

PIONEER NATURAL RESOURCES USA, INC.

DRIVER 37-36H TANK BATTERY

30 TAC §106.261/262 ANALYSIS

EPN	FUG		VRU		VRU		LOAD1		FL1		LOAD2		Total Emissions		L	D	K	30 TAC 106.261/262 Emission Limit		In Compliance Hourly?	In Compliance Annual?
FIN	FUG		TANK1 - TANK5		TANK6 - TANK8		LOAD1		LOAD1		LOAD2		Hourly	Annual				Hourly	Annual		
Component	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(lb/hr)	(T/yr)	(mg/m ³)	ft		(lb/hr)	(T/yr)		
Hydrogen Sulfide	0.00029	0.0012	0.0000	0.0000	0.0000	0.0000	0.00004	0.0001	0.0001	0.0002	0.0055	0.0198	0.0087	0.0217	10.0	3,000	8	1.25	5.00	Yes	Yes
Propane (C3)	1.4489	6.1758	0.0000	0.0000	0.0000	0.0000	0.40036	1.3066	0.3040	0.9920	0.0328	0.1177	2.1860	8.5921	--	3,000	8	6.00	10.00	Yes	Yes
Butanes (C4)	0.8185	3.4889	0.0000	0.0000	0.0000	0.0000	0.18447	0.6020	0.2801	0.9142	0.0033	0.0118	1.2864	5.0169	--	3,000	8	6.00	10.00	Yes	Yes
Pentanes (C5)	0.3879	1.6534	0.0000	0.0000	0.0000	0.0000	0.07455	0.2433	0.1132	0.3694	0.0002	0.0007	0.5759	2.2668	350.0	3,000	8	6.00	5.00	Yes	Yes
Hexanes (C6)	0.3408	1.4525	0.0000	0.0000	0.0000	0.0000	0.03804	0.1241	0.0578	0.1885	0.0001	0.0003	0.4367	1.7655	176.0	3,000	8	6.00	5.00	Yes	Yes
Heptanes (C7)	0.1315	0.5604	0.0000	0.0000	0.0000	0.0000	0.00891	0.0291	0.0135	0.0441	0.0000	0.0000	0.1539	0.6336	350.0	3,000	8	6.00	5.00	Yes	Yes
Octanes (C8)	0.1249	0.5325	0.0000	0.0000	0.0000	0.0000	0.00316	0.0103	0.0048	0.0157	0.0000	0.0000	0.1329	0.5585	350.0	3,000	8	6.00	5.00	Yes	Yes
Nonanes (C9)	0.0917	0.3910	0.0000	0.0000	0.0000	0.0000	0.00073	0.0024	0.0011	0.0036	0.0000	0.0000	0.0936	0.3970	1,050.0	3,000	8	6.00	5.00	Yes	Yes
n-Decane (C10)	0.0831	0.3544	0.0000	0.0000	0.0000	0.0000	0.00020	0.0007	0.0003	0.0010	0.0000	0.0000	0.0836	0.3560	--	3,000	8	1.00	4.38	Yes	Yes
Undecanes (C11)	0.0636	0.2711	0.0000	0.0000	0.0000	0.0000	0.00006	0.0002	0.0001	0.0003	0.0000	0.0000	0.0638	0.2716	--	3,000	8	1.00	4.38	Yes	Yes
Dodecane	0.0593	0.2529	0.0000	0.0000	0.0000	0.0000	0.00002	0.0001	0.0000	0.0001	0.0000	0.0000	0.0594	0.2530	--	3,000	8	1.00	4.38	Yes	Yes
Tridecane	0.0573	0.2444	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.00001	0.0000	0.0000	0.0000	0.0573	0.2444	--	3,000	8	1.00	4.38	Yes	Yes
Tetradecane	0.0539	0.2298	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0539	0.2298	--	3,000	8	1.00	4.38	Yes	Yes
Pentadecane	0.0506	0.2158	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0506	0.2158	--	3,000	8	1.00	4.38	Yes	Yes
Hexadecane	0.0433	0.1848	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0433	0.1848	--	3,000	8	1.00	4.38	Yes	Yes
Heptadecane	0.0398	0.1696	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0398	0.1696	--	3,000	8	1.00	4.38	Yes	Yes
Octadecane	0.0412	0.1756	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0412	0.1756	--	3,000	8	1.00	4.38	Yes	Yes
Nonadecane	0.0386	0.1647	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0386	0.1647	--	3,000	8	1.00	4.38	Yes	Yes
Eicosane	0.0297	0.1265	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0297	0.1265	--	3,000	8	1.00	4.38	Yes	Yes
Heneicosane	0.0318	0.1355	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0318	0.1355	--	3,000	8	1.00	4.38	Yes	Yes
Docosane	0.0282	0.1203	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0282	0.1203	--	3,000	8	1.00	4.38	Yes	Yes
Tricosane	0.0270	0.1149	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0270	0.1149	--	3,000	8	1.00	4.38	Yes	Yes
Tetracosane	0.0255	0.1088	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0255	0.1088	--	3,000	8	1.00	4.38	Yes	Yes
Pentacosane	0.0223	0.0949	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0223	0.0949	--	3,000	8	1.00	4.38	Yes	Yes
Hexacosane	0.0228	0.0972	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0228	0.0972	--	3,000	8	1.00	4.38	Yes	Yes
Heptacosane	0.0213	0.0906	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0213	0.0906	--	3,000	8	1.00	4.38	Yes	Yes
Octacosane	0.0212	0.0906	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0212	0.0906	--	3,000	8	1.00	4.38	Yes	Yes
Nonacosane	0.0198	0.0844	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0198	0.0844	--	3,000	8	1.00	4.38	Yes	Yes
Triacotane	0.2207	0.9409	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2207	0.9409	--	3,000	8	1.00	4.38	Yes	Yes
Dotriacontane	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	--	3,000	8	1.00	4.38	Yes	Yes
Benzene	0.0114	0.0488	0.0000	0.0000	0.0000	0.0000	0.0009	0.0030	0.0014	0.0046	0.0012	0.0042	0.0150	0.0606	3.0	3,000	8	0.38	1.64	Yes	Yes
Toluene	0.0158	0.0675	0.0000	0.0000	0.0000	0.0000	0.00067	0.0022	0.0010	0.0033	0.0002	0.0007	0.0177	0.0737	188.0	3,000	8	6.00	5.00	Yes	Yes
Ethylbenzene	0.0088	0.0377	0.0000	0.0000	0.0000	0.0000	0.00018	0.0006	0.0003	0.0009	0.000014	0.00005	0.0093	0.0392	434.0	3,000	8	6.00	5.00	Yes	Yes
Xylenes	0.0114	0.0484	0.0000	0.0000	0.0000	0.0000	0.00019	0.0006	0.0003	0.0010	0.00001	0.00004	0.0119	0.0500	434.0	3,000	8	6.00	5.00	Yes	Yes
VOC	4.3929	18.7243	0.0000	0.0000	0.0000	0.0000	0.7125	2.3253	0.7779	2.5388	0.0378	0.1355	5.9211	23.7239							

PIONEER NATURAL RESOURCES USA, INC.
DRIVER 37-36H TANK BATTERY
NAAQS IMPACTS EVALUATION

Hourly NAAQS ($\mu\text{g}/\text{m}^3$): 188
Annual NAAQS ($\mu\text{g}/\text{m}^3$): 100

FIN	NO _x Emissions		NO ₂ /NO _x Ratio	NO ₂ Emissions		Stack Parameters		Generic Modeling Results ($\mu\text{g}/\text{m}^3/\text{lb}/\text{hr}$)	Weighted Ratio of Emissions (WR)		Calculated NAAQS	
	(lb/hr)	(T/yr)		(lb/hr)	(T/yr)	Distance (ft)	Height (ft)		(hourly)	(annual)	(lb/hr)	(T/yr)
HT1 / Heater Treater 1	0.1656	0.7253	0.80	0.1325	0.5803	50	18.50	469	1.15%	2.40%	0.0046	0.2804
HT2 / Heater Treater 2	0.1656	0.7253	0.80	0.1325	0.5803	50	18.50	469	1.15%	2.40%	0.0046	0.2804
LH / Line Heater	0.1656	0.3627	0.80	0.1325	0.2901	50	18.50	469	1.15%	1.20%	0.0046	0.1402
ENG1 / Compressor Engine 1	3.0424	13.3257	0.20	0.6085	2.6651	50	22.00	10	21.11%	44.13%	3.9679	241.6041
ENG2 / Compressor Engine 2	3.0424	13.3257	0.20	0.6085	2.6651	50	22.00	10	21.11%	44.13%	3.9679	241.6041
FL1 / Flare	0.2137	0.7314	0.80	0.1710	0.5852	50	40.00	23	1.48%	2.42%	0.1212	5.7659
MSS / MSS Flare Operations	7.6195	1.0012	0.80	6.0956	0.8010	50	40.00	23	52.86%	3.32%	4.3206	7.8924
Total	14.4149	30.1974		7.8810	8.1671						12.3915	497.5676

Impacts Analysis:

	Hourly	Annual
Calculated NO _x Emissions:	7.88	8.17
Calculated NO _x NAAQS:	12.39	497.57

The site's air contaminant maximum predicted concentrations are less than the appropriate NAAQS standard. Therefore the impacts analysis meets the requirements of the Standard

Calculations, Impact factors such as G, WR, and equations are from the 30 TAC §106.352 Tables:

Table 1: Emission Impact Tables Limits and Descriptions

Table 2: Fugitives and Process Vents Table

Table 3: Flares and Thermal Destruction Devices

Table 5D: Engines Greater Than 1,000 and Less Than or Equal to 1,500 hp