December 10th, 2012

WPXENERGY

RECEIVED
JAN 03 2013
3AP20

Muhammad Zaman
Environmental Program Manager
Air Quality Program
DEP Northcentral Regional Office
208 West Third St., Suite 101
Williamsport, PA 17701

RE: Initial Notification for one Caterpillar 3516 ULB Compressor Engine (CDM Unit 597)
NSPS JJJJ – Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
RW Gathering, LLC. – Moshannon Compressor Station
Cooper Township, Clearfield County, PA
GP5-17-488C

Dear Mr. Zaman:

RW Gathering, LLC (RW Gathering) recently installed a reciprocating compressor engine at their Moshannon Compressor Station in Cooper Township, Clearfield County, Pennsylvania. This reciprocating compressor engine has a rated horsepower greater than 500 and a reconstructed date of 5/21/2012. Therefore, the recently installed engine is an affected source under Title 40 CFR 60, Subpart JJJJ (*Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*).

This reciprocating compressor engine located at the Moshannon Compressor Station is not certified. Therefore, pursuant to 40 CFR §60, Subpart JJJJ (*Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*) and §60.7 of the General Provisions (regarding Notifications and Record Keeping), this letter provides an initial notification for the installation of a reciprocating compressor engine at the RW Gathering Moshannon Compressor Station.

The following are provided in accordance with the initial notification information requirements of §60.4245(c):

1. Name and address of the owner or operator:
   RW Gathering LLC
   6000 Town Center Blvd., Suite 300
   Canonsburg, PA 15317

2. Address of the affected source:
   Moshannon Compressor Station
   Summit Road
   Clearfield, PA 16830

3. Engine Information:
   Engine Displacement: 4,230 cubic inches
   Engine Serial Number: WPW02610
   Manufacture Date: Original 12/9/2008; Remanufactured 5/21/2012

The remaining information required by §60.4245(c)(3)-(5) is provided in the manufacturer's specification sheet and catalyst specification sheet, provided in Attachment 1.

RW Gathering will perform all required testing and monitoring and will maintain and report all necessary records according to NSPS JJJJ requirements. By meeting the requirements of 40 CFR §60, Subpart JJJJ (*Standards of Performance for Stationary Spark Ignition Internal Combustion Engines*), this engine also shows compliance with 40 CFR Section §63, Subpart ZZZZ (*National Emissions Standards for hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*) for stationary reciprocating internal combustion engines located at an area source of hazardous air pollutants under Section §63.6590(c).

Thank you for your assistance in this matter. Feel free to contact either Mr. Todd Thompson, Environmental Team Lead, at 918-573-9760 or myself at 303-260-4538 should you have any questions or if you require additional information.

Sincerely,

Jonathan Torizzo
Environmental Spec Staff E&P

cc: Diana Esher, US EPA Region 3
Todd Thompson, WPX Energy, LLC
Rick Begley, Division of Source Testing and Monitoring, PaDEP

Attachments

ATTACHMENT 1. ENGINE AND CATALYST SPECIFICATION SHEETS

G3516B

GAS COMPRESSION APPLICATION

GAS ENGINE SITE SPECIFIC TECHNICAL DATA

CATERPILLAR®

ENGINE SPEED (rpm):	1400
COMPRESSION RATIO:	8:1
AFTERCOOLER - STAGE 2 INLET (°F):	130
AFTERCOOLER - STAGE 1 INLET (°F):	201
JACKET WATER OUTLET (°F):	210
ASPIRATION:	TA
COOLING SYSTEM:	JW+OC+1AC, 2AC
IGNITION SYSTEM:	ADEM3
EXHAUST MANIFOLD:	DRY
COMBUSTION:	Ultra Lean Burn
NOx EMISSION LEVEL (g/bhp-hr NOx):	0.5
SET POINT TIMING:	30

FUEL SYSTEM:	CAT WIDE RANGE WITH AIR FUEL RATIO CONTROL
SITE CONDITIONS:	
FUEL:	Nat Gas
FUEL PRESSURE RANGE(psig):	7.0-50.0
FUEL METHANE NUMBER:	84.8
FUEL LHV (Btu/scf):	905
ALTITUDE(ft):	500
MAXIMUM INLET AIR TEMPERATURE(°F):	77
STANDARD RATED POWER:	1380 bhp@1400rpm

				MAXIMUM RATING	SITE RATING AT MAXIMUM INLET AIR TEMPERATURE		
RATING		**NOTES**	**LOAD**	**100%**	**100%**	**75%**	**50%**
ENGINE POWER	(WITHOUT FAN)	(1)	bhp	1380	1380	1035	690
INLET AIR TEMPERATURE			°F	77	77	77	77
ENGINE DATA							
FUEL CONSUMPTION (LHV)		(2)	Btu/bhp-hr	7443	7443	7972	8562
FUEL CONSUMPTION (HHV)		(2)	Btu/bhp-hr	8256	8256	8843	9498
AIR FLOW (77°F, 14.7 psia)	(WET)	(3)(4)	scfm	3126	3126	2452	1715
AIR FLOW	(WET)	(3)(4)	lb/hr	13862	13862	10874	7602
INLET MANIFOLD PRESSURE		(5)	In Hg(abs)	94.6	94.6	76.8	54.0
EXHAUST TEMPERATURE - ENGINE OUTLET		(6)	°F	992	992	986	1006
EXHAUST GAS FLOW (@engine outlet temp, 14.5 psia)	(WET)	(7)(4)	ft3/min	9126	9126	7138	5065
EXHAUST GAS MASS FLOW	(WET)	(7)(4)	lb/hr	14380	14380	11290	7900
EMISSIONS DATA - ENGINE OUT							
NOx (as NO2)		(8)(9)	g/bhp-hr	0.50	0.50	0.50	0.50
CO		(8)(9)	g/bhp-hr	2.43	2.43	2.61	2.56
THC (mol. wt. of 15.84)		(8)(9)	g/bhp-hr	4.77	4.77	5.11	5.19
NMHC (mol. wt. of 15.84)		(8)(9)	g/bhp-hr	0.72	0.72	0.77	0.78
NMNEHC (VOCs) (mol. wt. of 15.84)		(8)(9)(10)	g/bhp-hr	0.48	0.48	0.51	0.52
HCHO (Formaldehyde)		(8)(9)	g/bhp-hr	0.44	0.44	0.43	0.42
CO2		(8)(9)	g/bhp-hr	474	474	506	549
EXHAUST OXYGEN		(8)(11)	% DRY	9.0	9.0	8.7	8.3
HEAT REJECTION							
HEAT REJ. TO JACKET WATER (JW)		(12)	Btu/min	23412	23412	21533	19930
HEAT REJ. TO ATMOSPHERE		(12)	Btu/min	6110	6110	5092	4074
HEAT REJ. TO LUBE OIL (OC)		(12)	Btu/min	4475	4475	3978	3363
HEAT REJ. TO A/C - STAGE 1 (1AC)		(12)(13)	Btu/min	10046	10046	8308	2813
HEAT REJ. TO A/C - STAGE 2 (2AC)		(12)(13)	Btu/min	5358	5358	5063	3334
COOLING SYSTEM SIZING CRITERIA							
TOTAL JACKET WATER CIRCUIT (JW+OC+1AC)		(13)(14)	Btu/min	41672			
TOTAL AFTERCOOLER CIRCUIT (2AC)		(13)(14)	Btu/min	5626			
A cooling system safety factor of 0% has been added to the cooling system sizing criteria.							

CONDITIONS AND DEFINITIONS

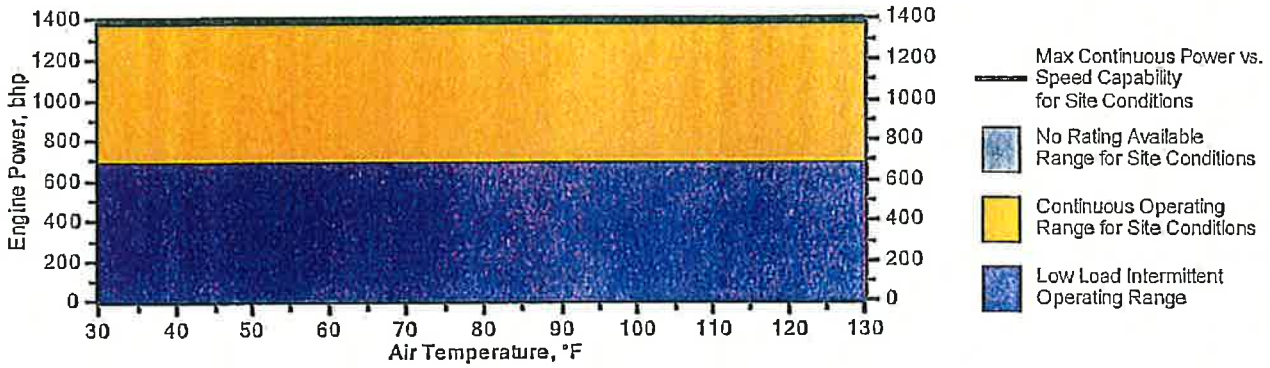
Engine rating obtained and presented in accordance with ISO 3046/1, adjusted for fuel, site altitude and site inlet air temperature. 100% rating at maximum inlet air temperature is the maximum engine capability for the specified fuel at site altitude and maximum site inlet air temperature. Max. rating is the maximum capability for the specified fuel at site altitude and reduced inlet air temperature. Lowest load point is the lowest continuous duty operating load allowed. No overload permitted at rating shown.

For notes information consult page three.

PREPARED BY:
Data generated by Gas Engine Rating Pro Version 4.01.01
Ref. Data Set DM8800-05-001, Printed 01May2012

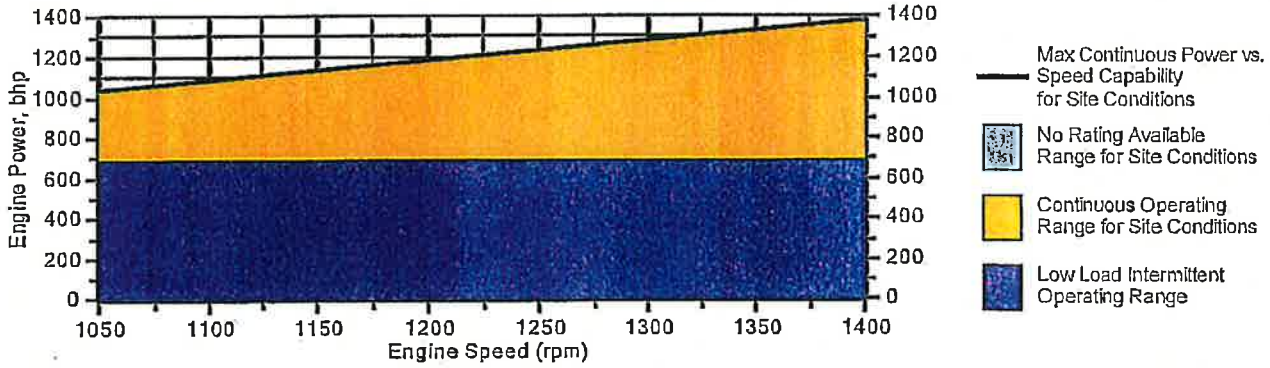
Engine Power vs. Inlet Air Temperature

Data represents temperature sweep at 500 ft and 1400 rpm



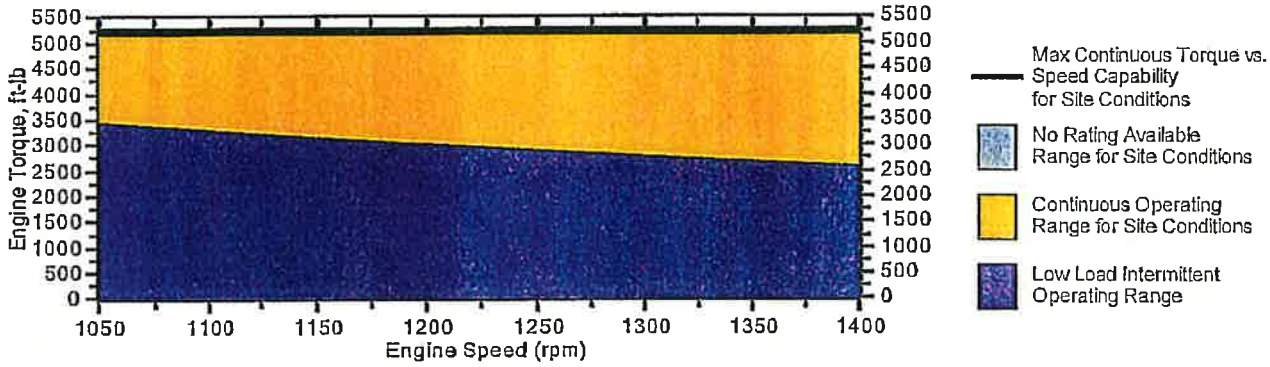
Engine Power vs. Engine Speed

Data represents speed sweep at 500 ft and 77 °F



Engine Torque vs. Engine Speed

Data represents speed sweep at 500 ft and 77 °F



Note: At site conditions of 500 ft and 77°F inlet air temp., constant torque can be maintained down to 1050 rpm. The minimum speed for loading at these conditions is 1050 rpm.

NOTES

1. Engine rating is with two engine driven water pumps. Tolerance is ± 3% of full load.

2. Fuel consumption tolerance is ± 3.0% of full load data.

3. Air flow value is on a 'wet' basis. Flow is a nominal value with a tolerance of ± 5 %.

4. Inlet and Exhaust Restrictions must not exceed A&I limits based on full load flow rates from the standard technical data sheet.

5. Inlet manifold pressure is a nominal value with a tolerance of ± 5 %.

6. Exhaust temperature is a nominal value with a tolerance of (+)63°F, (-)54°F.

7. Exhaust flow value is on a "wet" basis. Flow is a nominal value with a tolerance of ± 6 %.

8. Emissions data is at engine exhaust flange prior to any after treatment.

9. Emission values are based on engine operating at steady state conditions. Fuel methane number cannot vary more than ± 3. Values listed are higher than nominal levels to allow for instrumentation, measurement, and engine-to-engine variations. They indicate "Not to Exceed" values. THC, NMHC, and NMNEHC do not include aldehydes. An oxidation catalyst may be required to meet Federal, State or local CO or HC requirements.

10. VOCs - Volatile organic compounds as defined in US EPA 40 CFR 60, subpart JJJJ

11. Exhaust Oxygen level is the result of adjusting the engine to operate at the specified NOx level. Tolerance is ± 0.5.

12. Heat rejection values are nominal. Tolerances, based on treated water, are ± 10% for jacket water circuit, ± 50% for radiation, ± 20% for lube oil circuit, and ± 5% for aftercooler circuit.

13. Aftercooler heat rejection includes an aftercooler heat rejection factor for the site elevation and inlet air temperature specified. Aftercooler heat rejection values at part load are for reference only. Do not use part load data for heat exchanger sizing.

14. Cooling system sizing criteria are maximum circuit heat rejection for the site, with applied tolerances.

Constituent	Abbrev	Mole %	Norm
Water Vapor	H2O	0.0000	0.0000
Methane	CH4	92.2700	92.2700
Ethane	C2H6	2.5000	2.5000
Propane	C3H8	0.5000	0.5000
Isobutane	iso-C4H1O	0.0000	0.0000
Norbutane	nor-C4H1O	0.2000	0.2000
Isopentane	iso-C5H12	0.0000	0.0000
Norpentane	nor-C5H12	0.1000	0.1000
Hexane	C6H14	0.0500	0.0500
Heptane	C7H16	0.0000	0.0000
Nitrogen	N2	3.4800	3.4800
Carbon Dioxide	CO2	0.9000	0.9000
Hydrogen Sulfide	H2S	0.0000	0.0000
Carbon Monoxide	CO	0.0000	0.0000
Hydrogen	H2	0.0000	0.0000
Oxygen	O2	0.0000	0.0000
Helium	HE	0.0000	0.0000
Neopentane	neo-C5H12	0.0000	0.0000
Octane	C8H18	0.0000	0.0000
Nonane	C9H20	0.0000	0.0000
Ethylene	C2H4	0.0000	0.0000
Propylene	C3H6	0.0000	0.0000
TOTAL (Volume %)		100.0000	100.0000

Fuel Makeup:	Nat Gas
Unit of Measure:	English

Calculated Fuel Properties

Caterpillar Methane Number:	84.8
Lower Heating Value (Btu/scf):	905
Higher Heating Value (Btu/scf):	1004
WOBBE Index (Btu/scf):	1168
THC: Free Inert Ratio:	21.83
Total % Inerts (% N2, CO2, He):	4.38%
RPC (%) (To 905 Btu/scf Fuel):	100%
Compressibility Factor:	0.998
Stoich A/F Ratio (Vol/Vol):	9.45
Stoich A/F Ratio (Mass/Mass):	15.75
Specific Gravity (Relative to Air):	0.600
Specific Heat Constant (K):	1.313

CONDITIONS AND DEFINITIONS

Caterpillar Methane Number represents the knock resistance of a gaseous fuel. It should be used with the Caterpillar Fuel Usage Guide for the engine and rating to determine the rating for the fuel specified. A Fuel Usage Guide for each rating is included on page 2 of its standard technical data sheet.

RPC always applies to naturally aspirated (NA) engines, and turbocharged (TA or LE) engines only when they are derated for altitude and ambient site conditions.

Project specific technical data sheets generated by the Caterpillar Gas Engine Rating Pro program take the Caterpillar Methane Number and RPC into account when generating a site rating.

Fuel properties for Btu/scf calculations are at 60F and 14.696 psia.

Caterpillar shall have no liability in law or equity, for damages, consequently or otherwise, arising from use of program and related material or any part thereof.

FUEL LIQUIDS

Field gases, well head gases, and associated gases typically contain liquid water and heavy hydrocarbons entrained in the gas. To prevent detonation and severe damage to the engine, hydrocarbon liquids must not be allowed to enter the engine fuel system. To remove liquids, a liquid separator and coalescing filter are recommended, with an automatic drain and collection tank to prevent contamination of the ground in accordance with local codes and standards.

To avoid water condensation in the engine or fuel lines, limit the relative humidity of water in the fuel to 80% at the minimum fuel operating temperature.

772 Airfield Lane
Sheridan, WY 82801
Office: 307.673.0883
EST@emittechnologies.com

Customer Generated

INFORMATION PROVIDED BY CATERPILLAR

Engine	G3516B
Horsepower	1380
RPM:	1400
Compression Ratio:	8.0:1
Exhaust Flow Rate:	9126
Exhaust Temperature:	992
Reference:	DM8800-04
Fuel:	Natural Gas
Annual Operating Hours:	8760

Uncontrolled Emissions

NOx:	0.50 g/bhp-hr
CO:	2.43 g/bhp-hr
THC:	4.77 g/bhp-hr
NMHC:	0.72 g/bhp-hr
NMNEHC:	0.48 g/bhp-hr
HCHO:	0.44 g/bhp-hr
Oxygen:	N/A

Post Catalyst Emissions

NOx:	Unaffected
CO:	0.170 g/bhp-hr
VOC:	0.240 g/bhp-hr
HCHO	0.106 g/bhp-hr

CONTROL EQUIPMENT

Catalytic Converter

Manufacturer:	GT
Model	201VO-3-6112

Catalyst Element

Model:	RT-2415-Z
Element Quantity	2
Catalyst Type	Oxidation, Precious group metals
Substrate:	Brazed
Manufacturer	EMIT Technologies, Inc
Element Size	Rectangle, 3.50" x 24.00" x 15.00"

772 Airfield Lane
Sheridan, WY 82801
Office: 307.673.0883
EST@emittechnologies.com

WARRANTY

EMIT Technologies,Inc. warrants that the goods supplied will be free from defects in workmanship by EMIT Technologies, Inc. for a period of one (1) year from date of shipment. EMIT Technologies, Inc. will not be responsible for any defects which result from improper use, neglect, failure to properly maintain or which are attributable to defects, errors or omissions in any drawings, specifications, plans or descriptions, whether written or oral, supplied to EMIT Technologies, Inc. by Buyer.

Catalyst performance will be guaranteed for a period of 1 year from installation, or 8760 operating hours, whichever comes first. The performance guarantee shall not cover the effects of excessive ash masking due to operation at low load, improper engine maintenance, or inappropriate lubrication oil. The performance guarantee shall not cover the effects of continuous engine misfires (cylinder or ignition) exposing the catalyst to excessive exothermic reaction temperatures.

The exhaust temperature operating range at the converter inlet is 600°F minimum for oxidation catalyst and 750 °F for NSCR catalyst and 1250°F maximum.

If a high temperature shut down switch is not installed, thermal deactivation of catalyst at temperatures above 1300 °F is not covered.

The catalyst conversion efficiencies (% reduction) will be guaranteed for engine loads of 50 to 100 percent.

Engine lubrication oil shall contain less than 0.6% ash (by weight) with a maximum allowable specific oil consumption of 0.01 gal/bhp-hr. The maximum ash loading on the catalyst shall be limited to 350 g/m3. Phosphorous and zinc additives are limited to 0.03% (by weight).

The catalyst must not be exposed to the following know poisoning agents, including: iron, nickel, sodium, chromium, arsenic, zinc, lead, phosphorous, silicon, potassium, magnesium, copper, tin, and mercury. Total poison concentrations in the gas are limited to 0.3 ppm.