OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION

MEMORANDUM **August 19, 2019**

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

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

THROUGH: Ryan Buntyn, P.E., Existing Source Permits Section

FROM: Ge Li, P.E., Engineering Section

SUBJECT: Evaluation of Permit Application No. **2015-1352-C (M-3) PSD**
Plains Marketing LLC
Cushing Terminal Crude Oil Storage Facility
Facility ID: 2103
Section 23, T17N, R5E, Lincoln County, Oklahoma
Latitude: 35.93765º and Longitude: - 96.74907º
Directions: From Cushing (Intersection of Highway 33 and Linwood Street), south 3.5 miles, east into facility.

SECTION 1. INTRODUCTION

Plains Marketing LLC has submitted an application to construct an additional forty-seven (47) 270,000-barrel (bbl) external floating roof (EFR) crude oil storage tanks at the Cushing Terminal Crude Oil Storage Facility in Lincoln County, Oklahoma. The facility will fall under North American Industrial Classification (NAIC) code 486110 - Pipeline Transportation of Crude Oil. The proposed tanks will be subject to New Source Performance Standards (NSPS) Subpart Kb.

The facility is a listed Prevention of Significant Deterioration (PSD) major source, a crude oil storage facility exceeding 300,000-bbl storage capacity with current permitted emissions in excess of 100 TPY. Total project VOC emissions increase is estimated at 464.22 TPY. Therefore, the application requires a full PSD review.

Potential emissions of any single Hazardous Air Pollutant (HAP) are less than 10 TPY, and potential emissions of total HAP are less than 25 TPY. Therefore, the facility will be considered an area source of HAP emissions.

SECTION II. PROCESS DESCRIPTION

This facility is designed and operated for the primary purpose of storing and loading organic liquids into and out of storage tanks. Crude oil enters and leaves the station through multiple pipelines (with a small additional volume brought in by truck). The cumulative throughput

capacity of all storage tanks, when completed, will be 808 million barrels (MMbbl) per year. Following is a full list of equipment at the Cushing Terminal Crude Oil Storage Facility upon completion:

- fourteen (14) 100,000-bbl external floating roof (EFR) tanks (EUG 1),
- four (4) 150,000-bbl EFR tanks (EUG 2),
- twenty (20) 250,000-bbl EFR tanks (EUG 3),
- twelve (12) 570,000-bbl EFR tanks, seven (7) 270,000-bbl EFR tanks, and two (2) 380,000-bbl EFR tanks (EUG 5),
- thirty five (35) 270,000-bbl EFR tanks (EUGs 6, 7, and 9),
- two (2) 1,000-bbl internal floating roof (IFR) tanks (EUG 8),
- forty-seven (47) 270,000-bbl EFR tanks (EUG 10),
- associated piping, metering, and electric pumps, and,
- six (6) emergency generators and two (2) water pump engines.

SECTION III. EQUIPMENT

The proposed tanks, along with the existing tanks, are the primary sources of terminal emissions. Emissions from fugitive piping components are also present at the terminal. Emissions from these tanks are passively controlled through the use of EFR.

Emission Units (EUs) have been grouped into Emission Unit Groups in the following outline. The EUG10 tanks will consist of two tracts - the Payne County East Manifold (EUG 10a) and Osage Manifold (EUG 10b). The two tracts are approximately one mile apart. The Osage Manifold will serve 17 tanks and the Payne County East Manifold 30 tanks according to the construction plan.

Table 1. Fugitive Emission Sources*

EUG	EU ID#	Source	# Items
FUG	F-1	Pump Seals	369
	F-2	Valves 2” or larger	1,987
	F-3	Flanges 2” or larger	4,736
	F-4	Open ended valves	200
	F-5	Threaded, tubing, Dresser, VIC, and Roll-a-grip connections 2” or larger	1,174
	F-6	Other (Packing seals, drip pans, sumps)	513

* Including additional fugitive components associated with the project based on a scaled value from the current facility throughput.

Table 2. Emergency Generators and Pump Engines

EUG	EU	Make/Model	HP	Fuel	Manufacture Date	Install Date
GEN	GEN1	Kohler 80 REZG	150	Propane	Dec-2009	July-2010
	GEN2	Kohler 45 RZG	75		Dec-2005	Apr-2006
	GEN3	Generac SGO150	230		Sept-2013	Jan-2014
	GEN6	Generac SG150	201		Sept-2016	Nov-2016
	GEN7	Generac SG130	174		Feb-2017	Mar-2017
	GEN4	Cummins 6BTA5.9-F	208	Diesel	Sept-1992	2002
	P1	Cummins 6BTA5.9-F1	208		Sept-1992	1993
	P2	John Deere 6135HF485	600		June-2010	2010

Table 3 on the following pages list the characteristics of the storage tanks.

Table 3. Existing Storage Tanks

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
1	100	Crude Oil	EFR	100,000	1993
	200	Crude Oil	EFR	100,000	1993
	300	Crude Oil	EFR	100,000	1993
	400	Crude Oil	EFR	100,000	1993
	500	Crude Oil	EFR	100,000	1993
	600	Crude Oil	EFR	100,000	1993
	700	Crude Oil	EFR	100,000	1993
	800	Crude Oil	EFR	100,000	1993
	900	Crude Oil	EFR	100,000	1993
	1000	Crude Oil	EFR	100,000	1993
	1100	Crude Oil	EFR	100,000	1993
	1200	Crude Oil	EFR	100,000	1993
	1300	Crude Oil	EFR	100,000	1993
	1400	Crude Oil	EFR	100,000	1993
2	1500	Crude Oil	EFR	150,000	1993
	1600	Crude Oil	EFR	150,000	1993
	1700	Crude Oil	EFR	150,000	1993
	1800	Crude Oil	EFR	150,000	1993

[1]EFR = External Floating Roof IFR = Internal Floating Roof

Table 3 (continued). Existing Storage Tanks

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
3	1900	Crude Oil	EFR	250,000	1997
	2000	Crude Oil	EFR	250,000	1997
	2100	Crude Oil	EFR	250,000	1997
	2200	Crude Oil	EFR	250,000	1997
	2300	Crude Oil	EFR	250,000	2002
	2400	Crude Oil	EFR	250,000	2002
	2500	Crude Oil	EFR	250,000	2002
	2600	Crude Oil	EFR	250,000	2002
	2700	Crude Oil	EFR	250,000	2003
	2800	Crude Oil	EFR	250,000	2003
	2900	Crude Oil	EFR	250,000	2003
	3000	Crude Oil	EFR	250,000	2005
	3100	Crude Oil	EFR	250,000	2003
	3200	Crude Oil	EFR	250,000	2003
	3300	Crude Oil	EFR	250,000	2003
	3400	Crude Oil	EFR	250,000	2005
	3500	Crude Oil	EFR	250,000	2003
	3600	Crude Oil	EFR	250,000	2003
	3700	Crude Oil	EFR	250,000	2005
	3800	Crude Oil	EFR	250,000	2005

[1]EFR = External Floating Roof IFR = Internal Floating Roof

Table 3 (continued). Existing Storage Tanks

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
	3900	Crude Oil	EFR	570,000	2006
	4000	Crude Oil	EFR	570,000	2006
	4100	Crude Oil	EFR	570,000	2006
	4200	Crude Oil	EFR	570,000	2006
	4300	Crude Oil	EFR	570,000	2006
	4400	Crude Oil	EFR	570,000	2006
	5000	Crude Oil	EFR	570,000	2009
	5100	Crude Oil	EFR	570,000	2009
	5200	Crude Oil	EFR	570,000	2009
	5300	Crude Oil	EFR	570,000	2009
5	5400[2]	Crude Oil	EFR	270,000	2016
	5500[2]	Crude Oil	EFR	270,000	2016
	7200[2]	Crude Oil	EFR	270,000	2017
	7300[2]	Crude Oil	EFR	270,000	2017
	3950[2]	Crude Oil	EFR	380,000	2017
	4350[2]	Crude Oil	EFR	380,000	2017
	7400[2]	Crude Oil	EFR	270,000	2017
	7500[2]	Crude Oil	EFR	270,000	2017
	7700[2]	Crude Oil	EFR	270,000	2017
	11800[2]	Crude Oil	EFR	570,000	TBD
	11900[2]	Crude Oil	EFR	570,000	TBD

[1]EFR = External Floating Roof IFR = Internal Floating Roof
[2]Construction of these tanks was authorized in Permit No. 2003-104-C (M-4) PSD. Tanks 5400, 5500, 7200, and 7300 were constructed as 270,000-bbl tanks instead of 570,000-bbl tanks. Tanks 3950 and 4350 were constructed as 380,000-bbl tanks instead of 570,000-bbl tanks. Tanks permitted as 11500 through 11700 were renamed 7400, 7500, and 7700 in Permit No. 2015-1352-TVR (M-2) and they were constructed as 270,000-bbl tanks instead of 570,000-bbl tanks.

Table 3 (continued). Existing Storage Tanks

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
6	4500	Crude Oil	EFR	270,000	2010
	4600	Crude Oil	EFR	270,000	2010
	4700	Crude Oil	EFR	270,000	2010
	4800	Crude Oil	EFR	270,000	2010
7	7000[3]	Crude Oil	EFR	270,000	2012
	7100[3]	Crude Oil	EFR	270,000	2012
8	265274	Crude Oil	IFR	1,000	2013
	265275	Crude Oil	IFR	1,000	2013

[1]EFR = External Floating Roof IFR = Internal Floating Roof
[3]Authorized in Permit No. 2003-104-C (M-4) (PSD) to be constructed as 300,000-bbl tanks.

Table 3 (continued). Existing Storage Tanks

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
9	4850	Crude Oil	EFR	270,000	2010
	4900	Crude Oil	EFR	270,000	2010
	5600	Crude Oil	EFR	270,000	2010
	5700	Crude Oil	EFR	270,000	2010
	5800	Crude Oil	EFR	270,000	2010
	5900	Crude Oil	EFR	270,000	2010
	6000	Crude Oil	EFR	270,000	2010
	6100	Crude Oil	EFR	270,000	2011
	6200	Crude Oil	EFR	270,000	2011
	6300	Crude Oil	EFR	270,000	2011
	6400	Crude Oil	EFR	270,000	2011
	6500	Crude Oil	EFR	270,000	2011
	6600	Crude Oil	EFR	270,000	2011
	6700	Crude Oil	EFR	270,000	2011
	6800	Crude Oil	EFR	270,000	2011
	6900	Crude Oil	EFR	270,000	2011
	4950	Crude Oil	EFR	270,000	2012
	1810	Crude Oil	EFR	270,000	2013
	1610	Crude Oil	EFR	270,000	2014
	1710	Crude Oil	EFR	270,000	2014
	1720	Crude Oil	EFR	270,000	2015
	1730	Crude Oil	EFR	270,000	2015
	1820	Crude Oil	EFR	270,000	2015
	1830	Crude Oil	EFR	270,000	2015
	1840	Crude Oil	EFR	270,000	2015
	1740	Crude Oil	EFR	270,000	2016
	1750	Crude Oil	EFR	270,000	2016
	1850	Crude Oil	EFR	270,000	2016
	1620	Crude Oil	EFR	270,000	2016

[1]EFR = External Floating Roof IFR = Internal Floating Roof

Table 4. Proposed New Storage Tanks and Estimated Annual Throughput

EUG ID#	EU ID#	Contents	Roof Type*	Capacity (bbl)	Construction/Installation Date
10a	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000,	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New

*EFR = External Floating Roof

Table 4 [Continued]. Proposed New Storage Tanks and Estimated Annual Throughput

EUG ID#	EU ID#	Contents	Roof Type*	Capacity (bbl)	Construction/Installation Date
10b	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New

*EFR = External Floating Roof

SECTION IV. EMISSIONS

The only emissions of consequence at this facility are VOCs and HAPs contained therein. The existing facility-wide total VOC emissions (tanks EUG 1 through EUG 9, associated fugitives, emergency generators, and water pump engines) are limited to no more than 437.35 tons in any 12-month. With the proposed tanks in EUG 10a and EUG 10b, total project VOC emission increase is estimated to be 464.22 TPY, including 285.83 TPY increase for proposed tanks breathing and working losses, 173.69 TPY for proposed tanks roof landing losses, and 0.92 TPY increase for additional fugitive components. Plains requests that there be no throughput or RVP limits for individual tanks. Vapor pressure should only be limited by the maximum allowable vapor pressure under NSPS Subpart Kb (76.6 kPa, or 11.1 psia).

Requested emission increases from the breathing and working losses for the proposed forty-seven (47) additional 270,000-bbl EFR tanks were estimated using the EPA Tanks 4.0.9d program, assuming 24 turnover and throughput of 6,445,918-bbl per tank per year. A representative crude oil Reid vapor pressure [RVP] of 8.0 psia was selected in the Tanks 4.0.9d program. This is a change from the average RVP of 5.0 psi that has been used in previous permits due to the significant growth in unconventional oil production in recent years that tends to have higher vapor pressures.

Table 5. Emission for Storage Tanks Breathing and Working Losses

Throughput (bbl/yr)	Breathing Losses (lb/yr)	Working Losses (lb/yr)	Emissions per Tank (TPY)	Total Emissions (TPY)
6,445,918	10,822.16	1,301.57	6.06	285.83

However, for the purpose of BACT analysis for standing and working losses, Plains has chosen the worst-case scenario where the potential emissions from the proposed tanks are estimated using maximum turnover of 486 and maximum annual throughput of 130.53 MMbbl per tank based on tank pump capacity, so that the proposed tanks will not have individual tank limit resulting from BACT analysis. Please see Section VI. PSD review for BACT analysis for breathing and working emissions associated with the proposed tanks.

Table 6. Storage Tanks Breathing and Working Losses (BACT Only)

Throughput per Tank (bbl/yr)	Breathing Losses per Tank (TPY)	Working Losses per Tank (TPY)	Total Emissions per Tank (TPY)
130.53 MM	5.36	13.10	18.47

Emission estimation for proposed tanks roof landing losses due to change of service was estimated using crude oil RVP 8, average two (2) landings per tank per year.

Table 7. Emission for Storage Tanks Roof Landing Losses

Average Landings per Tank (tons)	Tanks	Average Landings per Tank (annually)	Total Estimated Landing Losses (tpy)
1.888	47	2	173.69

Based on the construction plan, the EUG 10 tanks will consist of two tracts - the Payne County East Manifold (EUG 10a) and Osage Manifold (EUG 10b). The EUG 10a will serve 30 tanks and the EUG 10b 17 tanks. The two tracts are approximately one mile apart; therefore, the two tracts will be reviewed for BACT analyses separately. The tank number at Payne County East Manifold (EUG 10a) has to be reduced by one to give enough space to fit in the BACT control device.

Plains has requested not to have landing event limits for individual tank. Therefore, the cost analyses are based on total emissions from each group of tanks as being emitted from a single tank. This will allow the facility to utilize a “group” limit. Please see Section VI. PSD review for BACT analysis for roof landing emissions associated with the proposed tanks.

All of the crude coming through the Cushing Terminal is weathered or "dead." Nothing comes into the Cushing Terminal directly from any production well or site. It has therefore been determined that it is appropriate to use TCEQ emission factors for Crude Oil Pipeline Facilities / Oil and Gas Heavy Oil factors to estimate fugitive emissions. Number of each component and type of service are estimated a scaled value from the current facility. Table 8 below details fugitive emission estimates.

Table 8. Post-Modification Fugitive Emissions

EU ID# - POINT ID #	Source	# Items	VOC Emissions*
			TPY
F-1	Pump Seals	369	1.78
F-2	Valves 2” or larger	1,987	0.16
F-3	Flanges 2” or larger	4,736	0.017
F-4	Open ended valves	200	0.27
F-5	Threaded, tubing, Dresser, VIC, and Roll-a-grip connections 2” or larger	1,174	0.087
F-6	Other (Packing seals, drip pans, sumps)	513	0.16
Total			**2.47****
Increase from Additional Fugitive Components			**0.92**

* Includes methane and ethane.
* *Estimate only, not an emission limit.

HAZARDOUS AIR POLLLUTANTS

HAP emission estimates for this facility were estimated using the TANKS 4.09d program and AP-42 calculation method for roof landing emissions, which are listed in Table 9 below. Applicant didn’t request emissions changes for the existing tanks. The estimates for proposed tanks are based upon:

- TANKS 4.09d software
- Forth-seven (47) 270,000-bbl EFR tanks with 6,445,918-bbl/yr throughput each tank
- Crude 8.0 RVP
- API crude oil speciation factors

Table 9. Hazardous Air Pollutants

HAP	Existing Tanks	Proposed Tanks (W/B)	Proposed Landing Losses	Fugitive HAPs Losses	Total Annual Emission
	TPY	TPY	TPY	TPY	TPY
n-Hexane	4.91	1.63	0.95	0.004	7.49
Benzene	4.71	1.57	0.86	0.006	7.14
Iso-octane [2,2,4-trimethyl pentane]	0.44	0.11	0.07	0.001	0.63
Toluene	2.83	0.97	0.39	0.009	4.20
Ethyl benzene	0.60	0.21	0.05	0.004	0.86
Xylene	1.96	0.69	0.15	0.013	2.80
Cumene [Isopropyl benzene]	0.11	0.04	0.01	0.001	0.16
Total	**15.57**	**5.22**	**2.47**	**0.038**	**23.28**

SECTION V. INSIGNIFICANT ACTIVITIES

The insignificant activities identified in the application are duplicated below.

1. Activities having potential emissions of less than 5.0 TPY.
2. Future remediation including, but not limited to, Part 1B listings.
3. Portable water/soil treatment equipment including, but not limited to, air strippers, filtration units, and chemical/biological units.
4. Emergency mainline relief vessel, which is emptied immediately after use.
5. Periodic tank cleaning.
6. Occasional tank and pipe painting.

SECTION VI. PSD REVIEW

The applicant has requested that this permit increase the facility-wide permitted emissions of VOC by 464.22 TPY including VOC emissions from proposed tanks working, breathing, and landing losses, and additional fugitive components, which exceeds the PSD Significant Emission Rate [SER] of 40 TPY, thus triggering PSD review for this listed PSD-major source. The facility is therefore subject to full PSD review for a significant emission increase of VOC.

The full PSD review consists of the following:

A. Determination of Best Available Control Technology (BACT);
B. Evaluation of existing air quality and determination of monitoring requirements;
C. Air Quality Impact Analysis;
D. Evaluation of source-related impacts on growth, soils, vegetation, and visibility; and
E. Evaluation of Class I area impacts.

A. Best Available Control Technology (BACT)

The PSD regulations require major stationary sources to apply Best Available Control Technology (BACT) to each emission unit which is subject to regulation under the Clean Air Act and which has the potential to emit air pollutants in significant amounts as defined by OAC 252:100-8-31.

Best Available Control Technology (BACT) is defined in OAC 252:100-8-31 as follows:

> *"…an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each regulated NSR pollutant which would be emitted from any proposed major stationary source or major modification which the Director, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combination techniques for control of such pollutant. In no event*

> *shall application of BACT result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR parts 60 and 61. If the Director determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the application of BACT. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation, and shall provide for compliance by means which achieve equivalent results."*

A BACT analysis is required to assess the appropriate level of control for each applicable emission unit/source for which the pollutant exceeds the applicable criteria pollutant PSD SER. This BACT analysis covers emissions of VOC.

The following methodology for performing a top-down BACT analysis has been developed from the US EPA's 1990 Draft New Source Review Workshop Manual - BACT Guidance. The analysis utilizes five key steps to identify the most suited BACT option for the project. The first step in this approach is to determine, for the emission unit in question, the most stringent control available for a similar or identical source or source category. If it is shown that this level of control is technically, environmentally, or economically infeasible for the unit in question, then the next most stringent level of control is determined and similarly evaluated. This process continues until the BACT level under consideration cannot be eliminated by any substantial or unique technical, environmental, or economic objections.

<u>Step 1: Identify Available Control Technologies</u>

Available control technologies are identified for each emission unit in question. The following methods are used to identify potential technologies: 1) researching the Reasonably Available Control Technology (RACT)/BACT/Lowest Achievable Emission Rate (LAER) Clearinghouse (RBLC) database, 2) surveying regulatory agencies, 3) drawing from previous engineering experience, 4) surveying air pollution control equipment vendors, and 5) surveying available literature. Potential technologies must control the regulated pollutant being evaluated and must have a practical application to the emission unit in question.

<u>Step 2: Eliminate Technically Infeasible Options</u>

After the identification of control options, an analysis is conducted to eliminate technically infeasible options. A control option is eliminated from consideration if there are process-specific conditions that prohibit the implementation of the control technology or if the highest control efficiency of the option would result in an emission level that is higher than any applicable regulatory limits, such as an NSPS.

Determining technical feasibility starts with evaluating the "availability" of the control technology. A control technology is available if it is applicable to the emission unit in question and has reached the licensing and commercial sales stage of development. In addition to being available, the control technology must also be applicable. A control technology is determined to not be applicable if any physical, chemical, and/or engineering principle would preclude the successful use of the control technology on the emission unit being evaluated. A control technology must be both applicable and available, or it is technically infeasible.

Step 3: Rank Remaining Control Options by Control Effectiveness

Once technically infeasible options are removed from consideration, the remaining options are ranked based on their control effectiveness. If there is only one remaining option, or all of the remaining technologies could achieve equivalent control efficiencies, ranking based on control efficiency is not required.

Step 4: Evaluate and Eliminate Control Technologies Based on Energy, Environmental, and Economic Impacts

Beginning with the most efficient control option in the ranking, detailed economic, energy, and environmental impact evaluations are performed. If a control option is determined to be economically feasible without adverse energy or environmental impacts, it is not necessary to evaluate the remaining options with lower control efficiencies.

The economic evaluation centers on the cost effectiveness of the control option. Costs of installing and operating control technologies are estimated following the methodologies outlined in the EPA's OAQPS Control Cost Manual (CCM) and other industry resources. Cost effectiveness is expressed as dollars per ton of pollutant controlled. Objective analyses of energy and environmental impacts associated with each option are also conducted. Both beneficial and adverse impacts are discussed and quantified.

The energy costs of the control technology are evaluated based on the energy benefit or penalty resulting from the operation of the control technology at the source. The environmental costs of the control technology are evaluated based on the overall air and non-air impacts to the environment. The economic costs of the control technology are evaluated based on the capital and annual operating costs of the control technology based on available parameters and assumptions. Monetary costs incurred to address any energy or environmental impacts are also addressed in this step. If a control technology is eliminated at this point then the next most effective control technology is evaluated, and the process continues until the control technology can't be eliminated due to high energy, environmental, or economical costs.

Step 5: Select BACT and Document the Selection as BACT

In the final step, one pollutant specific control option is proposed as BACT for each emission unit under review based on evaluations from the previous step. The resulting BACT standard is an emission limit unless technological or economic limitations of the measurement methodology

would make the imposition of an emissions standard infeasible, in which case a work practice standard can be imposed.

Emissions of VOC from the proposed tank construction are above the PSD significance thresholds; therefore, a BACT evaluation is required for VOC. The new emission units associated with the project for which a BACT analysis is required include the forth-seven (47) 270,000-bbl external floating roof crude oil storage tanks. The proposed storage tanks at the Cushing Terminal are subject to NSPS Subpart Kb standards and will primarily generate VOC emissions via normal operations (breathing and working losses) and during roof landings. The proposed BACT is required to be at least as stringent as, or more stringent than, the NSPS standards.

The following methodology for performing a top-down BACT analysis has been developed from the US EPA's 1990 Draft New Source Review Workshop Manual - BACT Guidance. The analysis utilizes five key steps to identify the most suited BACT option for the project.

Table 10. Summary of RBLC Results for Storage Tanks

Facility	RBLC#	Permit #	Issued Date	State	Equipment	VOC Emission Limit (TPY)	Control Technology
BPV – BPV Gathering and Marketing Cushing Station	OK-0176	2016-1247-C (PSD)	7/2017	OK	24 EFR Tanks	217.24 TPY for Operations and Landings, 0.82 TPY per Tank Landing, 10 Roof Landings per Year	Equipped with EFR, primary mechanical shoe seals, secondary seals, and drain-dry design.
Magellan – Pasadena Terminal	TX-0825	142261 AND N254	7/2017	TX	IFR Tanks	165 TPY for Operations. 26.28 TPY for Roof Landing and Refilling.	IFR equipped with a primary and secondary seal, painted white, and has drain dry floor design. Roof landings will be routed to control device with a 99.8% destruction efficiency. Refilling losses will be controlled by a portable vapor combustor with a 99.5% control efficiency.
Wildhorse – Wildhorse Terminal	OK-0175	2016-1066-C (PSD)	6/2017	OK	19 EFR Tanks	135.66 TPY for Operations. 21.15 TPY for Landings. 18.90 TPY for Cleaning.	Equipped with EFRs, primary mechanical shoe seals, secondary seals, and drain-dry design.
Loop LLC – Deepwater Complex	LA-0304	PSD-LA-796(M-1)	11/2016	LA	Six EFR Tanks	411.19 TPY for Operations 96.6 TPY for Landings 43.72 TPY for Cleaning	EFR and Roof Landings meet NSPS Subpart Kb. Cleaning done with limiting time durations.
Martin Operating – Corpus Crude Oil Terminal	TX-0800	103976	6/2016	TX	IFR Tanks	0.8 TPY for Landings and Cleaning	Vapor Combustor Unit (VCU) or Carbon Adsorption.
Phillips 66 – Beaumont Terminal	TX-0799	18295	6/2016	TX	68 EFR Tanks	384.37 TPY for Operations 28.83 TPY for landing, cleaning	Tanks Painted White and comply with NSPS Subpart Kb with mechanical shoe and rim-mounted secondary seal. Landing and cleaning controlled via portable VCU. Degassing within 24 hours of landing and tanks have dry drain design.
Nustar Logistics – Corpus Christi Terminal	TX-0797	32769	5/2016	TX	EFR Tanks	24.37 TPY per 400 MBBL Tank 18.57 TPY per 200 MBBL Tank	EFR following NSPS Subpart Kb.
CCI – Corpus Christi Condensate Splitter	TX-0756	116072	6/2015	TX	2 EFR Tanks	7.33 TPY for Operations and Landings	NSPS Subpart Kb with mechanical shoe and rim-mounted secondary seal. Dry drain design. Landings controlled by control device.
Enbridge Energy – Superior Terminal	WI-0261	13-DCF-129	6/2014	WI	EFR Tanks	10.56 TPY for Operations 3.53 TPY for Landings	NSPS Subpart Kb with dry drain design. Limits on number of landings and work practices on cleanings.
Valero Refining – New Orleans, LLC – St. Charles Refinery	LA-0265	PSD-LA-619(M-7)	10/2012	LA	EFR Tanks	Not Provided	EFR following NSPS Subpart Kb.

BACT Analysis for Storage Tanks Normal Operations

Step 1: Identify Available Control Technologies

Plains provided this BACT analysis for VOC emissions from the facility's normal tank operations and roof landing losses. A search of EPA's RBLC, a review of similar applications submitted to federal and state agencies, engineering experience, and review of industry literature was used in determining available BACT. The RBLC is a database made available to the public through the U.S. EPA's Office of Air Quality Planning and Standards (OAQPS) Technology Transfer Network (TTN), and lists technologies that have been approved in PSD permits as BACT for numerous process equipment. The purpose of the RBLC database search is to identify the emission control technologies and levels of VOC emissions that were determined by permitting authorities as BACT for floating roof tanks. The results of this search are listed below.

Table 11. Control Technologies for Normal Operations

Control Technologies
Routing Vapor Space to a Control Device
• Thermal Incinerator
• Flare
• Vapor Combustor
• Refrigerated Condenser
• Carbon Adsorption
Roof Selection
• EFRs, IFRs
• Fixed Roof
Seal Selection
• Double Seal
• Liquid, Mechanical Shoe
• Wiper
Submerged Fill
Good Operating and Maintenance Practices

Routing Vapor Space to a Control Device

Evaporative losses from tanks can be routed to a variety of control devices with varying destruction efficiencies. Combustion type controls, including flares, combustors, and incinerators, destroy VOCs with auxiliary fuel injection. Destruction efficiencies range from 98-99.9%, depending on the material. Adsorption technologies, which physically filter VOC, have capture efficiencies that range from 50-90%, depending on the material. Condensation techniques can achieve removal efficiencies above 90% relative to VOC composition and concentration in the emission stream. Refrigerated condensers are used as air pollution control devices for treating emissions streams with high VOC concentrations for sources such as gasoline bulk terminals.

Roof Selection

Fixed roof tanks – These tanks consist of a cylindrical steel shell with a permanently fixed roof that can be cone-shaped, dome-shaped, or flat. Evaporative losses occur in these tanks through vapor expansion and contraction and from working losses as filling vapors are expelled from the tank.

External floating roof tanks (EFRs) – These tanks consist of an open cylindrical steel shell with a roof, or deck, which floats on the surface of the stored liquid. The roof height changes with the liquid level of the material stored within the tank, effectively minimizing vapor space. A rim seal system is attached to the deck's perimeter and makes contact with the tank wall. These two systems combine to reduce VOC emissions from the stored material. Losses from these tanks originate from exposed liquid at the rim seal system and deck fittings. In addition to the basic tank configuration, there are several add-on options to further reduce emissions and are listed as follows:

- **Cone Roof Add-on with Vapor Space Routed to a Control Device**. This option would involve installing a fixed cone roof over the top of each tank at the terminal, thereby creating internal floating roof tanks from the previous EFR tank. The coned exterior roofs would be supported by columns that penetrate through the floating roof inside each tank. The fixed coned roof design acts to block the wind flow across the top of each tank and be part of a system to collect emissions coming out the top of the floating roof of each tank. A dedicated vapor collection system would be installed to route emissions from each tank to a dedicated control device as listed in the previous control technology category (Routing Vapor Space to a Control Device).

- **Cone Roof Add-on Only** – This option involves installing a fixed coned roof as in the previous option except without installation of a control device as discussed in the previous control technology category and associated collection piping. The primary function of the fixed external roof in this alternative would be to block the wind and decrease standing and withdrawal emissions from each tank. This option is estimated to provide a control efficiency of up to 4%.

- **Domed External Floating Roof** – This option involves constructing a self-supporting geodesic dome over the existing external floating roof on each tank at the terminal. Similar to the cone roof add-on option, geodesic domes are utilized to minimize the wind over the top of the external floating roof. The domed tanks are generally vented with circulation vents at the top of each roof. Emissions from each domed EFR tank would not be piped to a control device. Since the geodesic domes would be self-supporting, the installation of column supports penetrating through the floating roof would not be necessary and gaps in the floating roof would be minimized. This design is still referred to as an external floating roof because it utilizes the existing heavier-duty, double-sealed fully intact EFR, though for emission estimation purposes it is treated as an IFR with no support columns. This option is estimated to provide a control efficiency of up to 27%.

Internal floating roof tanks (IFRs) – These tanks are simply EFRs with an additional, fixed roof above the floating roof. The fixed roof serves as a vapor barrier and blocks air movement. Additionally, the internal floating roof tank deck is lighter than those used in external roof tanks. Losses from these tanks are the same as EFRs, with the exception that emissions induced by air movement are reduced for smaller tanks. IFRs have additional emissions from the additional roof penetrations. Tanks of this size (greater than 200 feet in diameter) typically have 22 support columns which increases emissions from IFRs.

Submerged Fill

Submerged loading can be accomplished using the bottom loading method. A bottom-loading fill pipe is permanently attached to the bottom of the tank, significantly controlling liquid turbulence. Subsequently, much lower vapor generation occurs than during splash loading, where the tank is filled from the top of the tank.

Good Operating and Maintenance Practices

Good operating and maintenance practices for normal operations include, but are not limited to, white paint color, routine inspections, and timely repairs.

Step 2: Eliminate Technically Infeasible Options

All control options are technically feasible. However, Plains has assumed NSPS Subpart Kb requirements to be the baseline requirement since NSPS Kb requires the use of EFR or IFR tanks. Therefore, fixed roof tanks are eliminated. Additionally, submerged fill is meaningless since there is no vapor space for splash loading to occur. Therefore, these are eliminated from further consideration.

Step 3: Ranking of Remaining Control Technologies by Control Effectiveness

Table 12. Rank of Control Technologies for Normal Operations

Rank	Options for Working and Breathing Losses	Reduction from Baseline
1	EFR w/ Cone Roof & VCU	98%
2	Geodesic Dome EFR	27%
3	EFR w/ Cone Roof Only	4%

In addition to control effectiveness and emissions considerations, each BACT option must also be evaluated for economic impacts, environmental, and energy impacts. These considerations are further discussed in Step 4.

Step 4: Evaluate Most Effective Controls Based on Energy, Environmental, and Economic impacts

The economic consideration for each remaining BACT option is based on a cost analysis, in part, total capital costs, direct costs, and total derived annualized cost. The cost analysis was based on industry cost estimates for similar tanks constructed in Cushing and EPA's Cost Control Manual. Note, sizing of the vapor combustion device depends on the hourly rate of controlled VOC, and annual operating costs (utilities, pilot fuel, etc.) vary based on mode of operation (e.g. continuously for normal operations and intermittently for landings and cleanings).

Potential emissions from the breathing and working losses for the proposed forty-seven (47) additional 270,000-bbl EFR tanks were estimated using the EPA Tanks 4.0.9d program, tank volume of 11,280,358 gallons per year, and maximum turnover of 486 based on pump capacity. Maximum annual throughput is 130.53 MMbbl per tank and 6,134.9 MMbbl for the proposed new tanks in EUG 10. A representative crude oil Reid vapor pressure [RVP] of 8.0 psia was selected in the Tanks 4.0.9d program.

Table 13. Emission for Storage Tanks Breathing and Working Losses

Throughput per Tank (bbl/yr)	Breathing Losses per Tank (TPY)	Working Losses per Tank (TPY)	Total Emissions per Tank (TPY)
130.53 MM	5.36	13.10	18.47

Table 14. Emissions for Breathing and Working Losses per Tank for BACT Options

Tank	Baseline Option	EFR w/ Cone Roof & VCU	Geodesic Dome EFR	EFR w/ Cone Roof Only
270,000 BBL	18.47 TPY*	0.37 TPY	13.48 TPY	17.73 TPY

* Baseline emission being the potential emissions of the proposed 270,000-bbl EFR tanks.

Table 15. Initial Costs (Storage Tanks – Normal Operations)

Proposed Tanks		EFR w/Cone Roof & Vapor Collection		Geodesic Dome EFR		EFR w/Cone Roof	
Capacity	Qty.	Cost/Tank	Total Cost	Cost/Tank	Total Cost	Cost/Tank	Total Cost
270,000	47	$1,200,000	$56,400,000	$900,000	$42,300,000	$1,100,000	$51,700,000

Table 16. Cost Effectiveness of Controls for Breathing and Working Losses

	EFR w/Cone Roof & Vapor Collection	Geodesic Dome EFR	EFR w/Cone Roof
Purchased Equipment Costs			
Tank roofs	$ 1,200,000.00	$ 900,000.00	$ 1,100,000.00
VCU	$ 303,870.00	--	--
Piping from Tanks to VCU	$ 35,000.00	--	--
Direct Costs			
Total Capital Investments	$ 1,538,870.00	$ 900,000.00	$ 1,100,000.00
Annual Operating Costs	$ 218,049.30		
Annualized Cost Estimation			
Interest	6%	6%	6%
Equipment life (yr)	15	15	15
Total Annual Costs	$ 376,552.61	$ 92,700.00	$ 113,300.00
Emissions Reduction			
Baseline emissions (TPY)			
Breathing/working	18.47	18.47	18.47
Control Efficiency	98%	27%	4%
Emissions Reduced TPY	18.10	4.99	0.74
BACT Cost ($/Ton Reduced)	**$ 20,804.01**	**$ 18,577.15**	**$ 153,108.11**

As shown in Table 16, the lowest available cost per ton reduced is approximately $ 18,577.15. This value represents a significant economic impact. Due to the extremely high and unreasonable economic impact for each of these BACT options, they are inappropriate BACT alternatives beyond the baseline NSPS Subpart Kb standards for new tanks.

Environmental and energy impacts from the EFR with cone roof & vapor collection option are as follows: increase in NOx emissions, increase in CO emissions, noise, and fuel consumption. The other control options evaluated have no considerable environmental or energy impacts. However, since the economic impacts for each of the options are unreasonably high, these impacts were not further considered.

Step 5: Select BACT and Document the Selection as BACT

Plains has proposed to implement the following design elements and work practices:

- External floating roof compliant with NSPS Subpart Kb standards,
- Primary mechanical shoe seal and secondary seal, and
- Good operation and maintenance practices as set forth by NSPS Subpart Kb.

DEQ evaluated the BACT proposal from Plains and agrees that their BACT proposal is acceptable. The chosen level of BACT is consistent with findings from EPA's RBLC for similar conditions and operations. The clearinghouse listed several facilities (e.g. RBLC IDs OK-0176, TX-0825, and OK-0175) with crude oil storage tanks. Recent analysis of similar sources has shown consolidating control devise does not result in significant cost savings.

BACT Analysis for Storage Tanks Roof Landings

Step 1: Identify Available Control Technologies

Table 17. Control Technologies for Landings

Control Technologies
Routing Vapor Space to a Control Device • Thermal Incinerator • Flare • Vapor Combustor • Refrigerated Condenser • Carbon Adsorption Mobile Degassing • Thermal Oxidizer • Carbon Adsorption Drain-Dry Design Submerged Fill Good Operating and Maintenance Practices

Routing Vapor Space to a Control Device

In addition to the discussion in the BACT analysis for Storage Tanks – Normal Operations (Breathing and Working Losses), **over the top fixed vapor collection** is another option that involves installing a fixed (or permanent) vapor collection line going over the top of the side wall of each EFR tank at the terminal. The line would go through the existing external floating roof to collect emissions from the vapor space formed underneath the floating roof as it lands. The use of this option would only be good during landing events when a vapor space is created. During other times, the tank would be filled with liquid and the line would be submerged underneath the floating roof. Vapors that are collected would be piped to a common control device at the site. A vapor combustor device would be the chosen control device to control volatile emissions from tanks at the site. The implementation and operation of this effort would be led by site personnel. In addition to the operation and maintenance of the vapor collection device that runs over the top of each tank, operators at the site would also be responsible for the maintenance and operation of the thermal oxidizer.

Mobile Degassing

Mobile degassing units are an alternative to running a fixed line to each tank. The units are portable and can be utilized during individual emissions events. The vapors generated during activities such as tank landings would be evacuated out of the vapor space in the tank and

collected by the units. The gases collected are treated by a control device (e.g., carbon adsorber or thermal oxidizer). Efficiencies in excess of 95% are estimated by vendors.

Drain-Dry Design
Drain-dry design is the construction of the tank bottom with a slope which drains the liquid contents to the sump or sumps when liquid levels fall below the pipe outlet. The amount of remaining liquid is minimized during tank draining. Design may be cone-up, where the liquid drains to multiple sumps around the perimeter, or cone-down, typically with a single sump in the center of the tank.

Submerged Fill
See discussion in the BACT analysis for Storage Tanks – Normal Operations (Standing and Withdrawal Losses).

Good Operating and Maintenance Practices
NSPS Subpart Kb requires that the process of filling, emptying, and refilling be continuous and completed as rapidly as possible.

Step 2: Eliminate Technically Infeasible Options

All control options are technically feasible. These options are further considered in the following steps of the top-down BACT analysis.

Step 3: Ranking of Remaining Control Technologies by Control Effectiveness

Drain dry design reduces the emissions associated with landing and cleaning events by reducing the amount of material remaining on the bottom of the tank subject to volatilization. Good operating and maintenance practices do not reduce emissions associated with individual emissions events, but instead limit event frequency and duration, decreasing potential emissions. Since these tanks will be handling crude oil and not refined products, most landings associated with changes of service can occur while keeping the roof floated and mixing the two crudes with the remaining stock/bottoms. For instances where a brief landing is required, the difference in emission rates between drain-dry tanks and partial heal tanks is negligible. Drain-dry tanks start providing more significant benefits whenever tanks are not landed and refilled in a continuous manner, such as preparing for a tank cleaning.

Routing the vapor space to a control device or mobile degassing units reduces emissions from landings and cleaning events more or less effectively depending on the destruction technology used.

Table 18. Ranking of Control Technology Options for Landings

Rank	Options for Roof Landing Losses	Reduction from Baseline
1	Over the Top Fixed Vapor Collection	98%
2	Mobile Degassing and Vapor Collection	98%

The forty-seven (47) tanks are drain-dry floating roof tanks. During normal operation, a floating roof is in contact with the liquid inside the tank, reducing evaporative losses. However, when the tank is emptied to the point that the roof lands on its deck legs, a vapor space is created. After the roof is landed, evaporative losses occur during idle standing and subsequent filling.

Plains proposed external floating roof tanks with drain-dry design. For a conservative estimate, VOC emissions from roof landings were calculated using AP-42 (11/06), Section 7.1 for external floating roof tank with a liquid heel. It is assumed two landings per tank per year. In Equation 2-10, roof landing emissions are the sum of standing idle losses during each roof landing episode and filling losses during each roof landing episode.

Standing idle losses for each roof landing event were calculated based on Equation 2-19 as follows:

$L_{SLwind} = 0.57\ n_d\ D\ P^*\ Mv$

Where:

L_{SLwind} = daily standing idle loss due to wind, 572 lbs per day
n_d = number of days that the tank is standing idle, 1 days
D = tank diameter, 200 ft
P* = a vapor pressure function, dimensionless (0.100)
Mv = stock vapor molecular weight, 50 lb/lb-mole

Filling losses were calculated for each roof landing event based on Equation 2-28, as follows:

$L_{FL} = \left(\frac{P\ Vv}{R\ T}\right) M_V\ (C_{sf}\ S)$

Where:

L_{FL} = filling loss during roof landing, 3,203 lbs per day,
P = true vapor pressure of the liquid within the tank, 4.77 psia,
V_V = volume of the vapor space, 157, 080 ft^3,
R = ideal gas constant, 10.731 psia-ft^3/(lb-mol-°R),
T = average temperature of the vapor and liquid below the floating roof, 511.82 °R,
M_v = stock vapor molecular weight, 50 lb/lb-mol,
S = filling saturation factor, dimension less (0.50 for a partial liquid heel),
C_{sf} = correction factor to the saturation factor, dimensionless (0.94)

The emissions summary for BACT options for landing losses is summarized in the following table. Baseline emissions are based on two landings per tank per year. The tons of VOC reduced are conservatively estimates as the control efficiency multiplied by the baseline emission rate assuming 100% capture efficiency for destruction controls.

Table 19. Emissions for Landing Losses per Tank for BACT Options

Tank	Baseline Option	Over the Top Fixed Vapor Collection	Mobile Degassing with Vapor Collection
270,000 BBL	3.776 TPY	0.076 TPY	0.076 TPY

In addition to control effectiveness and emissions considerations, each BACT option must also be evaluated for economic impacts, environmental, and energy impacts. These considerations are further discussed in Step 4.

Step 4: Evaluate Most Effective Controls Based on Energy, Environmental, and Economic impacts

As with the BACT analysis for Normal Operations (Working and Breathing Losses), Plains has assumed NSPS Subpart Kb requirements to be the baseline requirement since NSPS Subpart Kb requires an EFR or IFR roof. The economic consideration for each remaining BACT option is based on an itemized cost analysis. Expenses associated with the control options include tank construction, combustion equipment, and annual operating costs. The following tables present the cost analysis for each of the control options.

In order to avoid a “per tank” landing event limit, Plains conducted the cost analyses with total “group” emissions as being emitted from a single tank.

Table 20. Cost Estimates for Over the Top Fixed Vapor Collection

Over the Top Fixed Vapor Collection	
Project Total Costs (1)	
Engineering	$1,550,000
Earth Work	$155,000
Civil Construction	$5,000,000
Mechanical Construction	$13,586,369
Pump Equipment	$946,000
Meter Equipment	$240,000
Pipe (Materials)	$6,719,142
Electrical Construction	$1,773,750
Programming	$189,200
Control Equipment	$241,230
Buildings	$946,000

Over the Top Fixed Vapor Collection	
Permits	$59,125
Plains Labor	$449,350
Inspection	$4,200,000
Pipeline & Facility Total	$38,893,166.38
Contingency	$3,889,316.64
Capitalized Interest	$1,108,052
Total	**$43,890,534.71**

(1) Project cost estimates are provided by Plains Cushing Terminal Project Manager for both tracts.

The Payne County East Manifold (EUG 10a) will serve 30 tanks and the Osage Manifold (EUG 10b) will serve 17 tanks and according to the construction plan. The tank number at Payne County East Manifold tract has to be reduced by one to give enough space to fit in the vapor combustor. Plains engineer estimates a rough cost of $1,000,000 for each combustor. The rest of project costs are apportioned for the two tracts based on the number of tanks served.

Table 21. Landings Cost Analysis for Over the Top Fixed Vapor Collection

Over the Top Fixed Vapor Collection		
EUG10	**Payne County East Manifold**	**Osage Manifold**
Project Total Costs		
$43,890,534.71		
Annualized Cost Estimation		
Total Capital Investment (1)	$27,408,900	$16,481,050
Interest	6%	6%
Equipment Life (yrs)	15	15
Capital Recovery Factor	0.1030	0.1030
Total Annual Costs	$2,823,117	$1,697,552
Emissions Reduction		
Baseline Emission (TPY) (2)	109.504	64.192
Control Efficiency	98%	98%
Emissions Reduced (TPY)	107.31	62.91
BACT Cost ($/ton)	**$26,297.58**	**$26,974.79**
Environmental Impacts	Additional NOx and CO emissions	Additional NOx and CO emissions
Energy Impacts	Fuel Consumption	Fuel Consumption

(1) Baseline emissions are estimated based on two landings per tank per year. All landings for each tank group are shown occurring at a single tank.

Mobile degassing cost is per landing event basis and cost estimates are provided by the vendor GEM. According to the vendor quote, the estimated costs occur during the refill step. Plains stated that the standing idle step is normally not controlled due to the unpredictable number of

days and relative small amount of emissions. Costs are broken down into mobilization/demobilization, combustion device, portable electrical generator, trucks, hose, and per diem for a crew of 4. The vendor quote was classified as confidential information and therefore, therefore details are not listed in the table below.

Table 22. Landings Cost Analysis for Mobile Degassing

	Mobile Degassing
Total Costs per Landing	$20,690
Baseline Emission (TPY)	1.89
Control Efficiency	98%
Emissions Reduced (TPY)	1.85
BACT Cost ($/ton)	**$ 11,183.78**
Environmental Impacts	Additional NOx and CO emissions
Energy Impacts	Fuel Consumption

As shown in Table 22, the cost effectiveness values for over the top fixed vapor collection (option 1) are $26,297.58 per ton reduced for Payne tract and $26,974.79 per ton reduced for Osage tract, which are considered not economically feasible.

BACT option 2, or the mobile degassing unit, to control landing losses emissions is similar to the previous option because it also utilizes a vapor collection and control system. However, this option is different because it is mobile and not a consistent control for each and every tank. The degassing unit would need to be mobilized for each landing event. This BACT option represents an approximate value of $11,183.78 per ton of VOC reduced. Environmental impacts associated with this option would include additional pollutants (NOx, PM, and CO) from a mobile thermal oxidizer and a power generator. Availability of mobile degassing and control units in the Oklahoma area is a significant issue. Long-distance mobilization of degassing equipment and a crew would be required for each landing event at the Cushing Terminal. The terminal's operational demands will also require landing tanks on short notice which is another prohibiting factor for use of this BACT option. Therefore, the use of the mobile degassing unit to control landing losses does not represent an option that would be appropriate given consideration of overall economic, environmental, and energy impacts.

Step 5 - Select BACT and Document the Selection as BACT

Plains proposes the following design elements and work practices as BACT:

- Drain-dry design, and
- Good operation and maintenance practices in accordance with NSPS Subpart Kb, such as the completion of filling, emptying, and refilling in a 'continuous' manner. Tanks will be completely drained for landing events not completed in a continuous manner.

DEQ evaluated the BACT proposal from Plains and agrees that their design elements, emission limts, and work practices are acceptable as BACT. The chosen level of BACT is consistent with findings from EPA's RBLC for similar conditions and operations.

As mentioned previously, the resulting BACT standard is an emission limit unless technological or economic limitations of the measurement methodology would make the imposition of an emissions standard infeasible, in which case a work practice or operating standard can be imposed. For the proposed storage tanks in EUG10, DEQ selects a BACT VOC emission limit of 109.504 TPY for all EUG 10a tanks and 64.192 TPY for all EUG 10b tanks.

B. Air Quality Impacts Analysis

Ozone (O_3) Monitoring

Pre-construction monitoring for ozone is required for any new source or modified existing source located in an unclassified or attainment area with greater than 100 tons per year of VOC emissions. Continuous ozone monitoring data must be used to establish existing air quality concentrations in the vicinity of the proposed source or modification.

The siting guidance for ozone monitors in the "Ambient Monitoring Guidelines for Prevention of Significant Deterioration", EPA-450/4-87-007, is less prescriptive than the guidance for primary pollutants. The guidance provides that, where the NO interactions may be minimal, the travel time to expected maximum ozone concentrations may be 3 to 4 hours downwind; but "in general, the downwind distance for the maximum ozone site should not be more than 15 to 20 miles from the source because a lower wind speed (2-3 miles per hour) with less dilution would be a more critical case." Reviewing wind roses from met stations in Cushing, Stillwater, and Oilton, wind speeds are generally greater than a minimum of 5 miles per hour with primary flow vectors (blowing to) ranging between NW and NE.

The nearest existing ozone monitoring site is the Tulsa West site, 40-037-0144 at 25 miles NE of the proposed project. The current ozone design value for Tulsa West is 0.065 ppm.

The Tulsa West monitoring site is part of the Tulsa Metropolitan Statistical Area and would be impacted by pollution from urban area sources and significant individual point sources. Ozone concentrations measured at this site should be considered conservative for the community of Cushing and the surrounding area including the crude oil tank farms. This determination is corroborated by the fact that the terrain in both areas is relatively flat, emission inventories and photochemical modeling[1] has shown the area to be NO_X limited and there are no significant NO_X emission sources in or around Cushing. While Cushing has a large number of crude oil storage tanks and associated VOC emissions, due to the relative scarcity of NO_X emissions, increases in VOC are not expected to significantly impact ozone concentrations. Therefore, use

[1] Ramboll Environ US Corporation. 2015Assessment of the Ozone Impacts Associated with New Emissions from Tinker Air Force Base in Oklahoma City.

of the monitoring data collected at the Tulsa West monitoring site is presumed to satisfy preconstruction monitoring requirements.

Table 23. List of Nearby Oklahoma Ozone Monitors

Site	Name	Distance	Average 4th High 2016-2018*
40-143-0174	Tulsa South	42 miles E	0.065 ppm
40-037-0144	**Tulsa West**	**25 miles NE**	**0.065 ppm**
40-109-0096	Choctaw	44 miles SW	0.067 ppm
40-109-1037	OKC North	46 miles SW	0.070 ppm

*The average of the 4th high monitored 8-hour ozone values from 2016 through December 31 of 2018.

Ozone Modeling

EPA conducted photochemical modeling studies to provide guidance on the development of Modeled Emission Rates for Precursors (MERPs). These MERPs are intended to be used, where appropriate, as a Tier I demonstration tool for ozone and secondary formation $PM_{2.5}$ evaluation requirements under PSD. The final guidance was released on April 30, 2019. The guidance uses conservative assumptions to evaluate hypothetical single-source impacts on downwind O_3. The parameters relied upon are documented in EPA document number EPA-454/R-19-003, April 2019.

The new VOC emission sources under review in this permit are forty-seven (47) 270,000-bbl external floating roof tanks and associated fugitives. The highest and most common release height for emissions is 16.9 meters. Emissions from the storage tanks were developed with Tanks 4.0.9d assuming crude with an RVP of 8.

The MERP analysis identified four hypothetical sources for Oklahoma. The low-level VOC sources in Canadian and Muskogee counties were the most representative of the source location in Cushing. In deriving the lowest MERP values, EPA explored impacts from surface level releases of precursor pollutants at 10 meters. Emissions were modeled using a typical industrial speciation for VOCs. The critical air quality threshold for ozone or Significant Impact Level, SIL, used to derive the MERP was 1.0 part per billion (ppb).

Table 24. Oklahoma MERP Values based on EPA

Location	Modeled Emission Rate	Modeled Concentration	MERP
	TPY	PPB	TPY
Canadian County	500	0.068	7,343

Photochemical modeling was conducted in August of 2015 on behalf of Tinker Air Force Base by Ramboll Environ. The modeling study was based on a Texas Commission on Environmental Quality (TCEQ) developed Photochemical Grid Model (PGM) modeling database for ozone episodes in June of 2012. The TCEQ episodes included high monitored ozone concentrations in

Oklahoma as well. The Comprehensive Air-quality Model with extensions version 6.11 with the Carbon Bond 6 revision 2 chemical mechanism was used in the study. The TCEQ database used a 36 km continental U.S. (CONUS) and a 12 km Texas-Oklahoma domain. These domains were retained and a new 4 km OKC/Tulsa modeling domain was added. This new domain included the Cushing area. The 4 km domain-wide 8-hour ozone performance statistics achieved EPA's performance goals with a slight overestimation bias.

Using the method provided in the draft EPA guidance, modeling conducted on behalf of Tinker for 608 tons per year of VOCs would yield an unadjusted MERP consistent with the values provided by EPA.

Table 25. Calculated MERP Based on Tinker Modeling

Location	Modeled Emission Rate	Modeled Concentration	MERP
	TPY	PPB	TPY
Tinker	608	0.10	6,080

The critical air quality threshold for ozone or SIL, of 1.0 ppb should not be relied upon without justification. However, the design value for the Cushing area was conservatively established by the Tulsa West monitor (Site ID: 40-037-0144) at 65 ppb. The ozone impact from the tank farm expansion with project VOC increase of 464.22 TPY would be a relative ozone increase in the neighborhood of 0.076 ppb based on the referenced Ramboll Environ study. Using the EPA developed MERP guidance, the relative increase would be 0.063 ppb. The project VOC increase of 464.22 TPY is anticipated to be well below any reasonably established significant impact level and therefore no further evaluation is necessary.

C. Evaluation of Additional Source-Related Impacts

The PSD regulations require that additional impact analyses be conducted to consider the project's potential effects on soils and vegetation, secondary growth and visibility impairment.

Soils and Vegetation Impacts

PSD regulations require that additional impact analyses be conducted to consider the project's effects on soils and vegetation. Elevated ground-level ozone concentrations can damage plant life and reduce crop production. Ozone interferes with the ability of plants to produce and store food, making them more susceptible to disease, insects and harsh weather. The increased potential VOC emissions resulting from proposed tanks are predicted to cause a maximum 8-hour increase of 0.08 ppb ozone, a level that will have an insignificant impact on soils and vegetation.

Secondary Growth

A growth analysis is intended to evaluate the amount of new growth that is likely to occur in support of the project and to estimate secondary emissions resulting from that associated growth. Associated growth includes residential and commercial/ industrial expansion resulting from the new terminal. Residential growth depends on the number of new employees and the availability of housing in the area, while associated commercial and industrial growth consists

of new sources providing services to the new employees and the terminal. For the proposed installation of forty-seven (47) tanks, Plains does not anticipate an increase in required permanent manpower or third-party services. Thus, since secondary growth analyses generally do not consider temporary sources such as construction, the proposed project will have negligible secondary growth impact.

Visibility Impairment Analysis

Based on the location of the terminal and the contents of tanks on-site, it is expected that the terminal will have no visibility impacts on the nearby area.

D. Class I Impact Analysis

Class I Areas are defined by the U.S. EPA's New Source Review Manual as those areas of the nation that are of special natural, scenic, recreational, or historic interest to the public. The closest Class I Area to the Cushing facility is the Wichita Mountain Wildlife Refuge, which is located approximately 218 kilometers (km) southwest of the facility. This Class I Area is managed by the U.S. Forest Service (FS).

Class I Area analyses examine two separate items: (1) Class I Increments and (2) Air Quality Related Values (AQRVs). Class I Increment modeling is explicitly required by U.S. EPA under the PSD program and is reviewed for approval by the state permitting agency. Class I Areas have a separate set of PSD Increments for PM_{10}, SO_2, and NO_X that are more stringent than the typically considered Class II Increments. The method recommended by the Federal Land Managers (FLMs) for Class I Area impact analysis has been utilized. As an alternative to the standard Class I analysis, the FLMs consider a source located greater than 50 km from a Class I area to have negligible impacts with respect to Class I air quality related values (AQRV) if its total SO_2, NO_X, PM_{10}, and H_2SO_4 annual emissions (in tons per year), divided by the distance (in km) from the Class I area (Q/D) is 10 or less. Based on the Federal Land Managers' Air Quality Related Values Workgroup (FLAG), *Phase I Report—Revised*, DRAFT, June 27, 2008, the FLMs would not request any further Class I AQRV impact analyses from such sources. Therefore, the FLM recommended formula *Q/D<10* was used in conducting the Class I impact analysis. There are negligible expected emissions of SO_2, NO_X, PM_{10}, or H_2SO_4 from the facility (Q = 0.44).

Table 26. Q/D<10 Analysis

Class I Area	Quantity (TPY)	Distance (km)	Q/D	Q/D<10?
Caney Creek	0.44	289	0.0015	Yes
Upper Buffalo	0.44	297	0.0148	Yes
Wichita Mountains	0.44	218	0.0020	Yes

The proposed project is not expected to significantly impact any AQRVs in the Wichita Mountain Wildlife Refuge because the ratio of Q/D is less than 10. Therefore, further analysis is not required.

Hydrogen Sulfide

The only other regulated pollutant of concern is hydrogen sulfide (H_2S), since this facility stores crude oil. Oklahoma statutes mandate that a source's emissions of H_2S are not allowed to cause an ambient air concentration of H_2S at any point beyond the boundaries of the site greater than 0.2 ppmv (24-hr average). This is equivalent to 283 $\mu g/m^3$ at standard conditions, a representative worst-case summertime highest daily average temperature.

The EPA SCREEN3 model was used to demonstrate that H_2S emissions at this facility cannot violate the standard for any crude containing up to 750 ppm H_2S, a level substantially higher than any likely to be routinely handled. Therefore, compliance is assured as long as crude H_2S concentration does not exceed 750 ppm.

SECTION VII. OKLAHOMA AIR POLLUTION CONTROL RULES

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

OAC 252:100-2 (Incorporation by Reference) [Applicable]
This subchapter incorporates by reference applicable provisions of Title 40 of the Code of Federal Regulations. These requirements are addressed in the "Federal Regulations" section.

OAC 252:100-3 (Air Quality Standards and Increments) [Applicable]
Subchapter 3 enumerates the primary and secondary ambient air quality standards and the PSD increments. The primary standards are enumerated in Appendix E and the secondary standards are enumerated in Appendix F of the Air Pollution Control Rules (OAC 252:100). NAAQs are established by the EPA. The actual ambient air concentrations of criteria pollutants are monitored within the State of Oklahoma by the DEQ Air Quality Division. At this time, all of Oklahoma is in "attainment" of these standards.

OAC 252:100-5 (Registration, Emission Inventory, and Annual Fees) [Applicable]
Subchapter 5 requires sources of air contaminants to register with Air Quality, file emission inventories annually, and pay annual operating fees based upon total annual emissions of regulated pollutants. The owner/operator will be required to submit emissions inventories and pay the appropriate fees.

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 that result in emissions not authorized in the permit and that exceed the "Insignificant Activities" or "Trivial Activities" thresholds require prior notification to AQD and may require a permit modification. Insignificant activities refer to those individual emission units either listed in Appendix I 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 a HAP that the EPA may establish by rule

Emission limitations and operational requirements necessary to assure compliance with all applicable requirements for all sources are taken from the construction permit application, or developed from the applicable requirement.

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

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

OAC 252:100-19 (Particulate Matter (PM)) [Applicable]
Section 19-4 regulates emissions of PM from new and existing fuel-burning equipment, with emission limits based on maximum design heat input rating. Fuel-burning equipment is defined in OAC 252:100-19 as any internal combustion engine or gas turbine, or other combustion device used to convert the combustion of fuel into usable energy. Appendix C specifies a PM emission limitation of 0.60 lbs/MMBTU for all equipment at this facility with a heat input rating of 10 MMBUTH or less.Thus, the emergency generators and water pump engines are subject to the requirements of this subchapter. However, the use of propane or diesel as fuel will not result in generator PM emissions that would approach the 0.60 lbs/MMBTU limitation.

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

OAC 252:100-25 (Visible Emissions and Particulates) [Applicable]
No discharge of greater than 20% opacity is allowed except for short-term occurrences which consist of not more than on 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. Since there are no fuel-burning or PM-producing activities, compliance is assured.

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

OAC 252:100-31 (Sulfur Compounds) [Applicable]
Subchapter 31 controls emissions of sulfur compounds from stationary source.
Part 5 limits sulfur dioxide emissions from new equipment (constructed after July 1, 1972). The emergency generators and water pump engines use commercial propane or diesel as fuel. The AP-42 (7/2000) Table 3.2-3 emission factor of 0.00058 lbs/MMBTU is well below the new equipment standard of 0.2 lbs/MMBTU for gaseous fuels and AP-42 (10/1996) Table 3.3-1 emission factor of 0.29 lbs/MMBTU is well below the new equipment standard of 0.8 lbs/MMBTU for liquid fuels.
Part 5 also limits ambient air impacts of hydrogen sulfide to 0.2 ppm (24-hr average). In previous application, SCREEN3 modeling has demonstrated that limiting crude H_2S content to 750 ppm or less will ensure compliance with this standard.

OAC 252:100-33 (Nitrogen Oxides) [Not Applicable]
This subchapter limits new gas-fired fuel-burning equipment with rated heat input greater than or equal to 50 MMBTUH to emissions of 0.2 lb of NOx per MMBTU, three-hour average. There is no significant fuel-burning equipment on location.

OAC 252:100-35 (Carbon Monoxide) [Not Applicable]
This facility has none of the affected sources: gray iron cupola, blast furnace, basic oxygen furnace, petroleum catalytic cracking unit, or petroleum catalytic reforming unit. Therefore, the facility is not subject to this subchapter.

OAC 252:100-37 (Volatile Organic Compounds) [Applicable]
Part 3 requires storage tanks constructed after December 28, 1974, with a capacity greater than 40,000 gallons to be equipped with a floating roof or a vapor-recovery system capable of collecting 85% or more of the uncontrolled VOCs. All tanks on-site that would be subject to this requirement are equipped with external floating roofs. However, these tanks are subject to the equipment standards of NSPS Subpart Kb and are therefore exempt from this section.
Part 5 limits the VOC content of coatings to dedicated coating lines. Painting operations by Plains will be related to maintenance painting of tanks and piping at the terminal and emit less than 100 pounds of VOC per 24-hour day; therefore, this section is not applicable.
Part 7 requires fuel-burning and refuse-burning equipment to be operated to minimize emissions of VOC. The emergency generators and water pump engines will be operated based on manufacturer's recommendations to ensure proper combustion.
Part 7 requires all effluent water separator openings which receive water containing more than 200 gallons per day of any VOC, to be sealed or the separator to be equipped with an external floating roof or a fixed roof with an internal floating roof or a vapor recovery system. No effluent water separators are located at this facility.

OAC 252:100-42 (Toxic Air Contaminants (TAC)) [Not Applicable]
This subchapter regulates toxic air contaminants (TAC) that are emitted into the ambient air in areas of concern (AOC). Any work practice, material substitution, or control equipment required by the Department prior to June 11, 2004, to control a TAC, shall be retained, unless a modification is approved by the Director. Since no AOC has been designated there are no specific requirements for this facility at this time.

OAC 252:100-43 (Testing, Monitoring, and Recordkeeping) [Applicable]
This subchapter provides general requirements for testing, monitoring and recordkeeping and applies to any testing, monitoring or recordkeeping activity conducted at any stationary source. To determine compliance with emissions limitations or standards, the Air Quality Director may require the owner or operator of any source in the state of Oklahoma to install, maintain and operate monitoring equipment or to conduct tests, including stack tests, of the air contaminant source. All required testing must be conducted by methods approved by the Air Quality Director and under the direction of qualified personnel. A notice-of-intent to test and a testing protocol shall be submitted to Air Quality at least 30 days prior to any EPA Reference Method stack tests. Emissions and other data required to demonstrate compliance with any federal or state emission limit or standard, or any requirement set forth in a valid permit shall be recorded, maintained, and submitted as required by this subchapter, an applicable rule, or permit requirement. Data from any required testing or monitoring not conducted in accordance with the provisions of this subchapter shall be considered invalid. Nothing shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

The following Oklahoma Air 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	Municipal Solid Waste Landfills	Not in source category

SECTION VIII. FEDERAL REGULATIONS

PSD, 40 CFR Part 52 [Applicable]
The facility is a listed Prevention of Significant Deterioration (PSD) major source, a crude oil storage facility exceeding 300,000-bbl storage capacity with current permitted emissions in excess of 100 TPY. Total project VOC emissions increase is estimated at 464.22 TPY. Therefore, the facility is subject to a PSD review. The PSD review is discussed in Section VI of this memorandum.

NSPS, 40 CFR Part 60 [Subparts Kb, IIII and JJJJ Applicable]

Subpart Kb (Volatile Organic Liquids Storage Vessels) applies to volatile organic liquids storage vessels for which construction, reconstruction, or modification commenced after July 23, 1984, and which have a capacity of 19,812 gallons (40 cubic meters) or greater. Paragraph 60.112b(a) specifies that vessels with a design capacity greater than or equal to 39,980 gallons containing a VOL that, as stored, has a maximum true vapor pressure greater than or equal to 0.75 psia but less than 11 psia shall have one of the following vapor control devices: an external fixed roof in combination with an internal floating roof; an external floating roof; a closed vent system to a control device (flare, condenser, or absorber); or an equivalent system. All of the tanks at this facility are subject to this subpart. The permittee shall comply with this subpart by using external floating roofs as defined in §60.112b(a)(2). The permit will also require compliance with the testing (§60.113b), reporting and recordkeeping (§60.115b), and monitoring (§60.116b) of this subpart. In addition, the facility shall comply with all the applicable requirements 40 CFR Part 60 Subpart A including the notifications as described in §60.7.

Subpart GG, Stationary Gas Turbines. This subpart affects combustion turbines which commenced construction, reconstruction, or modification after October 3, 1977, and which have a heat input rating of 10 MMBTUH or more. There are no turbines at this facility.

Subpart KKK, Equipment Leaks of VOC from Onshore Natural Gas Processing Plants. This subpart applies to natural gas processing plants constructed, reconstructed or modified after January 20, 1984 but prior to August 23, 2011. The facility does not engage in natural gas processing.

Subpart LLL, Onshore Natural Gas Processing: SO_2 Emissions. This subpart affects sweetening units and sweetening units followed by sulfur recovery units. This facility does not have a sweetening unit.

Subpart IIII, Stationary Compression Ignition (CI) Internal Combustion Engines (ICE). This subpart affects CI ICE based on power and displacement ratings, depending on date of construction, beginning with those constructed after July 11, 2005. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

GEN4 and P1 are diesel powered generators manufactured prior to the applicable threshold date and are therefore not subject to requirements of this subpart. P2 is a diesel powered generator manufactured after the applicable threshold date and is subject to this subpart.

Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines (SI-ICE). This subpart promulgates emission standards for all new SI engines ordered after June 12, 2006, and all SI engines modified or reconstructed after June 12, 2006, regardless of size.

GEN1, GEN3, GEN6, and GEN7 are propane-fired emergency generators manufactured after the applicable threshold date and are subject to requirements of this subpart for emergency generator engines. GEN2 is a propane-fired emergency generator manufactured prior to the applicable threshold date and is not subject to requirements of this subpart.

Subpart OOOO, Crude Oil and Natural Gas Production, Transmission, and Distribution. This subpart affects natural gas wells, centrifugal compressors, reciprocating compressors, pneumatic controllers, storage vessels, onshore natural gas processing plants, and onshore natural gas

sweetening units that commence construction, modification, or reconstruction after August 23, 2011, and on or before September 18, 2015. Storage vessels that commenced constructions after this date are potentially subject. However, this subpart only affects facilities located in the crude oil production source category, which includes the well and extends to the point of custody transfer to the crude oil transmission pipeline or any other forms of transportation. All liquids received by this facility will have already passed the point of custody transfer to a crude oil transmission pipeline. Therefore, this subpart does not apply.

Subpart OOOOa, Crude Oil and Natural Gas Facilities. This subpart applies to hydraulically fractured wells, centrifugal compressors, reciprocating compressors, pneumatic controllers and pumps, natural gas processing plants, storage vessels, equipment leaks, and natural gas sweetening units that commence construction, modification, or reconstruction after September 18, 2015. All equipment that commence construction after this date and the storage vessels and equipment leaks at this facility are potentially subject. However, all liquids received by this facility will have already passed the point of custody transfer to a crude oil transmission pipeline. Therefore, this subpart does not apply.

NESHAP, 40 CFR Part 61 [Not Applicable]

There are no emissions of any of the regulated pollutants: arsenic, asbestos, benzene, beryllium, coke oven emissions, mercury, radionuclides, or vinyl chloride except for trace amounts of benzene.

Subpart J (Equipment Leaks of Benzene) concerns only process streams which contain more than 10% benzene by weight. Benzene is present only in trace amounts in any product stream at this site.

Subpart BB (Benzene Transfer Operations) affects transfer and loading operations with 70% or more by weight benzene. Benzene is present only in trace amounts in any product stream at this site.

NESHAP, 40 CFR Part 63 [Subpart ZZZZ Applicable]

Subpart EEEE - Organic Liquids Distribution (Non-Gasoline). This subpart was finalized by Federal Register notice on February 3, 2004, and affects organic liquid distribution (OLD) operations only at major sources of HAPs with an organic liquid throughput greater than 7.29 million gallons per year (173,571 barrels/yr). The main types of plant sites that either are OLD operations or contain a collocated OLD operation are:

- Liquid terminal facilities that distribute organic liquids,
- Organic chemical manufacturing facilities with a co-located OLD operation,
- Petroleum refineries with a collocated OLD operation,
- Other industrial facilities with a collocated OLD operation,
- Crude oil pipeline pumping and breakout stations.

This subpart affects the following storage tanks at existing facilities.

- Tanks with a capacity greater than or equal to 20,000 gallons but less than 40,000 gallons that store an organic liquid that contains more than 5% HAPs and that has an annual average vapor pressure greater than or equal to 1.9 but less than 11.1 psia.

- Tanks with a capacity greater than or equal to 40,000 gallons that store an organic liquid that contains more than 5% HAPs and that has an annual average vapor pressure greater than or equal to 0.75 psia.

This subpart affects the following storage tanks at new facilities.

- Tanks with a capacity greater than or equal to 10,000 gallons but less than 40,000 gallons that store an organic liquid that contains more than 5% HAPs and that has an annual average vapor pressure greater than or equal to 1.9 but less than 11.1 psia.
- Tanks with a capacity greater than or equal to 40,000 gallons that store an organic liquid that contains more than 5% HAPs and that has an annual average vapor pressure greater than or equal to 0.1 psia.

This facility is not a major source of HAPs; therefore, none of the tanks at this facility are subject to the requirements of this subpart.

Subpart ZZZZ, Reciprocating Internal Combustion Engines (RICE). This subpart previously affected only RICE with a site-rating greater than 500 brake horsepower that are located at a major source of HAP emissions. On January 18, 2008, the EPA published a final rule that promulgates standards for new and reconstructed engines (after June 12, 2006) with a site rating less than or equal to 500 HP located at major sources, and for new and reconstructed engines (after June 12, 2006) located at area sources. Owners and operators of new and reconstructed stationary SI-ICE engines at area sources of HAP emissions are required by Subpart ZZZZ to meet the requirements of 40 CFR Part 60, Subpart IIII or JJJJ as appropriate.

All six emergency generators and two water pump engines are subject to this subpart. GEN1, GEN3, GEN6 and GEN7 comply by complying with NSPS Subpart JJJJ. P2 complies by complying with NSPS Subpart IIII.

GEN4 and P1 are subject to requirements in Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions, item 4: Emergency stationary CI RICE and black start stationary CI RICE.

a. Change oil and filter every 500 hours of operation or annually, whichever comes first;
b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

GEN2 is subject to requirements in Table 2d to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions, item 5: Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE>500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE>500 HP that operate 24 hours or less per calendar year.

a. Change oil and filter every 500 hours of operation or annually, whichever comes first;
b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

The permit requires compliance with all applicable requirements of Subpart ZZZZ for all subject equipment.

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 of the following criteria:

- It is subject to an emission limit or standard for an applicable regulated air pollutant.
- It uses a control device to achieve compliance with the applicable emission limit or standard.
- It has potential emissions, prior to the control device, of the applicable regulated air pollutant of 100 TPY.

There are no individual emission units at this facility that meet all of the above criteria.

Chemical Accident Prevention Provisions, 40 CFR Part 68 [Not Applicable]
The definition of a stationary source does not apply to transportation, including storage incident to transportation, of any substance or any other extremely hazardous substance under the provisions of this part. Naturally occurring hydrocarbon mixtures, prior to entry into a natural gas processing plant or a petroleum refining process unit, including: condensate, crude oil, field gas, and produced water, are exempt for the purpose of determining whether more than a threshold quantity of a regulated substance is present at the stationary source.

Stratospheric Ozone Protection, 40 CFR Part 82 [Not Applicable]
These standards require phase out of Class I & II substances, reductions of emissions of Class I & II substances to the lowest achievable level in all use sectors, and banning use of nonessential products containing ozone-depleting substances (Subparts A & C); control servicing of motor vehicle air conditioners (Subpart B); require Federal agencies to adopt procurement regulations which meet phase out requirements and which maximize the substitution of safe alternatives to Class I and Class II substances (Subpart D); require warning labels on products made with or containing Class I or II substances (Subpart E); maximize the use of recycling and recovery upon disposal (Subpart F); require producers to identify substitutes for ozone-depleting compounds under the Significant New Alternatives Program (Subpart G); and reduce the emissions of halons (Subpart H).
Subpart A identifies ozone-depleting substances and divides them into two classes. Class I controlled substances are divided into seven groups; the chemicals typically used by the manufacturing industry include carbon tetrachloride (Class I, Group IV) and methyl chloroform (Class I, Group V). A complete phase-out of production of Class I substances is required by

January 1, 2000 (January 1, 2002, for methyl chloroform). Class II chemicals, which are hydrochlorofluorocarbons (HCFCs), are generally seen as interim substitutes for Class I CFCs. Class II substances consist of 33 HCFCs. A complete phase-out of Class II substances, scheduled in phases starting by 2002, is required by January 1, 2030.
This facility does not utilize any Class I & II substances.
Subpart F requires that any persons servicing, maintaining, or repairing appliances except for motor vehicle air conditioners; persons disposing of appliances, including motor vehicle air conditioners; refrigerant reclaimers, appliance owners, and manufacturers of appliances and recycling and recovery equipment comply with the standards for recycling and emissions reduction.

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

SECTION IX. COMPLIANCE

A. Tier Classification and Public Review

This application has been classified as **Tier II** based on the request for a construction permit for modifications to an existing PSD-major source which will result in post-modification increase in PTE for VOC exceeding the Significant Emission Level for PSD for that pollutant. Public review and EPA of the application and permit are required.

The applicant published the DEQ "Notice of Tier II Permit Application Filing" in The Cushing Citizen, a twice weekly newspaper published in Cushing, Payne County, Oklahoma, on April 4, 2018. The notice stated that the application was available for public review in the Cushing City Library at 215 N Steele Avenue, Cushing, Oklahoma 74023, or at the DEQ main office at 707 N. Robinson Avenue, Oklahoma City, Oklahoma.

Applicant also published a "Notice of Tier II Draft Permit" in The Cushing Citizen, a twice weekly newspaper published in Cushing, Payne County, Oklahoma, on July 17, 2019. The notice stated that the draft permit was available for public review at the Cushing City Library at 215 N Steele Avenue, Cushing, OK 74023, or at the Air Quality Division's main office or at the AQD main office in Oklahoma City, Oklahoma. The public comment period ended 30 days after the publication of the notice. No public comments were received.

The permittee has submitted an affidavit that they are not seeking a permit for land use or for any operation upon land owned by others without their knowledge. The affidavit certifies that the applicant is the sole owner of the land involved. Information on all permit actions is available for review by the public on the Air Quality section of the DEQ web page at *http://www.deq.ok.gov*.

B. State Review

This facility is not located within 50 miles of the Oklahoma border. Therefore, no bordering states will be notified of the draft permit.

C. EPA Review

The proposed permit was forwarded to the EPA Region VI for a 45-day review period. There were no comments received from EPA.

SECTION X. FEES PAID

A permit fee of $6,000 for a Part 70 significant modification permit has been received on September 7, 2017. The total fee due for this permit is $5,000 for a Part 70 construction modification fee. The overpayment of $1,000 is in the process of refunding upon applicant's request.

SECTION XI. SUMMARY

The applicant has demonstrated the ability to comply with the requirements of the applicable Air Quality rules and regulations. Ambient air quality standards are not threatened at this site. There are no active Air Quality compliance or enforcement issues concerning this facility. Issuance of the modified construction permit is recommended.

PERMIT TO CONSTRUCT
AIR POLLUTION CONTROL FACILITY
SPECIFIC CONDITIONS

Plains Marketing LLC **Permit No. 2015-1352-C (M-3) PSD**
Cushing Terminal Crude Oil Storage Facility

The permittee is authorized to construct in conformity with the specifications submitted to Air Quality on September 7, 2017, and subsequent supplemental material. The Evaluation Memorandum dated August 19, 2019, explains the derivation of applicable permit requirements and estimates of emissions; however, it does not contain operating limitations or permit requirements. Commencing construction or continuing operations under this permit constitutes acceptance of, and consent to, the conditions contained herein:

1. **Permitted tanks** **[OAC 252:100-8-6(a)(1)]**
   1.A Crude Oil Storage Tanks

<u>Existing Storage Tanks</u>

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
1	100	Crude Oil	EFR	100,000	1993
	200	Crude Oil	EFR	100,000	1993
	300	Crude Oil	EFR	100,000	1993
	400	Crude Oil	EFR	100,000	1993
	500	Crude Oil	EFR	100,000	1993
	600	Crude Oil	EFR	100,000	1993
	700	Crude Oil	EFR	100,000	1993
	800	Crude Oil	EFR	100,000	1993
	900	Crude Oil	EFR	100,000	1993
	1000	Crude Oil	EFR	100,000	1993
	1100	Crude Oil	EFR	100,000	1993
	1200	Crude Oil	EFR	100,000	1993
	1300	Crude Oil	EFR	100,000	1993
	1400	Crude Oil	EFR	100,000	1993
2	1500	Crude Oil	EFR	150,000	1993
	1600	Crude Oil	EFR	150,000	1993
	1700	Crude Oil	EFR	150,000	1993
	1800	Crude Oil	EFR	150,000	1993

[1]EFR = External Floating Roof IFR = Internal Floating Roof

Existing Storage Tanks (continued)

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
3	1900	Crude Oil	EFR	250,000	1997
	2000	Crude Oil	EFR	250,000	1997
	2100	Crude Oil	EFR	250,000	1997
	2200	Crude Oil	EFR	250,000	1997
	2300	Crude Oil	EFR	250,000	2002
	2400	Crude Oil	EFR	250,000	2002
	2500	Crude Oil	EFR	250,000	2002
	2600	Crude Oil	EFR	250,000	2002
	2700	Crude Oil	EFR	250,000	2003
	2800	Crude Oil	EFR	250,000	2003
	2900	Crude Oil	EFR	250,000	2003
	3000	Crude Oil	EFR	250,000	2005
	3100	Crude Oil	EFR	250,000	2003
	3200	Crude Oil	EFR	250,000	2003
	3300	Crude Oil	EFR	250,000	2003
	3400	Crude Oil	EFR	250,000	2005
	3500	Crude Oil	EFR	250,000	2003
	3600	Crude Oil	EFR	250,000	2003
	3700	Crude Oil	EFR	250,000	2005
	3800	Crude Oil	EFR	250,000	2005

[1]EFR = External Floating Roof IFR = Internal Floating Roof

Existing Storage Tanks (continued)

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
5	3900	Crude Oil	EFR	570,000	2006
	4000	Crude Oil	EFR	570,000	2006
	4100	Crude Oil	EFR	570,000	2006
	4200	Crude Oil	EFR	570,000	2006
	4300	Crude Oil	EFR	570,000	2006
	4400	Crude Oil	EFR	570,000	2006
	5000	Crude Oil	EFR	570,000	2009
	5100	Crude Oil	EFR	570,000	2009
	5200	Crude Oil	EFR	570,000	2009
	5300	Crude Oil	EFR	570,000	2009
	5400[2]	Crude Oil	EFR	270,000	2016
	5500[2]	Crude Oil	EFR	270,000	2016
	7200[2]	Crude Oil	EFR	270,000	2017
	7300[2]	Crude Oil	EFR	270,000	2017
	3950[2]	Crude Oil	EFR	380,000	2017
	4350[2]	Crude Oil	EFR	380,000	2017
	7400[2]	Crude Oil	EFR	270,000	2017
	7500[2]	Crude Oil	EFR	270,000	2017
	7700[2]	Crude Oil	EFR	270,000	2017
	11800[2]	Crude Oil	EFR	570,000	TBD
	11900[2]	Crude Oil	EFR	570,000	TBD

[1]EFR = External Floating Roof IFR = Internal Floating Roof

[2]Construction of these tanks was authorized in Permit No. 2003-104-C (M-4) PSD. Tanks 5400, 5500, 7200, and 7300 were constructed as 270,000-bbl tanks instead of 570,000-bbl tanks. Tanks 3950 and 4350 were constructed as 380,000-bbl tanks instead of 570,000-bbl tanks. Tanks permitted as 11500 through 11700 were renamed 7400, 7500, and 7700 in Permit No. 2015-1352-TVR (M-2) and they were constructed as 270,000-bbl tanks instead of 570,000-bbl tanks.

Existing Storage Tanks (continued)

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
6	4500	Crude Oil	EFR	270,000	2010
	4600	Crude Oil	EFR	270,000	2010
	4700	Crude Oil	EFR	270,000	2010
	4800	Crude Oil	EFR	270,000	2010
7	7000[3]	Crude Oil	EFR	270,000	2012
	7100[3]	Crude Oil	EFR	270,000	2012
8	265274	Crude Oil	IFR	1,000	2013
	265275	Crude Oil	IFR	1,000	2013

[1]EFR = External Floating Roof IFR = Internal Floating Roof
[3]Authorized in Permit No. 2003-104-C (M-4) (PSD) to be constructed as 300,000-bbl tanks.

Existing Storage Tanks (continued)

EUG ID#	EU ID#	Contents	Roof Type[1]	Capacity (bbl)	Construction/ Installation Date
9	4850	Crude Oil	EFR	270,000	2010
	4900	Crude Oil	EFR	270,000	2010
	5600	Crude Oil	EFR	270,000	2010
	5700	Crude Oil	EFR	270,000	2010
	5800	Crude Oil	EFR	270,000	2010
	5900	Crude Oil	EFR	270,000	2010
	6000	Crude Oil	EFR	270,000	2010
	6100	Crude Oil	EFR	270,000	2011
	6200	Crude Oil	EFR	270,000	2011
	6300	Crude Oil	EFR	270,000	2011
	6400	Crude Oil	EFR	270,000	2011
	6500	Crude Oil	EFR	270,000	2011
	6600	Crude Oil	EFR	270,000	2011
	6700	Crude Oil	EFR	270,000	2011
	6800	Crude Oil	EFR	270,000	2011
	6900	Crude Oil	EFR	270,000	2011
	4950	Crude Oil	EFR	270,000	2012
	1810	Crude Oil	EFR	270,000	2013
	1610	Crude Oil	EFR	270,000	2014
	1710	Crude Oil	EFR	270,000	2014
	1720	Crude Oil	EFR	270,000	2015
	1730	Crude Oil	EFR	270,000	2015
	1820	Crude Oil	EFR	270,000	2015
	1830	Crude Oil	EFR	270,000	2015
	1840	Crude Oil	EFR	270,000	2015
	1740	Crude Oil	EFR	270,000	2016
	1750	Crude Oil	EFR	270,000	2016
	1850	Crude Oil	EFR	270,000	2016
	1620	Crude Oil	EFR	270,000	2016

[1]EFR = External Floating Roof IFR = Internal Floating Roof

Proposed New Storage Tanks

EUG ID#	**EU ID#**	**Contents**	**Roof Type***	**Capacity (bbl)**	**Construction/Installation Date**
10a	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000,	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New

*EFR = External Floating Roof

[Continued]. Proposed New Storage Tanks

EUG ID#	EU ID#	Contents	Roof Type*	Capacity (bbl)	Construction/Installation Date
10b	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New
	TBD	Crude Oil	EFR	270,000	Proposed New

*EFR = External Floating Roof

1.B. EUG 7: Fugitive Equipment Components

Fugitive equipment items are not limited in number or VOC emissions. The associated emissions shall be included to demonstrate compliance with the facility-wide emission limits. The facility shall maintain an updated list of all fugitive emission sources.

1.C. Previously Authorized Emission Limits

- The total VOC emissions from existing tanks in EUG 1 through EUG 9, associated fugitives, emergency generators, and water pump engines are limited to no more than 437.35 TPY.

1.D. EUG 10 Tanks:

- For EUG 10 tanks normal operations, the VOC emissions shall not exceed 285.83 TPY.
- For EUG 10 tanks roof landings, the VOC emissions from all EUG 10a tanks (Payne County East Manifold) shall not exceed 109.504 TPY, and VOC emissions from all EUG 10b tanks (Osage Manifold) shall not exceed 64.192 TPY.
- Each tank should comply with the approved BACT design elements and work practices:
  (i) External floating roof compliant with NSPS Kb Standards,
  (ii) Primary mechanical shoe seal and secondary seal,
  (iii) Drain-dry design, and
  (iv) Good operational and maintenance practices as set forth by NSPS Subpart Kb.

1.E. HAPs Limits

- Facility-wide emissions of HAPs from all sources (tanks, fugitives, and any other HAP emission source) are limited to not more than 10 tons of any single HAP or 25 tons of any combination of HAPs in any 12-month period.

1.F. Compliance shall be demonstrated by:

- A rolling 12-month total of VOC emissions calculated no later than 30 days after the end of each 12-month period.
- TANKS4.0 or other emission estimation software approved by AQD.
- Records of material stored and throughput for each tank.
- Calculations of emissions from roof landing events.
- Inclusion of emission estimates for fugitive VOC sources and any other identified sources of VOC emissions.

2. Each tank in EUG# 1, 2, 3, 5, 6, 7, 8, 9, and 10 is subject to federal New Source Performance Standards, 40 CFR Part 60, Subpart Kb, and shall comply with all applicable requirements for external or internal floating roof tanks [as applicable] which shall include, but are not limited to, the following requirements: [40 CFR Part 60, Subpart Kb]

a. §60.110b Applicability and designation of affected facility.
b. §60.111b Definitions.
c. §60.112b Standard for volatile organic compounds (VOC).
d. §60.113b Testing and procedures.
e. §60.114b Alternative means of emission limitation.
f. §60.115b Reporting and recordkeeping requirements.
g. §60.116b Monitoring of operations.
h. §60.117b Delegation of authority.

3. The following records shall be maintained on-site to verify Insignificant Activities. No recordkeeping is required for those operations which qualify as Trivial Activities. [OAC 252:100-8-6 (a)(3)(B)]

a. For activities that have the potential to emit less than 5 TPY (actual) of any criteria pollutant: The type of activity and the amount of emissions from that activity (annual).
b. Future remediation including, but not limited to, Part 1B listings.
c. Portable water/soil treatment equipment including, but not limited to, air strippers, filtration units, and chemical/biological units.
d. Emergency mainline relief vessel, which is emptied immediately after use.
e. Periodic tank cleaning.
f. Occasional tank and pipe painting.

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

5. Alternative materials other than crude oil may be stored in the tanks provided the true vapor pressure of alternative material is less than 11.1 psia at storage conditions and there will be no exceedence of the permitted 12-month VOC facility-wide cap. HAP emission from such alternate storage, combined with HAP emissions from storage of crude oil, may not exceed major source thresholds for any 12-month period. The permittee must provide 30 days advance written notice to DEQ and EPA of such a change. The notice shall provide a brief description of the change, effective date, any change in emissions (including HAPs) between the storage of alternative material and the storage of crude oil in the tank, and list (if any) permit terms or conditions no longer applicable as a result.

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

6. Each tank to which these specific conditions apply shall have a permanent means of identification which distinguishes it from other equipment. [OAC 252:100-8-5(e)(3)(B)]

7. Permittee is authorized to operate the emergency generators and water pump engines listed in the following table. Water pump P2 is limited to not more than 500 hours operation annually.

EUG	EU	Make/Model	HP	Fuel	Applicable Rules		
					NSPS Subpart		NESHAP Subpart
					IIII	JJJJ	ZZZZ
ENG	GEN1	Kohler 80 REZG	150	Propane	---	Yes	Yes
	GEN2	Kohler 45 RZG	75		---	---	Yes
	GEN3	Generac SGO150	230		---	Yes	Yes
	GEN4	Cummins 6BTA5.9-F	208	Diesel	---	---	Yes
	GEN6	Generac SG150	201	Propane	---	Yes	Yes
	GEN7	Generac SG130	174		---	Yes	Yes
	P1	Cummins 6BTA5.9-F1	208	Diesel	---	---	Yes
	P2	John Deere 6135HF485	600		Yes	---	Yes

a. The permittee shall comply with all applicable requirements in 40 CFR Part 60, Subpart IIII, for all stationary compression ignition (CI) internal combustion engines (ICE) that commenced construction, modification, or reconstruction after July 11, 2005, including, but not limited to, the following.

[40 CFR §§ 60.4200 to 60.4219]

1. §60.4200 Am I subject to this subpart?
2. The emission standards of §60.4204, §60.4205, and §60.4206.
3. The fuel requirements of §60.4207.
4. The deadlines for importing or installing CI ICE produced in the previous model year in accordance with §60.4208.
5. The monitoring requirements of §60.4209.
6. The compliance requirements of §60.4211.
7. The performance test methods and other procedures of §60.4212.
8. The notification, reporting, and recordkeeping requirements of §60.4214.

9. §60.4218 What parts of the General Provisions apply to this subpart?
10. §60.4219 What definitions apply to this subpart?

b. The permittee shall comply with all applicable requirements in 40 CFR Part 60, Subpart JJJJ, for all stationary spark ignition (SI) internal combustion engines (ICE) that commenced construction, modification, or reconstruction after June 12, 2006, including, but not limited to, the following. [40 CFR §§ 60.4230 to 60.4248]

1. §60.4230 Am I subject to this subpart?
2. The emission standards of §60.4233 and §60.4234.
3. The fuel requirements of §60.4235.
4. The deadlines for importing or installing SI ICE produced in the previous model year in accordance with §60.4236.
5. The monitoring requirements of §60.4237.
6. The compliance requirements of §60.4243.
7. The performance test methods and other procedures of §60.4244.
8. The notification, reporting, and recordkeeping requirements of §60.4245.
9. §60.4246 What parts of the General Provisions apply to me?
10. §60.4248 What definitions apply to this subpart?

c. The permittee shall comply with all applicable requirements in 40 CFR Part 63, Subpart ZZZZ, for any existing, new, or reconstructed reciprocating internal combustion engines (RICE) including, but not limited to, the following.
[40 CFR §§ 63.6580 to 63.6675]

1. § 63.6580 What is the purpose of subpart ZZZZ?
2. § 63.6585 Am I subject to this subpart?
3. § 63.6590 What parts of my plant does this subpart cover?
4. § 63.6595 When do I have to comply with this subpart?
5. § 63.6600 What emission limitations and operating limitations must I meet?
6. § 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?
7. § 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?
8. § 63.6605 What are my general requirements for complying with this subpart?
9. § 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake horsepower located at a major source of HAP emissions?
10. § 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake

horsepower located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

11. § 63.6615 When must I conduct subsequent performance tests?
12. § 63.6620 What performance tests and other procedures must I use?
13. § 63.6625 What are my monitoring, installation, collection operation, and maintenance requirements?
14. § 63.6630 How do I demonstrate initial compliance with the emission limitations and operating limitations and other requirements?
15. § 63.6635 How do I monitor and collect data to demonstrate continuous compliance?
16. § 63.6640 How do I demonstrate continuous compliance with the emission limitations and operating limitations and other requirements?
17. § 63.6645 What notifications must I submit and when?
18. § 63.6650 What reports must I submit and when?
19. § 63.6655 What records must I keep?
20. § 63.6660 In what form and how long must I keep my records?
21. § 63.6665 What parts of the General Provisions apply to me?
22. § 63.6670 Who implements and enforces this subpart?
23. § 63.6675 What definitions apply to this subpart?

8. The permittee shall maintain records of operation as listed below. These records shall be retained on-site for at least five years from the date of recording, inspection, testing, or repair, and shall be made available to regulatory personnel upon request.

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

a. Throughput for each tank in Specific Condition #1 (monthly and 12-month rolling totals calculated no later than 30 days after the end of each 12-month period.) Throughput shall be derived from flow measurement.
b. Type of liquid material, maximum vapor pressure, and period of storage if other than crude oil.
c. Inspection and maintenance records of all tank seals as required by NSPS Subpart Kb.
d. Records required by NSPS Subparts Kb, IIII, and JJJJ.
e. Records required by NESHAP Subpart ZZZZ.
f. Records documenting Insignificant Activities as required by Specific Condition #3.
g. Records of emissions calculations demonstrating compliance with the permitted emission limits in Specific Condition No.1 (monthly and 12-month rolling total).
h. A record of all roof landing events, including calculations of emissions (in TPY, monthly and 12-month rolling total).
i. Annual hours of operation for each emergency engine and water pump.

9. 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 252:100-7 Permits for Minor Facilities
b. OAC 252:100-11 Alternative Emissions Reduction
c. OAC 252:100-15 Mobile Sources
d. OAC 252:100-39 Nonattainment Areas

10. The permittee shall not store crude oil with H_2S concentration over 750 ppm in order to not violate the ambient air H_2S concentration of 0.2 ppmv (24-hr average), which is equivalent to 283 $\mu g/m^3$ at standard conditions.

11. The permittee shall submit an administratively complete operating permit application within 180 days for commencement of operation of the modification. Permit No. 2003-191-C (M-4) PSD shall remain in force as authority to perform modifications to the facility within the scope of that permit.

PART 70 PERMIT

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

Permit No. 2015-1352-C (M-3) PSD

Plains Marketing LLC,

having complied with the requirements of the law, is hereby granted permission to construct the Cushing Terminal Crude Oil Storage Facility at Section 23, Township 17N, Range 5E, Lincoln County, Oklahoma, subject to the Standard Conditions dated June 21, 2016, and the Specific Conditions both of which are attached.

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

Division Director **Date**

MAJOR SOURCE AIR QUALITY PERMIT
STANDARD CONDITIONS
(July 21, 2009)

SECTION I. DUTY TO COMPLY

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

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

C. The permittee shall comply with all conditions of this permit. Any permit noncompliance shall constitute a violation of the Oklahoma Clean Air Act and shall be grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of a permit renewal application. All terms and conditions are enforceable by the DEQ, by the Environmental Protection Agency (EPA), and by citizens under section 304 of the Federal Clean Air Act (excluding state-only requirements). This permit is valid for operations only at the specific location listed.
[40 C.F.R. §70.6(b), OAC 252:100-8-1.3 and OAC 252:100-8-6(a)(7)(A) and (b)(1)]

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

SECTION II. REPORTING OF DEVIATIONS FROM PERMIT TERMS

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

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

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

SECTION III. MONITORING, TESTING, RECORDKEEPING & REPORTING

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

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

B. Records of required monitoring shall include:

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

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

C. No later than 30 days after each six (6) month period, after the date of the issuance of the original Part 70 operating permit or alternative date as specifically identified in a subsequent Part 70 operating permit, the permittee shall submit to AQD a report of the results of any required monitoring. All instances of deviations from permit requirements since the previous report shall be clearly identified in the report. Submission of these periodic reports will satisfy any reporting requirement of Paragraph E below that is duplicative of the periodic reports, if so noted on the submitted report. [OAC 252:100-8-6(a)(3)(C)(i) and (ii)]

D. If any testing shows emissions in excess of limitations specified in this permit, the owner or operator shall comply with the provisions of Section II (Reporting Of Deviations From Permit Terms) of these standard conditions. [OAC 252:100-8-6(a)(3)(C)(iii)]

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

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

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

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

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

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

I. All testing must be conducted under the direction of qualified personnel by methods approved by the Division Director. All tests shall be made and the results calculated in accordance with standard test procedures. The use of alternative test procedures must be approved by EPA. When a portable analyzer is used to measure emissions it shall be setup, calibrated, and operated in accordance with the manufacturer's instructions and in accordance with a protocol meeting the requirements of the "AQD Portable Analyzer Guidance" document or an equivalent method approved by Air Quality.

[OAC 252:100-8-6(a)(3)(A)(iv), and OAC 252:100-43]

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

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

SECTION IV. COMPLIANCE CERTIFICATIONS

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

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

B. The compliance certification shall describe the operating permit term or condition that is the basis of the certification; the current compliance status; whether compliance was continuous or intermittent; the methods used for determining compliance, currently and over the reporting period. The compliance certification shall also include such other facts as the permitting authority may require to determine the compliance status of the source.

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

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

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

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

SECTION V. REQUIREMENTS THAT BECOME APPLICABLE DURING THE PERMIT TERM

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

SECTION VI. PERMIT SHIELD

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

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

SECTION VII. ANNUAL EMISSIONS INVENTORY & FEE PAYMENT

The permittee shall file with the AQD an annual emission inventory and shall pay annual fees based on emissions inventories. The methods used to calculate emissions for inventory purposes shall be based on the best available information accepted by AQD.
[OAC 252:100-5-2.1, OAC 252:100-5-2.2, and OAC 252:100-8-6(a)(8)]

SECTION VIII. TERM OF PERMIT

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

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

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

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

SECTION IX. SEVERABILITY

The provisions of this permit are severable and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
[OAC 252:100-8-6 (a)(6)]

SECTION X. PROPERTY RIGHTS

A. This permit does not convey any property rights of any sort, or any exclusive privilege.
[OAC 252:100-8-6(a)(7)(D)]

B. This permit shall not be considered in any manner affecting the title of the premises upon which the equipment is located and does not release the permittee from any liability for damage to persons or property caused by or resulting from the maintenance or operation of the equipment for which the permit is issued. [OAC 252:100-8-6(c)(6)]

SECTION XI. DUTY TO PROVIDE INFORMATION

A. The permittee shall furnish to the DEQ, upon receipt of a written request and within sixty (60) days of the request unless the DEQ specifies another time period, any information that the

DEQ may request to determine whether cause exists for modifying, reopening, revoking, reissuing, terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the DEQ copies of records required to be kept by the permit.
[OAC 252:100-8-6(a)(7)(E)]

B. The permittee may make a claim of confidentiality for any information or records submitted pursuant to 27A O.S. § 2-5-105(18). Confidential information shall be clearly labeled as such and shall be separable from the main body of the document such as in an attachment.
[OAC 252:100-8-6(a)(7)(E)]

C. Notification to the AQD of the sale or transfer of ownership of this facility is required and shall be made in writing within thirty (30) days after such sale or transfer.
[Oklahoma Clean Air Act, 27A O.S. § 2-5-112(G)]

SECTION XII. REOPENING, MODIFICATION & REVOCATION

A. The permit may be modified, revoked, reopened and reissued, or terminated for cause. Except as provided for minor permit modifications, the filing of a request by the permittee for a permit modification, revocation and reissuance, termination, notification of planned changes, or anticipated noncompliance does not stay any permit condition.
[OAC 252:100-8-6(a)(7)(C) and OAC 252:100-8-7.2(b)]

B. The DEQ will reopen and revise or revoke this permit prior to the expiration date in the following circumstances: [OAC 252:100-8-7.3 and OAC 252:100-8-7.4(a)(2)]

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

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

D. The permittee shall notify AQD before making changes other than those described in Section XVIII (Operational Flexibility), those qualifying for administrative permit amendments, or those defined as an Insignificant Activity (Section XVI) or Trivial Activity (Section XVII). The

notification should include any changes which may alter the status of a "grandfathered source," as defined under AQD rules. Such changes may require a permit modification.
[OAC 252:100-8-7.2(b) and OAC 252:100-5-1.1]

E. Activities that will result in air emissions that exceed the trivial/insignificant levels and that are not specifically approved by this permit are prohibited. [OAC 252:100-8-6(c)(6)]

SECTION XIII. INSPECTION & ENTRY

A. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized regulatory officials to perform the following (subject to the permittee's right to seek confidential treatment pursuant to 27A O.S. Supp. 1998, § 2-5-105(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 exceedance resulting from an emergency shall be reported to AQD promptly but no later than 4:30 p.m. on the next working day after the permittee first becomes aware of the exceedance. This notice shall contain a description of the emergency, the probable cause of the exceedance, any steps taken to mitigate emissions, and corrective actions taken.
[OAC 252:100-8-6 (a)(3)(C)(iii)(I) and (IV)]

B. Any exceedance that poses an imminent and substantial danger to public health, safety, or the environment shall be reported to AQD as soon as is practicable; but under no circumstance shall notification be more than 24 hours after the exceedance. [OAC 252:100-8-6(a)(3)(C)(iii)(II)]

C. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventive maintenance, careless or improper operation, or operator error. [OAC 252:100-8-2]

D. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that: [OAC 252:100-8-6 (e)(2)]

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

E. In any enforcement proceeding, the permittee seeking to establish the occurrence of an emergency shall have the burden of proof. [OAC 252:100-8-6(e)(3)]

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

SECTION XV. RISK MANAGEMENT PLAN

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

SECTION XVI. INSIGNIFICANT ACTIVITIES

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

(1) 5 tons per year of any one criteria pollutant.
(2) 2 tons per year for any one hazardous air pollutant (HAP) or 5 tons per year for an aggregate of two or more HAP's, or 20 percent of any threshold less than 10 tons per year for single HAP that the EPA may establish by rule.
[OAC 252:100-8-2 and OAC 252:100, Appendix I]

SECTION XVII. TRIVIAL ACTIVITIES

Except as otherwise prohibited or limited by this permit, the permittee is hereby authorized to operate any individual or combination of air emissions units that are considered inconsequential and are on the list in Appendix J. Any activity to which a State or Federal applicable requirement applies is not trivial even if included on the trivial activities list.
[OAC 252:100-8-2 and OAC 252:100, Appendix J]

SECTION XVIII. OPERATIONAL FLEXIBILITY

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

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

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

provided that the facility provides the EPA and the DEQ with written notification as required below in advance of the proposed changes, which shall be a minimum of seven (7) days, or twenty four (24) hours for emergencies as defined in OAC 252:100-8-6 (e). The permittee, the DEQ, and the EPA shall attach each such notice to their copy of the permit. For each such change, the written notification required above shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change. The permit shield provided by this permit does not apply to any change made pursuant to this paragraph. [OAC 252:100-8-6(f)(2)]

SECTION XIX. OTHER APPLICABLE & STATE-ONLY REQUIREMENTS

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

(1) Open burning of refuse and other combustible material is prohibited except as authorized in the specific examples and under the conditions listed in the Open Burning Subchapter. [OAC 252:100-13]
(2) No particulate emissions from any fuel-burning equipment with a rated heat input of 10 MMBTUH or less shall exceed 0.6 lb/MMBTU. [OAC 252:100-19]

(3) For all emissions units not subject to an opacity limit promulgated under 40 C.F.R., Part 60, NSPS, no discharge of greater than 20% opacity is allowed except for: [OAC 252:100-25]

(a) Short-term occurrences which consist of not more than one six-minute period in any consecutive 60 minutes, not to exceed three such periods in any consecutive 24 hours. In no case shall the average of any six-minute period exceed 60% opacity;
(b) Smoke resulting from fires covered by the exceptions outlined in OAC 252:100-13-7;
(c) An emission, where the presence of uncombined water is the only reason for failure to meet the requirements of OAC 252:100-25-3(a); or

(d) Smoke generated due to a malfunction in a facility, when the source of the fuel producing the smoke is not under the direct and immediate control of the facility and the immediate constriction of the fuel flow at the facility would produce a hazard to life and/or property.

(4) No visible fugitive dust emissions shall be discharged beyond the property line on which the emissions originate in such a manner as to damage or to interfere with the use of adjacent properties, or cause air quality standards to be exceeded, or interfere with the maintenance of air quality standards. [OAC 252:100-29]

(5) No sulfur oxide emissions from new gas-fired fuel-burning equipment shall exceed 0.2 lb/MMBTU. No existing source shall exceed the listed ambient air standards for sulfur dioxide. [OAC 252:100-31]

(6) Volatile Organic Compound (VOC) storage tanks built after December 28, 1974, and with a capacity of 400 gallons or more storing a liquid with a vapor pressure of 1.5 psia or greater under actual conditions shall be equipped with a permanent submerged fill pipe or with a vapor-recovery system. [OAC 252:100-37-15(b)]

(7) All fuel-burning equipment shall at all times be properly operated and maintained in a manner that will minimize emissions of VOCs. [OAC 252:100-37-36]

SECTION XX. STRATOSPHERIC OZONE PROTECTION

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

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

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

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

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

SECTION XXI. TITLE V APPROVAL LANGUAGE

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

(1) The construction permit goes out for a 30-day public notice and comment using the procedures set forth in 40 C.F.R. § 70.7(h)(1). This public notice shall include notice to the public that this permit is subject to EPA review, EPA objection, and petition to EPA, as provided by 40 C.F.R. § 70.8; that the requirements of the construction permit will be incorporated into the Title V permit through the administrative amendment process; that the public will not receive another opportunity to provide comments when the requirements are incorporated into the Title V permit; and that EPA review, EPA objection, and petitions to EPA will not be available to the public when requirements from the construction permit are incorporated into the Title V permit.
(2) A copy of the construction permit application is sent to EPA, as provided by 40 CFR § 70.8(a)(1).
(3) A copy of the draft construction permit is sent to any affected State, as provided by 40 C.F.R. § 70.8(b).
(4) A copy of the proposed construction permit is sent to EPA for a 45-day review period as provided by 40 C.F.R.§ 70.8(a) and (c).
(5) The DEQ complies with 40 C.F.R. § 70.8(c) upon the written receipt within the 45-day comment period of any EPA objection to the construction permit. The DEQ shall not issue the permit until EPA's objections are resolved to the satisfaction of EPA.
(6) The DEQ complies with 40 C.F.R. § 70.8(d).

(7) A copy of the final construction permit is sent to EPA as provided by 40 CFR § 70.8(a).
(8) The DEQ shall not issue the proposed construction permit until any affected State and EPA have had an opportunity to review the proposed permit, as provided by these permit conditions.
(9) Any requirements of the construction permit may be reopened for cause after incorporation into the Title V permit by the administrative amendment process, by DEQ as provided in OAC 252:100-8-7.3(a), (b), and (c), and by EPA as provided in 40 C.F.R. § 70.7(f) and (g).
(10) The DEQ shall not issue the administrative permit amendment if performance tests fail to demonstrate that the source is operating in substantial compliance with all permit requirements.

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

SECTION XXII. CREDIBLE EVIDENCE

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

[OAC 252:100-43-6]

Plains Marketing LLC
Attn: Michael Chastant
Senior Air Quality Compliance Engineer
333 Clay Street, Suite 1600
Houston, TX 77002

Subject: Permit No. **2015-1352-C (M-3) PSD**
Cushing Terminal Crude Oil Storage Facility
Cushing, Lincoln County, Oklahoma

Dear Mr. Chastant:

Enclosed is the permit authorizing modification of the referenced operation. 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 April 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 may be of further service, please refer to the permit number above and contact our office at (405)702-4100.

Sincerely,

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