



February 27, 2017

Ms. Caryn Owens
MDEQ-AQD Cadillac District Office
120 West Chapin Street
Cadillac, Michigan 49601-2158

Re: **Response to Violation Notice –dated January 31, 2017**
Canada Creek Ranch CPF – SRN: N7194, PTI 85-05
Section 6, T31N-R02E
Briley Township, Montmorency County, Michigan

Dear Ms. Owens:

This letter is in response the January 31, 2017 MDEQ Violation Notice regarding Permit to Install (PTI) 85-05 SRN N7194.

- In response to Rule/Permit Condition Violated – R336.1911/ Special Condition (SC) 1.1
 - Attached is the revised MAPMP dated February 17, 2017 with the CAT G3306NA 145 hp engine information

- In response to Rule/Permit Condition Violated – R336.1911/ SC 1.4
 - Attached is the CAT 3306 emission calculations demonstrating less emissions than the former engine (CAT 3516LE 1400hp)

As stated in the MDEQ Violation Notice, the date the CAT 3516LE was removed and the CAT 3306 was installed was 2013. Ward Lake Energy (WLE) failed to contact the MDEQ at that time and has revised management policies to ensure that future communication between WLE and MDEQ will be conducted prior to engine replacement.

If you should have questions, or require additional information for this project, please do not hesitate to contact Lisa Harriger-Jones at ECT at 231.946.8200 or lharriger@ectinc.com.

Sincerely,
Ward Lake Energy


Jeff Riling
Michigan Manager

Attachments

RECEIVED DEQ/AQD	
MAR 01 2017	
MACES <input type="checkbox"/>	FILE:
MAERS <input type="checkbox"/>	Manila
CC:	

COMPRESSOR ENGINE EMISSIONS - RECORD KEEPING

Facility: Canada Creek Ranch CPF
Operator: Ward Lake Energy
PTI / SRN: 85-05 / N7194
Compressor Engine: Caterpillar G3306NA, 145 hp, 4 stroke rich burn
Engine Manufacture Date: January 17, 2012
Control Device: Catalytic Converter
Emission Unit: EUENGINE (no emission limits; emission limits are for FGFACILITY)
NO_x Permit Limit: 89 tpy
CO Permit Limit: 89 tpy
Fuel Type: Natural (field) gas

Input Parameters:

Engine Power = 145 bhp (from manufacturer)
Fuel Consumption = 7,543 btu/bhp-hr (from manufacturer)
Max Heat Input = 1,093,735 btu/hr (Power x Fuel Consumption)
Heating Value = 979 btu/scf (from gas analysis)
Emission Factor NO_x = 0.50 g/bhp-hr (from manufacturer)
Emission Factor CO = 1.00 g/bhp-hr (from manufacturer)
Corrected EF NO_x = 0.00014 lb/scf (Vendor EF x Heating Value / Fuel Consumption) / Conversion Factor g/lb
Corrected EF CO = 0.00029 lb/scf (Vendor EF x Heating Value / Fuel Consumption) / Conversion Factor g/lb
Conversion Factor = 1,000 scf/mscf
Conversion Factor = 1,000,000 scf/mmscf
Conversion Factor = 2,000 lb/ton
Conversion Factor = 453.59 g/lb

Potential Fuel Use Calculation:

Fuel Use (mmscf/yr) = 9737 (Max Heat Input x 8760 hr/yr / Heating Value) / Conversion Factor scf/mmscf

Actual Emission Calculations:

Emissions (tons) = (Fuel Use x Conversion Factor scf/mmscf x Corr Vendor EF) / Conversion Factor lb/ton

Month	Year	Recycled (tons)	CO ₂ (tons)	NO _x (tons)	NO _x (lb/ton)	CO (tons)	CO ₂ (lb/ton)
January	2013	0	0	0.000	0.000	0.000	0.000
February		0	0	0.000	0.000	0.000	0.000
March		0	0	0.000	0.000	0.000	0.000
April		0	0	0.000	0.000	0.000	0.000
May		0	0	0.000	0.000	0.000	0.000
June		0	0	0.000	0.000	0.000	0.000
July		0	0	0.000	0.000	0.000	0.000
August		0	0	0.000	0.000	0.000	0.000
September		0	0	0.000	0.000	0.000	0.000
October		0	0	0.000	0.000	0.000	0.000
November		0	0	0.000	0.000	0.000	0.000
December		0	0	0.000	0.000	0.000	0.000
2013 Total		0	0	0.000	0.000	0.000	0.000
January	2014	895	895	0.064	0.064	0.128	0.128
February		811	1,706	0.058	0.122	0.116	0.244
March		899	2,605	0.064	0.186	0.129	0.373
April		868	3,473	0.062	0.248	0.124	0.497
May		899	4,372	0.064	0.313	0.129	0.625
June		870	5,242	0.062	0.375	0.124	0.750
July		870	6,112	0.062	0.437	0.124	0.874
August		892	7,004	0.064	0.501	0.128	1.002
September		897	7,901	0.064	0.565	0.128	1.130
October		899	8,800	0.064	0.630	0.129	1.259
November		870	9,670	0.062	0.692	0.124	1.383
December		699	10,369	0.050	0.742	0.100	1.483
2014 Total		10,369	10,369	0.742	0.742	1.483	1.483
January	2015	899	10,373	0.064	0.742	0.129	1.484
February		789	10,351	0.056	0.740	0.113	1.481
March		899	10,351	0.064	0.740	0.129	1.481
April		870	10,353	0.062	0.741	0.124	1.481
May		899	10,353	0.064	0.741	0.129	1.481
June		870	10,353	0.062	0.741	0.124	1.481
July		899	10,382	0.064	0.743	0.129	1.485
August		899	10,389	0.064	0.743	0.129	1.486
September		790	10,282	0.057	0.736	0.113	1.471
October		870	10,253	0.062	0.733	0.124	1.467
November		870	10,253	0.062	0.733	0.124	1.467
December		891	10,445	0.064	0.747	0.127	1.494
2015 Total		10,445	10,445	0.747	0.747	1.494	1.494

COMPRESSOR ENGINE EMISSIONS - RECORD KEEPING

Facility: Canada Creek Ranch CPF
Operator: Ward Lake Energy
PTI / SRN: 85-05 / N7194
Compressor Engine: Caterpillar G3306NA, 145 hp, 4 stroke rich burn

Month	Year	Facility (hp)	Facile 2016 (ton)	NO _x Emissions (ton)	NO _x Emissions 2016 (ton)	CO Emissions (ton)	CO Emissions 2016 (ton)
January	2016	894	10,440	0.064	0.747	0.128	1.494
February		834	10,485	0.060	0.750	0.119	1.500
March		892	10,478	0.064	0.750	0.128	1.499
April		870	10,478	0.062	0.750	0.124	1.499
May		899	10,478	0.064	0.750	0.129	1.499
June		870	10,478	0.062	0.750	0.124	1.499
July		899	10,478	0.064	0.750	0.129	1.499
August		895	10,474	0.064	0.749	0.128	1.499
September		870	10,554	0.062	0.755	0.124	1.510
October		899	10,583	0.064	0.757	0.129	1.514
November		870	10,583	0.062	0.757	0.124	1.514
December		895	10,587	0.064	0.757	0.128	1.515
2016 Total		10,387		0.737		1.505	