	82.77	3.01	13.20	0.17	0.73	7.14	31.27

TOTAL EMISSIONS FROM NEW/MODIFIED UNITS

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
P-T301	Sour Water Tank	--	--	--	--	--	--	0.05	0.20	--	--
P-T302	Sulfur Tank	--	--	--	--	--	--	--	--	--	--
EU-3725A	Hydrocracker	--	--	--	--	--	--	5.15	22.56	--	--
EU-3740A	Amine Treater, SWS, SRU	--	--	--	--	--	--	0.89	3.90	--	--
P-H501	SRU Hot Oil Heater	0.46	2.04	1.40	6.12	6.14	26.92	0.34	1.48	5.16	22.61
P-H502	SRU Hot Oil Heater	0.13	0.55	0.37	1.64	1.66	7.27	0.09	0.40	1.39	6.11
P-FS1503	Hydrocracker Flare	0.01	0.01	0.01	0.01	0.02	0.09	0.03	0.13	0.07	0.32
P-SP301	Sulfur Pit	--	--	--	--	--	--	--	--	--	--
EU-WW3	SRU Wastewater Systems	--	--	--	--	--	--	1.02	4.44	--	--
P-CWT4	Hydrocracker Cooling Twr	0.08	0.36	--	--	--	--	0.26	1.10	--	--
P-SLRR	Sulfur Railcar Rack	--	--	--	--	--	--	--	--	--	--
P-SLRT	Sulfur Truck Rack	--	--	--	--	--	--	--	--	--	--
P-TGIS1	SRU Tail Gas Incinerator	0.22	1.00	18.90	82.77	3.01	13.20	0.17	0.73	7.14	31.27
P-HT134	Tank 134 Heater	--	--	0.28	1.23	--	--	--	--	--	--
P-HT136	Tank 136 Heater	--	--	0.28	1.23	--	--	--	--	--	--
P-HT264	Tank 264 Heater	--	--	0.03	0.15	--	--	--	--	--	--
TOTALS		**0.90**	**3.96**	**21.27**	**93.15**	**10.83**	**47.48**	**8.00**	**34.94**	**13.76**	**60.31**

In addition to added emissions from new units, there will be associated emissions increases from increased utilization of existing equipment, some of which is "grandfathered." Per EPA guidance, associated emissions increases from these units have been calculated as the difference between potential emissions and the two-year average (2002-2003) actual emissions. This table also includes added emissions from installation of the Polymer Modified Asphalt Unit, a creditable contemporaneous change. All actual emissions were taken from the facility's 2002 and 2003 Annual Emissions Inventories.

ACTUAL EMISSIONS CHANGES FROM EXISTING EMISSIONS UNITS

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		TPY Actual	TPY Pot.	TPY Actual	TPY Pot.	TPY Actual	TPY Pot.	TPY Actual	TPY Pot.	TPY Actual	TPY Pot.
P-1B8	Wickes Steam Boiler	2.33	3.70	47.12	95.06	60.12	99.36	1.69	2.68	25.76	40.91
P-H1331	PMA Unit Heater	0.06	0.28	0.01	0.02	0.84	3.68	0.05	0.20	0.71	3.09
P-JH1	Hydrocracker Reactor Htr	0.20	0.61	1.26	7.65	2.55	8.06	0.14	0.44	2.14	6.77
P-JH2	Hydrocracker Reactor Htr	0.36	0.61	2.06	7.65	4.72	8.06	0.26	0.44	3.96	6.77
P-JH101	Hydrocracker Fractionator	1.08	1.22	319.3	319.3	14.20	16.12	0.78	0.89	11.92	13.54
P-HT134	Tank 134 Heater	--	--	0.02	1.23	--	--	--	--	--	--
P-HT136	Tank 136 Heater	--	--	0.02	1.23	--	--	--	--	--	--
P-HT264	Tank 264 Heater	--	--	0.01	0.15	--	--	--	--	--	--
P-H960	Glycol Dryer	0.04	0.04	0.00	0.15	0.49	0.59	0.03	0.03	0.41	0.49
P-SB#4	Steam Boiler No. 4	--	--	29.54	29.91	--	--	--	--	--	--
P-SB#5	Steam Boiler No. 5	--	--	29.63	29.91	--	--	--	--	--	--
TOTALS		**4.07**	**6.46**	**429.0**	**492.2**	**82.92**	**135.87**	**2.91**	**4.68**	**44.90**	**71.57**

EMISSIONS CHANGES COMPARED TO PSD LEVELS OF SIGNIFICANCE

Pollutant	Direct Emissions Increases TPY	Associated Emissions Increases TPY	Total Emissions Increases TPY	PSD Level of Significance TPY	PSD Review Required?
PM_{10}	5.62	2.39	8.01	15	no
SO_2	93.15	63.23	156.38	40	yes
NOx	47.48	52.95	100.43	40	yes
VOC	34.94	4.68	39.62	40	no
CO	60.31	26.67	86.98	100	no
H_2S	0.18	--	0.18	10	no

Since added emissions of NOx and SO_2 are above PSD levels of significance, PSD netting is required. The facility has committed to shutting down several reciprocating engines and other equipment to obtain emissions reductions credits for netting. The fuel for the Wickes Steam Boiler (EUG-41) and the Hydrocracker Reboiler, P-JH101 (EUG-40) will be changed to sweetened fuel gas, providing SO_2 emissions reductions credits.

PSD NETTING

Emission Unit	Description	Potential Emissions TPY		Actual Emissions TPY		Net Emissions Changes TPY	
		NOx	SO_2	NOx	SO_2	NOx	SO_2
P-T301	Sour Water Tank	--	--	--	--	--	--
P-T302	Sulfur Tank	--	--	--	--	--	--
EU-3725A	Hydrocracker	--	--	--	--	--	--
EU-3740C	Amine Treater, SWS, SRU	--	--	--	--	--	--
P-H501	SRU Hot Oil Heater	26.92	6.12	--	--	6.92	6.12
P-H502	SRU Hot Oil Heater	7.27	1.64	--	--	7.27	1.64
P-FS1403	Hydrocracker Flare	0.09	0.01	--	--	0.09	0.01
P-SP301	Sulfur Pit	--	--	--	--	--	--
EU-WW3	SRU Wastewater Systems	--	--	--	--	--	--
P-CWT4	Hydrocracker Cooling Twr	--	--	--	--	--	--
P-SLRR	Sulfur Railcar Rack	--	--	--	--	--	--
P-SLRT	Sulfur Truck Rack	--	--	--	--	--	--
P-TGIS1	SRU Tail Gas Incinerator	13.2	82.77	--	--	13.20	82.77
P-JH1	Hydrocracker Heater	7.90	7.65	4.73	2.06	3.17	5.59
P-JH2	Hydrocracker Heater	7.90	7.65	4.72	2.06	3.18	5.59
P-JH101	Hydrocracker Reboiler	15.80	15.29	14.20	319.36	1.60	-304.07
P-12B8	Wickes Boiler	99.36	47.12	60.12	14.88	39.24	32.24
P-H960	Glycol Dryer	0	0	0.49	0.01	-0.49	-0.01

Emission Unit	Description	Potential Emissions TPY		Actual Emissions TPY		Net Emissions Changes TPY	
		NOx	SO_2	NOx	SO_2	NOx	SO_2
P-VENT8	Fuel Gas Dryer Vent	0	0	0	0	0	0
P-HC1A	330-hp Clark	0	0	23.96	0.01	-23.96	-0.01
P-HC1B	330-hp Clark	0	0	23.96	0.01	-23.96	-0.01
P-PC1A	550-hp Clark	0	0	61.09	0.01	-61.09	-0.01
P-PC1B	550-hp Clark	0	0	61.09	0.01	-61.09	-0.01
P-PC1C	550-hp Clark	0	0	61.09	0.01	-61.09	-0.01
P-LR7T	NaSH Truck Loading Rack	0	0	0	0	0	0
P-LR7R	NaSH Rail Loading Rack	0	0	0	0	0	0
P-HT134	Tank 134 Heater	--	1.23	--	0.02	--	1.21
P-HT136	Tank 136 Heater	--	1.23	--	0.02	--	1.21
P-HT264	Tank 264 Heater	--	0.15	--	0.01	--	0.14
P-SB#4	Steam Boiler No. 4	--	29.91	--	29.54	--	0.37
P-SB#5	Steam Boiler No. 5	--	29.91	--	29.63	--	0.28
P-H1331		3.61	0.02	2.40	0.01	1.21	0.01
TOTALS						**-155.80**	**-166.95**

There is a net emissions reduction in all pollutants whose added emissions exceeded PSD significance levels. It should be noted that no credit was taken for SO_2 emissions reductions from steam boilers SB-4 and SB-5 in the above netting since those reductions were needed to meet the ambient impacts limits of OAC 252:100-31-26(b).

The primary discharge points for new air emissions at the facility are tabulated following.

SIGNIFICANT DISCHARGE POINTS

Point ID	Description	Height Feet	Diameter Inches	Flow Rate ACFM	Temp. ºF
P-H501	SRU Hot Oil Heater	50	36	13,000	550
P-TGIS1	SRU Tail Gas Incinerator	150	24	13,200	1,000

SECTION V. AIR QUALITY IMPACTS ANALYSIS

The facility is subject to the ambient impacts limitations of OAC 252:100-31 for SO_2 and H_2S. The refined air quality modeling analyses employed USEPA's ISC-Prime (Industrial Source Complex – Plume Rise Model Enhancements) model. The ISC3-Prime model is recommended as a guideline model for assessing the impact of aerodynamic downwash. The regulatory default option was selected such that USEPA guideline requirements were met.

The stack height regulations promulgated by USEPA on July 8, 1985 (50 CFR 27892), established a stack height limitation to assure that stack height increases and other plume dispersion techniques would not be used in lieu of constant emission controls. The regulations specify that Good Engineering Practice (GEP) stack height is the maximum creditable stack height which a source may use in establishing its applicable State Implementation Plan (SIP) emission limitation. For stacks uninfluenced by terrain features, the determination of a GEP stack height for a source is based on the following empirical equation:

$$H_g = H + 1.5L_b$$

where:

H_g = GEP stack height;

H = Height of the controlling structure on which the source is located, or nearby structure; and

L_b = Lesser dimension (height or width) of the controlling structure on which the source is located, or nearby structure.

Both the height and width of the structure are determined from the frontal area of the structure projected onto a plane perpendicular to the direction of the wind. The area in which a nearby structure can have a significant influence on a source is limited to five times the lesser dimension (height or width) of that structure, or within 0.5 mile (0.8 km) of the source, whichever is less. The methods for determining GEP stack height for various building configurations have been described in USEPA's technical support document (USEPA, 1985).

Since downwash is a function of projected building width and height, it is necessary to account for the changes in building projection as they relate to changes in wind direction. Once these projected dimensions are determined, they can be used as input to the ISC3-Prime model.

In October 1993, USEPA released the Building Profile Input Program (BPIP) to determine wind direction-dependent building dimensions. The BPIP algorithms as described in the User's Guide (USEPA, 1993), have been incorporated into the commercially available BPIP View program.

The BPIP program builds a mathematical representation of each building to determine projected building dimensions and its potential zone of influence. These calculations are performed for 36 different wind directions (at 10 degree intervals). If the BPIP program determines that a source is under the influence of several potential building wakes, the structure or combination of structures that has the greatest influence ($H + 1.5 L_b$) is selected for input to the ISCST3 model. Conversely, if no building wake effects are predicted to occur for a source for a particular wind direction, or if the worst-case building dimensions for that direction yield a wake region height less than the source's physical stack height, building parameters are set equal to zero for that wind direction. For this case, wake effect algorithms are not exercised when the model is run. The building wake criteria influence zone is 5 L_b downwind, 2 L_b upwind, and 0.5 L_b crosswind. These criteria are based on recommendations by USEPA. The input to the BPIP preprocessing program consisted of proposed exhaust stacks and building dimensions.

Due to the relatively high stack heights and the relatively small size of the dominant structures, the building cavity effects that were considered in the modeling analysis were minimal for the new stacks. For this analysis, the first step was to determine the building cavity height based on the formula:

$$h_c = H + 0.5L_b$$

where:

- h_c = GEP stack height;
- H = Height of the controlling structure on which the source is located, or nearby structure; and
- L_b = Lesser dimension (height or width) of the controlling structure on which the source is located, or nearby structure.

If the stack height was greater than or equal to the cavity height, the cavity effect would not affect the downwind maximum impacts. However, if a cavity effect was possible, the length of the cavity was compared to the distance to the nearest receptor.

The meteorological data used in the dispersion modeling analyses consisted of five years (1986, 1987, 1988, 1990, and 1991) of hourly surface observations from the Oklahoma City National Weather Service Station and coincident mixing heights from Oklahoma City (1986-1988) and Norman, Oklahoma (1990 and 1991). Surface observations consist of hourly measurements of wind direction, wind speed, temperature, and estimates of ceiling height and cloud cover. The upper air station provides a daily morning and afternoon mixing height value as determined from the twice-daily radiosonde measurements. Based on NWS records, the anemometer height at the OKC station during this period was 6.1 meters.

Prior to use in the modeling analysis, the meteorological data sets were downloaded from the USEPA Support Center for Regulatory Air Models (SCRAM) website. This data was scanned for missing data, but no missing data were found. USEPA used the procedures outlined in the USEPA document, "Procedures for Substituting Values for Missing NWS Meteorological Data for Use in Regulatory Air Quality Models," to fill gaps of information for single missing days. For larger periods of two or more missing days, seasonal averages were used to fill in the missing periods. The USEPA developed rural and urban interpolation methods to account for the effects of the surrounding area on development of the mixing layer boundary. The rural scheme was used to determine hourly mixing heights representative of the area in the vicinity of the refinery.

The urban/rural classification is used to determine which dispersion parameter to use in the model. Determination of the applicability of urban or rural dispersion is based upon land use or population density. For the land use method the source is circumscribed by a three kilometer radius circle, and uses within that radius analyzed to determine whether heavy and light industrial, commercial, and common and compact residential, comprise greater than 50 percent of the defined area. If so, then urban dispersion coefficients should be used. The land use in the area of the proposed facility is comprised of less than 50 percent of the above land use types, for which rural dispersion coefficients are appropriate.

The refined modeling used a nested Cartesian grid. Receptors were placed on a 100-meter grid of receptors extended from the property lines out to 1 kilometer; and 500-meter spacing from 1 km to 5 km. All receptors were modeled with actual terrain based on the proposed plant location. The terrain data was taken from United States Geologic Society (USGS) 7.5-minute Digital Elevation Model Files.

The modeling results are shown on the following page.

Ambient Impacts

Averaging Period	**Ambient Impacts Limits ($\mu g/m^3$)**		**Modeled Impacts ($\mu g/m^3$)**	
	SO_2	**H_2S**	**SO_2**	**H_2S**
1-hour	1,200	--	344	--
3-hour	650	--	219	--
24-hour	130	280	127	9
Annual	80	--	30	--

SECTION VI. OKLAHOMA AIR POLLUTION CONTROL RULES

OAC 252:100-1 (General Provisions) [Applicable]
Subchapter 1 includes definitions but there are no regulatory requirements.

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 252:100-4 (New Source Performance Standards) [Applicable]
Federal regulations in 40 CFR Part 60 are incorporated by reference as they exist on July 1, 2002, except for the following: Subpart A (Sections 60.4, 60.9, 60.10, and 60.16), Subpart B, Subpart C, Subpart Ca, Subpart Cb, Subpart Cc, Subpart Cd, Subpart Ce, Subpart AAA, and Appendix G. NSPS regulations are addressed in the "Federal Regulations" section.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Operating Fees) [Applicable]
The owner or operator of any facility that is a source of air emissions shall submit a complete emission inventory annually on forms obtained from the Air Quality Division. An emission inventory was submitted and fees paid for previous years as required.

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 hazardous air pollutant (HAP) or 5 TPY of multiple HAPs or 20% of any threshold less than 10 TPY for single HAP that the EPA may establish by rule
- 0.6 TPY of any one Category A toxic substance
- 1.2 TPY of any one Category B toxic substance
- 6.0 TPY of any one Category C toxic substance

Emission limitations have been established from the current permit application.

OAC 252:100-9 (Excess Emission Reporting Requirements) [Applicable]
In the event of any release which results in excess emissions, the owner or operator of such facility shall notify the Air Quality Division as soon as the owner or operator of the facility has knowledge of such emissions, but no later than 4:30 p.m. the next working day. Within ten (10) working days after the immediate notice is given, the owner or operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. Part 70/Title V sources must report any exceedance that poses an imminent and substantial danger to public health, safety, or the environment as soon as is practicable. Under no circumstances shall notification be more than 24 hours after the exceedance.

OAC 252:100-13 (Prohibition of 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 (Particulate Matter) [Applicable]
This subchapter specifies limits for fuel-burning equipment particulate emissions based on heat input capacity. The following table compares limitations to calculated emissions. All units are in compliance with Subchapter 19.

COMPARISON OF PM EMISSIONS TO LIMITATIONS OF OAC 252:100-19

Unit	Heat Input Capacity, MMBTUH	PM Emission Limitation of OAC 252:100-19, lb/MMBTU	Anticipated PM Emission Rate, lb/MMBTU
SRU Hot Oil Heater	41.7	0.42	0.114
SRU Hot Oil Heater	12.2	0.59	0.114
SRU Tail Gas Incinerator	7.55	0.60	0.114

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for 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.

OAC 252:100-29 (Fugitive Dust) [Applicable]
Subchapter 29 prohibits the handling, transportation, or disposition of any substance likely to become airborne or windborne without taking “reasonable precautions” to minimize emissions of fugitive dust. 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 to interfere with the maintenance of air quality standards. Under normal circumstances, this facility will not cause a problem in this area, therefore, no specific precautions are required.

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Part 2 limits emissions of sulfur dioxide from any one existing source or any one new petroleum and natural gas process source subject to OAC 252:100-31-26(a)(1). Ambient air concentration of sulfur dioxide at any given point shall not be greater than 1,300 $\mu g/m^3$ in a 5-minute period of any hour, 1,200 $\mu g/m^3$ for a 1-hour average, 650 $\mu g/m^3$ for a 3-hour average, 130 $\mu g/m^3$ for a 24-hour average, or 80 $\mu g/m^3$ for an annual average. Part 2 also limits the ambient air impact of hydrogen sulfide emissions from any new or existing source to 0.2 ppm for a 24-hour average (equivalent to 280 $\mu g/m^3$). Compliance with these standards was demonstrated in the previous section.
Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). For gaseous fuels the limit is 0.2 lb/million BTU heat input. This is equivalent to approximately 0.2 weight percent sulfur in the fuel gas which is equivalent to 2,000 ppm sulfur. All fuel-burning equipment constructed after June 11, 1973, is also subject to NSPS Subpart J which specifies a more stringent limitation: 159 ppm sulfur, or about 0.0234 lb/MMBTU. The permit will require the use of commercial natural gas or sweetened refinery fuel gas with a maximum fuel sulfur content of 159 ppm for fuel-burning equipment constructed after July 1, 1972, to ensure compliance with Subchapter 31.
Part 5 requires at least 95% reduction of H_2S from new petroleum and natural gas processing equipment. The new SRU is designed to provide 99.9% reduction.
Part 5 also specifies a minimum sulfur recovery efficiency. For units with capacities between 5 and 150 LT/D, the applicable minimum recovery efficiency is given by the equation:

$$Z = 92.34 * X^{0.0074}$$

Where Z is the recovery efficiency (%) and X is the sulfur processing rate (LT/D). For a 50 LT/D unit, the minimum required efficiency is 95.18%. An overall efficiency of 99.8% is anticipated, which is in compliance with Part 5.

OAC 252:100-33 (Nitrogen Oxides) [Not Applicable to This Project]
Subchapter 33 affects new fuel-burning equipment with a rated heat input of 50 MMBTUH or more. All added fuel-burning equipment is smaller than the 50 MMBTUH threshold.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
None of the following affected processes are part of this project: 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 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 an organic vapor recovery system. Part 3 also requires storage tanks constructed after December 28, 1974, with a capacity of more than 40,000 gallons and storing a VOC with a vapor pressure greater than 1.5 psia to be equipped with either an external floating roof, a fixed roof with an internal floating cover, a vapor recovery system, or other equally effective control methods approved by the DEQ. The new tank storing sour water is not subject because the diesel blanket has a vapor pressure less than 1.5. The sulfur tank and sulfur pit will store inorganic materials, therefore, they are not subject to Subchapter 37.
Part 3 applies to VOC loading facilities constructed after December 24, 1974. Facilities with a throughput greater than 40,000 gallons/day are required to be equipped with a vapor-collection and disposal system unless all loading is accomplished by bottom loading with the hatches of the tank truck or trailer closed. The new loading racks handle only inorganic materials, therefore, they are not subject.
Part 5 limits the VOC content of coating operations. This facility does not normally conduct coating or painting operations except for routine maintenance of the facility and equipment, which is exempt.
Part 7 requires all VOC gases from a vapor recovery blowdown system to be burned by a smokeless flare or equally effective control device unless it is inconsistent with the "Minimum Federal Safety Standards for the Transportation of Natural and Other Gas by Pipeline" or any State of Oklahoma regulatory agency.
Part 7 requires fuel-burning and refuse-burning equipment to be operated and maintained so as to minimize emissions of VOCs. Temperature and available air must be sufficient to provide essentially complete combustion.

OAC 252:100-41 (Hazardous Air Pollutants and Toxic Air Contaminants) [Applicable]
Part 3 addresses hazardous air contaminants. NESHAP, as found in 40 CFR Part 61, are adopted by reference as they exist on July 1, 2003, with the exception of Subparts B, H, I, K, Q, R, T, W and Appendices D and E, all of which address radionuclides. In addition, General Provisions as found in 40 CFR Part 63, Subpart A, and the Maximum Achievable Control Technology (MACT) standards as found in 40 CFR Part 63, Subparts F, G, H, I, J, L, M, N, O, Q, R, S, T, U, W, X, Y, AA, BB, CC, DD, EE, GG, HH, II, JJ, KK, LL, MM, OO, PP, QQ, RR, SS, TT, UU, VV, WW, XX, YY, CCC, DDD, EEE, GGG, HHH, III, JJJ, LLL, MMM, NNN, OOO, PPP, QQQ, RRR, TTT, UUU, VVV, XXX, AAAA, CCCC, GGGG, HHHH, JJJJ, NNNN, OOOO, QQQQ, RRRR, SSSS, TTTT, UUUU, VVVV, WWWW, XXXX, BBBBB, CCCCC, FFFFF, JJJJJ, KKKKK, LLLLL, MMMMM, NNNNN, PPPPP, QQQQQ, and SSSSS are hereby adopted by reference as they exist on July 1, 2003. These standards apply to both existing and new sources of HAPs. These requirements are covered in the "Federal Regulations" section.

Part 5 is a state-only requirement governing toxic air contaminants. New sources (constructed after March 9, 1987) emitting any category "A" pollutant above de minimis levels must perform a BACT analysis. All sources are required to demonstrate that emissions of any toxic air contaminant which exceeds the de minimis level do not cause or contribute to a violation of the MAAC. Those emissions that are subject to a MACT are not subject to MAACs. Since emissions from the SRU stack are subject to 40 CFR Part 63, Subpart UUU, they are not subject to a MAAC. Emissions of toxic air pollutants from the other points are expected to be negligible.

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 Pollution Control Rules are not applicable to this facility:

OAC 252:100-11	Alternative Emissions Reduction	not requested
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 Elevators	not in source category
OAC 252:100-39	Nonattainment Areas	not in area category
OAC 252:100-47	Landfills	not in source category

SECTION VII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]
The facility is a major source for NOx, CO, SO_2, PM_{10}, and VOC. Emissions of NOx and SO_2 exceeded PSD levels of significance, requiring netting, but net emissions changes are below PSD levels of significance. Any future increases must be evaluated in the context of PSD significance levels: 40 TPY NOx, 100 TPY CO, 40 TPY SO_2, 15 TPY PM_{10}, 40 TPY VOC, 10 TPY TRS, or 0.6 TPY lead.

NSPS, 40 CFR Part 60 [Subparts A, Dc, J, GGG, and QQQ Are Applicable]
Subpart A (General Provisions) specifies general control device requirements for control devices used to comply with applicable subparts. The hew Hydrocracker Flare (EUG 48) receives VOC emissions from process units which are subject to NSPS Subpart GGG. Standards for flares used to comply with emissions limitations are stated in 40 CFR 60.18; "the standards are placed here for administrative convenience and only apply to facilities covered by subparts referring to this section." Subpart GGG requires compliance with 40 CFR 60.482-10, and 60.482-10 requires compliance with 60.18 for flares used to comply with the standards. 40 CFR 60.18(f)(5) states that the maximum steam-assisted flare exit velocity shall be determined by the following equation:

$$\mathrm{Log}_{10}\,(V_{max}) = (H_t + 28.8)/31.7$$

where H_t = the net heating value of the flared gas, MJ/SCM. The section further requires that the flare be monitored for the presence of a pilot flame and that the flare be operated with no visible emissions. The flare is designed to comply with these standards.

Subpart Dc (Steam Generating Units) affects boilers with a rated heat input between 10 and 100 MMBTUH which commenced construction, reconstruction, or modification after June 9, 1989. Subpart Dc specifically excludes process heaters but does affect the SRU hot oil heater. The only standard applicable to a gas-fired unit is a requirement to keep records of fuels used.

Subpart J (Petroleum Refineries) applies to the following affected facilities in petroleum refineries: fluid catalytic cracking unit catalyst regenerators, fuel gas combustion devices, and Claus sulfur recovery plants which commenced construction or modification after June 11, 1973. The new sulfur recovery unit is subject to the following standards:

- SO_2 is limited to 250 ppm @ 0% oxygen; and
- Continuous emissions monitoring is required.

All fuel combustion devices which commence construction or modification after June 11, 1973, are subject to a fuel gas H_2S limitation of 0.10 grains/DSCF which is required to be continuously monitored and recorded. Fuel gas combusted by the affected units is monitored and recorded at one location. All emission limits, monitoring, and recordkeeping requirements will be incorporated into the permit.

Subpart Kb (VOL Storage Vessels) affects storage vessels for volatile organic liquids (VOLs) which have a storage capacity greater than or equal to 19,813 gallons and which commenced construction, reconstruction, or modification after July 23, 1984. Tanks storing organic liquids with vapor pressures less than 0.5 psia are exempted from Subpart Kb. Diesel will have a vapor pressure of 0.01 psia or less.

Subpart GGG (Equipment Leaks of VOC in Petroleum Refineries) affects each valve, pump, pressure relief device, sampling connection system, open-ended valve or line, and flange or other connector in VOC service at a process unit which commenced construction or modification after January 4, 1983, and which is located at a petroleum refinery. Subpart GGG affects the Hydrocracker (EU-3725A) and the Amine Treating Unit (EU-3740A).

Subpart QQQ (VOC Emission from Petroleum Refinery Wastewater Systems) applies to individual drain systems, oil-water separators, and aggregate facilities located in a petroleum refinery and which commenced construction, modification, or reconstruction after May 4, 1987. Drains are required to be equipped with water seal controls. Junction boxes are required to be equipped with a cover and may have an open vent pipe. Sewer lines shall not be open to the atmosphere and shall be covered or enclosed in a manner so as to have no visual gaps or cracks in joints, seals, or other emission interfaces. Subpart QQQ affects the new equipment in EUG 60.

NESHAP, 40 CFR Part 61 [Applicable]
Subpart FF (Benzene-contaminated Waste Operations) affects wastewater treatment systems at petroleum refineries where benzene content of wastewaters exceed 1.0 metric ton per year. Those refineries whose benzene content is between 1.0 and 10.0 metric tons per year are required only to analyze the wastewaters for the presence of benzene to demonstrate that the amount of benzene in wastewater at the refinery is less than 10.0 TPY. The Title V application included an analysis of wastewater streams showing a benzene content of 4.81 metric tons in 1997.

NESHAP, 40 CFR Part 63 [Applicable]
Subpart CC (Petroleum refineries) affects, process vents (except FCCUs and catalyst regenerators) with HAP concentrations exceeding 20 ppm, storage vessels, wastewater streams and treatment, equipment leaks, gasoline loading racks, marine vessel loading system, and pipeline breakout stations. Of the affected equipment, storage tanks, equipment leaks, process vents, wastewater streams and treatment, and a gasoline loading rack are present at this refinery.

Storage Tanks: existing storage tanks with HAP concentrations above 4% and which have vapor pressures above 1.5 psia are required to implement controls identical to NSPS Subpart Kb. The new sour water and sulfur tanks are not subject to MACT requirements.

Process Vents: any refinery unit process vent with greater than 20 ppm HAPs and which emits more than 33 kg/day VOC is subject to control requirments. Subpart CC requires affected vents to be equipped with 98% efficient controls, vented to a flare, be vented to a combustion unit firebox, or reduced to 20 ppm HAP or less. The Hydrocracker Unit will be vented to a flare.

Equipment Leaks: these standards affect valves, flanges, pumps, and compressors except for compressors in hydrogen service. Process streams with 5% or more HAPs are required to comply. Subpart CC provides a phased schedule of compliance with standards. Phase III standards are in effect following February 18, 2001.

Wastewater Streams and Treatment: Subpart CC requires refineries whose benzene content in wastewater is between 1 and 10 metric tons per year to monitor benzene content. (Subpart CC repeats standards for 40 CFR Part 61 Subpart FF for benzene-contaminated wastewater systems).

Subpart UUU (Petroleum Refineries Catalytic Cracking, Catalytic Reforming, and Sulfur Plant Units) was promulgated on April 11, 2002. The compliance date for this regulation is April 11, 2005. SO_2 emissions are limited to 250 ppm, corrected to 0% O_2. The SRU will be subject to these standards upon start-up.

Subpart DDDDD (Industrial/Commercial/Institutional Boilers and Process Heaters) was promulgated on September 13, 2004. All of the boilers, heaters, and reboilers located at the refinery are in either the large gaseous fuel or small gaseous fuel subcategories. Small gaseous fuel units are units with a heat rating of less than or equal to 10 MMBTUH. Large gaseous fuel units are units with a heat rating greater than 10 MMBTUH. Existing boilers and process heaters that are in the large gaseous fuels subcategory are only subject to the initial notification requirements. They are not subject to the emission limits, work practice standards, performance testing, monitoring, startup shutdown and maintenance plan, site-specific monitoring plans, recordkeeping and reporting requirements of this subpart or any other requirements in Subpart A. Existing and new boilers and process heaters in the small gaseous fuels subcategory are not subject to this subpart or the initial notification requirements. The new process heater is not rated greater than 100 MBTUH.

Compliance Assurance Monitoring, 40 CFR Part 64 [Not Applicable]
Compliance Assurance Monitoring, as published in the Federal Register on October 22, 1997, applies to any pollutant specific emission unit at a major source, that is required to obtain a Title V permit, if it meets all 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.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of major source thresholds.

CAM states that any emission unit which is subject to a MACT is not subject to CAM. The only unit with potential emissions greater than 100 TPY is the new SRU, which will be subject to NESHAP Subpart UUU on its start-up date.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Applicable]
Toxic and flammable substances subject to this regulation are present in the facility in quantities greater than the threshold quantities. A Risk Management Plan was submitted to EPA on June 17, 1999, and was determined to be complete. More information on this federal program is available on the web page: *www.epa.gov/ceppo*.

Stratospheric Ozone Protection, 40 CFR Part 82 [Subpart A and F 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.

This facility does not utilize any Class I & II substances.

SECTION VIII. COMPLIANCE

Tier Classification and Public Review

This application has been determined to be a **Tier II** based on the request for a construction permit for a significant modification at an existing major facility. The applicant published the “Notice of Filing a Tier II Application” in the *Wynnewood Gazette* on September 23, 2004, a weekly newspaper of general circulation in Garvin County. The notice said that the application was available for public review at the Wynnewood Public Library, 108 N. Dean A. McGee Avenue, Wynnewood, OK, or at the AQD office. A draft of this permit was also made available for public review for a period of thirty days as in another newspaper announcement in the *Wynnewood Gazette* on December 16, 2004. The facility is located within 50 miles of the border with the state of Texas; that state was notified of the draft permit. No comments were received from the public or state of Texas. The “proposed” permit was submitted to EPA for a 45-day comment period; no comments were received from Region VI.

The applicant 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 property.

Information on all permit actions is available for review by the public in the Air Quality section of the DEQ Web page:*http://www.deq.state.ok.us/*

Fees Paid

Major source construction permit significant modification fee of $1,500.

SECTION IX. SUMMARY

The facility has demonstrated the ability to comply with all applicable Air Quality rules and regulations. There are no active compliance or enforcement Air Quality issues that would affect the issuance of this permit. Issuance is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Wynnewood Refining Company
Wynnewood Refinery **Permit No. 98-117-C (M-2)(PSD)**

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on September 14, 1998, with supplemental information received October 14, 2004. The Evaluation Memorandum dated March 21, 2005, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain limitations or permit requirements. Commencing construction or operations under this permit constitutes acceptance of, and consent to the conditions contained herein:

1. Emissions limitations and operational requirements: [OAC 252:100-8-6(a)(1)]

EUG 17 – Internal Floating Roof Tank (Sour Water With Diesel Blanket), Not Subject to 40 CFR Part 63 Subpart CC (Group 2 Storage Vessels)

EU	Point	Normal Contents	Throughput, Gallons per 12-Month Period	Vapor Pressure Limit Psia	VOC	
					lb/hr	TPY
P-T301	P-T301	Diesel / Sour Water	56,560,000	0.5	0.05	0.20

1. The permittee shall comply with all applicable operational monitoring requirements: keeping records of the petroleum liquid stored, the period of storage, and the maximum true vapor pressure of the liquid during the storage period. [40 CFR 63.654(f)]
2. The permittee shall keep monthly records of throughput of the above tank. [OAC 252:100-43]

EUG 18 – Cone Roof Tank for Molten Sulfur

EU	Point	Normal Contents	H_2S	
			lb/hr	TPY
P-T302	P-T302	Sulfur	0.014	0.06

1. The H_2S content of discharges from this unit shall not exceed 4,000 ppm. [OAC 252:100-8-6(a)(1)]
2. At least once every calendar quarter, the permittee shall conduct testing of H_2S concentrations in discharges from this tank. Testing may be done using Draeger tubes or an equivalent method approved by Air Quality. [OAC 252:100-43]

<u>EUG 30: Fugitive Emissions Subject to 40 CFR Part 63 Subpart CC and/or NSPS Subpart GGG</u> Fugitive VOC emissions are estimated based on existing equipment items but do not have a specific limitation except to comply with the applicable leak detection and repair (LDAR) program.

EU	Description	Equipment	Number of Items
EU-3725A	VOC Leakage at Hydrocracker	gas valves	123
		lt liquid valves	459
		hvy liq valves	495
		flanges	1152
		lt liq pumps	2
		hvy liq pumps	13
		gas relief valves	11
		compressor seals	20

1. All affected equipment, in HAP service (contacting >5% by weight HAP), shall comply with NESHAP, 40 CFR Part 63, Subpart CC. The permittee shall comply with the applicable sections for each affected component. [40 CFR Part 63, Subpart CC]
   a. §63.642 General Standards – (c), (d)(1), (e), & (f);
   b. §63.648 Equipment Leak Standards – (a), (b), (c), & (e-i);
   c. §63.654 Reporting and Recordkeeping Requirements – (d), & (f-h).
2. Equipment determined not to be in HAP service (contacting <5% by weight HAP) and which is in VOC service (contacting >10% by weight HAP) shall comply with the requirements of NSPS 40 CFR Part 60, Subpart GGG. [40 CFR Part 60, Subpart GGG]
   a. §60.592 Standards (a-e);
   b. §60.593 Exceptions (a-e).

EUG 35: Fugitive Emissions Subject to Monitoring Requirements (40 CFR Part 63 Subpart CC and/or NSPS Subpart GGG) Fugitive VOC emissions are estimated based on existing equipment items but do not have a specific limitation except to comply with the applicable LDAR program.

EU	Description	Equipment	Number of Items
EU-3740C	VOC Leakage at New Amine Treating Unit, Sour Water Stripper, Sulfur Recovery Unit, and Tail Gas Treating Unit	gas valves	156
		lt liquid valves	14
		hvy liq valves	294
		flanges	1343
		lt liq pumps	3
		hvy liq pumps	14

1. All affected equipment, in HAP service (contacting >5% by weight HAP), shall comply with NESHAP, 40 CFR Part 63, Subpart CC. The permittee shall comply with the applicable sections for each affected component. [40 CFR Part 63, Subpart CC]
   a. §63.642 General Standards – (c), (d)(1), (e), & (f);
   b. §63.648 Equipment Leak Standards – (a), (b), (c), & (e-i);
   c. §63.654 Reporting and Recordkeeping Requirements – (d), & (f-h).
2. Equipment determined not to be in HAP service (contacting <5% by weight HAP) and which is in VOC service (contacting >10% by weight HAP) shall comply with the requirements of NSPS 40 CFR Part 60, Subpart GGG. [40 CFR Part 60, Subpart GGG]
   a. §60.592 Standards (a-e);
   b. §60.593 Exceptions (a-e).

EUG 40: Grandfathered Fuel Gas Combustion Devices

EU	Point	Equipment	MMBTUH	SO_2	
				lb/hr	TPY
P-JH101	P-JH101	Hydrocracker fractionator reboiler	36.8	3.49	15.29
P-JH1	P-JH1	Hydrocracker reactor heater	18.4	1.75	7.65
P-JH2	P-JH2	Hydrocracker reactor heater	18.4	1.75	7.65
P-SB#4	P-SB#4	Steam boiler No. 4	72	6.83	29.91
P-SB#5	P-SB#5	Steam boiler No. 5	72	6.83	29.91

1. Fuel for these units shall not contain more than 450 ppm sulfur. [OAC 252:100-8-6(a)]
2. The sulfur content of fuel gas to the units listed shall be continuously monitored for sulfur content. [OAC 252:100-43]

EUG 41: Fuel Gas Combustion Devices Subject to Oklahoma Rules but Not NSPS

EU	Point	Equipment	MMBTUH	SO_2	
				lb/hr	TPY
P-1B8	P-1B8	Wickes steam boiler	126	10.76	47.13

1. Fuel for this unit shall not contain more than 450 ppm sulfur. [OAC 252:100-31]
2. The sulfur content of fuel gas to the unit listed shall be continuously monitored for sulfur content. [OAC 252:100-43]

EUG 44: Fuel Gas Combustion Device, Subject to NSPS Subpart J

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
P-H501	SRU Hot Oil Heater	0.46	2.04	1.40	6.12	6.14	26.92	0.34	1.48	5.16	22.61
P-H502	SRU Hot Oil Heater	0.13	0.55	0.37	1.64	1.66	7.27	0.09	0.40	1.39	6.11
P-HT134	Tank 134 heater	0.06	0.28	0.28	1.23	0.84	3.68	0.05	0.20	0.71	3.09
P-HT136	Tank 136 heater	0.06	0.28	0.28	1.23	0.84	3.68	0.05	0.20	0.71	3.09
P-HT264	Tank 264 heater	0.01	0.03	0.03	0.15	0.10	0.44	0.05	0.20	0.71	3.09

1. The above units are subject to New Source Performance Standards (NSPS), Subpart J and shall comply with all applicable provisions. [40 CFR Part 60, Subpart J]
   a. § 60.104 Standards for SO_2 – (a)(1);
   b. § 60.105 Monitoring of operations – (a)(4), (e)(3)(ii);
   c. § 60.106 Test methods and procedures – (e).
2. The above unitsshall only be fired with refinery fuel gas or pipeline-grade natural gas. [OAC 252:100-8-6(a)(1)]

EUG 48: New Hydrocracker Flare, Subject to NSPS Subpart J

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
P-FS1503	Hydrocracker Flare	0.01	0.01	0.01	0.01	0.02	0.09	0.03	0.13	0.07	0.32

1. P-FS1503 is subject to New Source Performance Standards (NSPS), Subpart J and shall comply with all applicable provisions. [40 CFR Part 60, Subpart J]
   a. § 60.104 Standards for SO_2 – (a)(1);
   b. § 60.105 Monitoring of operations – (a)(4), (e)(3)(ii);
   c. § 60.106 Test methods and procedures – (e).
2. The flare shall be monitored continuously for the presence of a pilot flame. [40 CFR 60.18(f)]
3. Fuel for this unit shall not contain more than 160 ppm sulfur (0.1 gr/DSCF). [40 CFR 60.104(a)(1)]
4. The sulfur content of fuel gas to the unit listed shall be continuously monitored for sulfur content. [40 CFR 60.105(a)(3)]
5. Performance testing shall be conducted within 180 days of start-up showing compliance with the flare velocity requirements of 40 CFR Part 60.18. [40 CFR 60.18(f)(3) and (4)]

EUG 54 – Molten Sulfur Pit

EU	Point	Normal Contents	H_2S	
			lb/hr	TPY
P-SP301	P-SP301	Sulfur	0.014	0.06

1. The H_2S content of discharges from this unit shall not exceed 4,000 ppm. [OAC 252:100-8-6(a)(1)]
2. At least once every calendar quarter, the permittee shall conduct testing of H_2S concentrations in discharges from this tank. Testing may be done using Draeger tubes or an equivalent method approved by Air Quality. [OAC 252:100-43]

EUG 60 – New SRU Wastewater Systems Subject to NSPS Subpart QQQ and 40 CFR Part 63 SubpartCC

EU	Point	Equipment	VOC	
			lb/hr	TPY
EU-WW3	EU-WW3	P-trap Drains	0.88	3.83
		Junction Boxes	0.14	0.61

1. The new wastewater handling equipment within the refinery is subject to NSPS, 40 CFR Part 60, Subpart QQQ and all affected equipment shall comply with all applicable requirements. [40 CFR 60, NSPS, Subpart QQQ]
   a. § 60.692–1 Standards: General.
   b. § 60.692–2 Standards: Individual drain systems.
   c. § 60.692–3 Standards: Oil-water separators.
   d. § 60.692–4 Standards: Aggregate facility.
   e. § 60.692–5 Standards: Closed vent systems and control devices.
   f. § 60.692–6 Standards: Delay of repair.
   g. § 60.692–7 Standards: Delay of compliance.
   h. § 60.693–1 Alternative standards for individual drain systems.
   i. § 60.693–2 Alternative standards for oil-water separators.
   j. § 60.695 Monitoring of operations.
   k. § 60.696 Performance test methods and procedures and compliance provisions.
   l. § 60.697 Recordkeeping requirements.
   m. § 60.698 Reporting requirements.

EUG 67 – Hydrocracker Cooling Tower

EU	Point	Equipment	VOC		PM	
			lb/hr	TPY	lb/hr	TPY
P-CWT4	P-CWT4	Hydrocracker Cooling Tower	0.26	1.10	0.08	0.36

EUG 70 – Grandfathered Reciprocating Gas-fueled Engines

EU	Point	Make	Service	HP	Serial #	Installed Date
P-HC1A	P-HC1A	Clark	Hysomer	330	6BJ516	1958
P-HC1B	P-HC1B	Clark	Hysomer	330	6BJ517	1958
P-PC1A	P-PC1A	Clark	Platformer	550	22744	1958
P-PC1B	P-PC1B	Clark	Platformer	550	22745	1958
P-PC1C	P-PC1C	Clark	Platformer	550	22746	1958

1. The above units shall be removed from operation prior to start-up of the new sulfur recovery unit.

EUG 80 – Non-gasoline Loading Racks

EU	Point	Equipment	Installed Date
P-LR7T	P-LR7T	NaSH truck loading rack	1982
P-LR7R	P-LR7R	NaSH rail loading rack	1982

1. The above units shall be removed from operation prior to start-up of the new sulfur recovery unit.

EUG 82 – Molten Sulfur Loading Racks

EU	Point	Equipment	H_2S	
			lb/hr	TPY
P-SLRR	P-SLRR	Sulfur railcar loading rack	0.3	0.06
P-SLRT	P-SLRT	Sulfur truck loading rack		

1. The H_2S content of discharges from this unit shall not exceed 4,000 ppm. [OAC 252:100-8-6(a)(1)]
2. At least once every calendar quarter, the permittee shall conduct testing of H_2S concentrations in discharges from this tank. Testing may be done using Draeger tubes or an equivalent method approved by Air Quality. [OAC 252:100-43]

EUG 87: SRU Tail Gas Incinerator Subject to NSPS Subpart J and 40 CFR Part 63 Subpart UUU

Point ID	Emission Unit	PM_{10}		SO_2		NOx		VOC		CO	
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
P-TGIS1	Sulfur Recovery Unit	0.22	1.00	18.90	82.77	3.01	13.20	0.17	0.73	7.14	31.27

1. P-TGIS1 is subject to New Source Performance Standards (NSPS), Subpart J and shall comply with all applicable provisions. [40 CFR Part 60, Subpart J]
   a. § 60.104 Standards for sulfur dioxide (SO_2) – (a)(2)(i);
   b. § 60.105 Monitoring of operations – (a)(5)(i & ii) & (e)(4)(i);
   c. § 60.106 Test methods and procedures – (a) & (f)(1 & 3).

2. P-TGIS1 is subject to National Emission Standards for Hazardous Air Pollutants (NESHAP), Subpart UUU and shall comply with all applicable provisions.

   [40 CFR Part 63, Subpart UUU]

   a. § 63.1568 What are my requirements for HAP emissions from sulfur recovery units? – (a)(1)(i), (b)(1, 2, 5, 6, & 7), & (c)(1 & 2);
   b. § 63.1569 What are my requirements for HAP emissions from bypass lines? – (a)(1 & 3), (b)(1-4), & (c)(1 & 2);
   c. § 63.1570 What are my general requirements for complying with this subpart? – (a) & (c-g);
   d. 63.1571 How and when do I conduct a performance test or other initial compliance demonstration? – (a) & (b)(1-5);
   e. 63.1572 What are my monitoring installation, operation, and maintenance requirements? – (a)(1-4) & (d)(1-2);
   f. 63.1574 What notifications must I submit and when? – (a)(1-3), (c), (d), & (f)(1, 2(i), 2(ii), 2(viii), 2(ix), & 2(x));
   g. 63.1575 What reports must I submit and when? – (a-h);
   h. 63.1576 What records must I keep, in what form, and for how long? – (a), (b)(1, 3, 4, 5), & (d-i);
   i. 63.1577 What parts of the General Provisions apply to me?

3. P-TGIS1 is subject to OAC 252:100-31-26 and shall comply with all applicable provisions. [OAC 252:100-31-26]

   a. Hydrogen sulfide (H_2S) from any new petroleum or natural gas process equipment shall be removed from the exhaust gas stream or it shall be oxidized to SO_2. H_2S emissions shall be reduced by 95% of the H_2S in the exhaust gas.

      [OAC 252:100-31-26(a)(1)]

   b. Sulfur recovery plants operating in conjunction with any refinery process shall have the sulfur reduction efficiencies required below.

      [OAC 252:100-31-26(a)(2)(B)]

      i. When the sulfur content of the acid gas stream from the refinery process is greater than 5.0 LT/D but less than or equal to 150.0 LT/D, the required SO_2 emission reduction efficiency of the sulfur recovery plant shall be calculated using the following formula where Z is the minimum emission reduction efficiency required at all times and X is the sulfur feed rate expressed in LT/D of sulfur rounded to one decimal place: $Z = 92.34 (X^{0.00774})$ [OAC 252:100-31-26(a)(2)(D)]

   c. All new thermal devices for petroleum and natural gas processing facilities regulated under OAC 252:100-31-26(a)(1) shall have installed, calibrated, maintained, and operated an alarm system that will signal noncombustion of the gas. [OAC 252:100-31-26(c)]

4. In accordance with 40 CFR Part 61, Subpart FF, the permittee shall monitor the benzene content in wastewaters and shall report total benzene content (metric tons per year) annually to AQD.
[40 CFR 61.354(a)(1), 40 CFR 61.355(a)(1) and (2)]

5. Upon issuance of an operating permit, the permittee shall be authorized to operate the facility continuously (24 hours per day, every day of the year). [OAC 252:100-8-6(a)]

6. Records of operations shall be maintained on-site 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. Sulfur content of gas fuels used in EUG No. 40, 41, 44, 48, and 87 (continuous when operating).
B. Vapor pressures and throughputs of the tank listed in EUG No. 17.
C. Records as required by 40 CFR Part 63, Subpart UUU, for the SRU.
D. Inspection of water seals on drains on systems in the SRU (weekly)
E. Records as required by NESHAP Subpart CC or NSPS Subpart GGG of leak detection and repair for the Amine Treating Unit and Hydrocracker Unit.
F. Records of annual benzene content in wastewater as required by 40 CFR 63, Subpart CC.
G. Records of sulfur storage H_2S concentrations for EUGs 18 and 54.

7. No later than 180 days after commencement of operation, the permittee shall apply for a modification to the facility Title V operating permit incorporating all of the above changes.

8. The Permit Shield (Standard Conditions, Section VI) is extended to the following requirements that have been determined to be inapplicable to this facility.
[OAC 252:100-8-6(d)(2)]

A.	OAC 252:100-11	Alternative Emissions Reduction
B.	OAC 252:100-15	Mobile Sources
C.	OAC 252:100-17	Incinerators
D.	OAC 252:100-23	Cotton Gins
E.	OAC 252:100-24	Grain Elevators
F.	OAC 252:100-39	Nonattainment Areas
G.	OAC 252:100-47	Landfills
H.	40 CFR Parts 72, 73, 74, 75, and 76	Acid Rain

Mr. Chris Hawley
Environmental Manager
Wynnewood Refining Company
906 S. Powell
Wynnewood, OK 73098

SUBJECT: Permit No. **98-117-C (M-2)(PSD)**
Wynnewood Refinery
Garvin County, Oklahoma

Dear Mr. Hawley:

Enclosed is the permit authorizing construction of the referenced facility. Please note that this permit is issued subject to standard and specific conditions, which 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 on approved AQD forms and submitted (hardcopy or electronically) by March 1st of every year. Any questions concerning the form or submittal process should be referred to the Emissions Inventory Staff at 405-702-4100.

Thank you for your cooperation in this matter. If we can be of further service, please contact our office at (405) 702-4198.

Sincerely,

David S. Schutz, P.E.
New Source Permits Section
AIR QUALITY DIVISION

enclosure

cc: Wynnewood DEQ Office, Garvin County

PART 70 PERMIT

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

Permit No. 98-117-C (M-2)(PSD)

Wynnewood Refining Company

having complied with the requirements of the law, is hereby granted permission to construct a new sulfur recovery unit and amine treater unit at a petroleum refinery at Wynnewood, Garvin County, Oklahoma.

subject to the following conditions, attached:

[X] Standard Conditions dated March 9, 2005

[X] Specific Conditions

In the absence of construction commencement, this permit shall expire 18 months from the issuance date, except as authorized under Section VIII of the Standard Conditions.

Division Director, Air Quality Division **Date**

DEQ Form #100-890 **Revised 2/14/05**

TITLE V (PART 70) PERMIT TO OPERATE / CONSTRUCT
STANDARD CONDITIONS
(March 9, 2005)

SECTION I. DUTY TO COMPLY

A. This is a permit to operate / construct this specific facility in accordance with Title V of the federal Clean Air Act (42 U.S.C. 7401, et seq.) 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, for revocation of the approval to operate under the terms of this permit, or for denial of an application to renew this permit. All terms and conditions (excluding state-only requirements) are enforceable by the DEQ, by EPA, and by citizens under section 304 of the Clean Air Act. This permit is valid for operations only at the specific location listed.
[40 CFR §70.6(b), OAC 252:100-8-1.3 and 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. [OAC 252:100-8-6 (a)(7)(B)]

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

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

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. Oral notifications (fax is also acceptable) shall be made to the AQD central office as soon as the owner or operator of the facility has knowledge of such emissions but no later than 4:30 p.m. the next working day the permittee becomes aware of the exceedance. Within ten (10) working days after the immediate notice is given, the owner operator shall submit a written report describing the extent of the excess emissions and response actions taken by the facility. Every written report submitted under OAC 252:100-8-6 (a)(3)(C)(iii) shall be certified by a responsible official. [OAC 252:100-8-6 (a)(3)(C)(iii)]

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

A. The permittee shall keep records as specified in this permit. Unless a different retention period or retention conditions are set forth by a specific term 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), 8-6 (c)(1), and 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 as 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, 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. [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 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.

F. Submission of quarterly or semi-annual reports required by any applicable requirement that are duplicative of the reporting required in the previous paragraph will satisfy the reporting requirements of the previous paragraph if noted on the submitted report.

G. Every report submitted under OAC 252:100-8-6 and OAC 252:100-43 shall be certified by a responsible official. [OAC 252:100-8-6 (a)(3)(C)(iv)]

H. Any owner or operator subject to the provisions of NSPS shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of an affected facility or any malfunction of the air pollution control equipment. [40 CFR 60.7 (b)]

I. Any owner or operator subject to the provisions of NSPS shall maintain a file of all measurements and other information required by the subpart recorded in a permanent file suitable for inspection. This file shall be retained for at least two years following the date of such measurements, maintenance, and records. [40 CFR 60.7 (d)]

J. 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 preventative or corrective measures adopted. [OAC 252:100-8-6 (c)(4)]

K. All testing must be conducted by methods approved by the Division Director under the direction of qualified personnel. 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. [40 CFR §70.6(a), 40 CFR §51.212(c)(2), 40 CFR § 70.7(d), 40 CFR §70.7(e)(2), OAC 252:100-8-6 (a)(3)(A)(iv), and OAC 252:100-43]

L. The permittee shall submit to the AQD a copy of all reports submitted to the EPA as required by 40 CFR Part 60, 61, and 63, for all equipment constructed or operated under this permit subject to such standards. [OAC 252:100-4-5 and OAC 252:100-41-15]

SECTION IV. COMPLIANCE CERTIFICATIONS

A. No later than 30 days after each anniversary date of the issuance of the original 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. 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)(A), (C)(v), and (D)]

B. The 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; and a statement that the facility will continue to comply with all applicable requirements.

[OAC 252:100-8-6 (c)(5)(C)(i)-(iv)]

C. Any document required to be submitted in accordance with this permit shall be certified as being true, accurate, and complete by a responsible official. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification 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, -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 10 days after such date.
[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, 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 as necessary to remedy deficiencies 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.

C. If “grandfathered” status is claimed and granted for any equipment covered by this permit, it shall only apply under the following circumstances: [OAC 252:100-5-1.1]

(1) It only applies to that specific item by serial number or some other permanent identification.
(2) Grandfathered status is lost if the item is significantly modified or if it is relocated outside the boundaries of the facility.

D. To make changes other than (1) those described in Section XVIII (Operational Flexibility), (2) administrative permit amendments, and (3) those not defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII), the permittee shall notify AQD. Such changes may require a permit modification. [OAC 252:100-8-7.2 (b)]

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(18) 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 emergency and/or 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)]

B. 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. [OAC 252:100-8-2]

C. An emergency shall constitute an affirmative defense to an action brought for noncompliance with such technology-based emission limitation if the conditions of paragraph D below are met.

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

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

(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;
(4) the permittee submitted timely notice of the emergency to AQD, pursuant to the applicable regulations (i.e., for emergencies that pose an “imminent and substantial danger,” within 24 hours of the time when emission limitations were exceeded due to the emergency; 4:30 p.m. the next business day for all other emergency exceedances). *See OAC 252:100-8-6(a)(3)(C)(iii)(I) and (II).* 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; and

(5) the permittee submitted a follow up written report within 10 working days of first becoming aware of the exceedance.

[OAC 252:100-8-6 (e)(2), (a)(3)(C)(iii)(I) and (IV)]

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)]

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. [OAC 252:100-8-2]

(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.
(3) 0.6 tons per year for any one category A substance, 1.2 tons per year for any one category B substance or 6 tons per year for any one category C substance as defined in 252:100-41-40.

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]

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 7 days, or 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 subsection. [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) No person shall cause or permit the discharge of emissions such that National Ambient Air Quality Standards (NAAQS) are exceeded on land outside the permitted facility. [OAC 252:100-3]
(2) 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]
(3) 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]
(4) For all emissions units not subject to an opacity limit promulgated under 40 CFR, Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for 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. [OAC 252:100-25]
(5) 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]
(6) 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]
(7) Volatile Organic Compound (VOC) storage tanks built after December28, 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)]
(8) 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]

(9) Except as otherwise provided, no person shall cause or permit the emissions of any toxic air contaminant in such concentration as to cause or to contribute to a violation of the MAAC. **(State only)** [OAC 252:100-41]

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.
(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.
(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 Sources' 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 Oklahoma Administrative Code 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 Code of Federal Regulations (CFR) § 70.7 (h)(1). This public notice shall include notice to the public that this permit is subject to Environmental Protection Agency (EPA) review, EPA objection, and petition to EPA, as provided by 40 CFR § 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 CFR § 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 CFR § 70.8(a) and (c).
(5) The DEQ complies with 40 CFR § 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 CFR § 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 CFR § 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]