MARSHALL UNIVERSITY
www.marshall.edu

Environmental Health & Safety

April 6, 2016

WV Department of Environmental Protection

WVDEP Division of Air Quality
601 57th Street SE
Charleston, WV 25304-2345

Subject: Air Permit

Marshall University has conducted a survey regarding its point source air emissions in preparation for submitting an air quality permit application to the West Virginia Division of Air Quality (DAQ). This included evaluating qualified sources, such as emergency generators and boilers. As a result of this analysis, and given our understanding of DAQ rules and policies, Marshall University has five (5) emergency generators and 47 natural gas-fired boilers that require submission in the attached application.

The emergency generators that require a permit are as follows:

1. **1991 300 kW Kohler (ROZD) at the Joan C. Edwards Stadium**
2. **2015 500 kW Caterpillar (LC6) at the Weisburg Family Applied Engineering Complex**
3. **2006 1250 kW Caterpillar (3512) at the Robert C. Byrd Biotechnology Building**
4. **1982 100 kW Kohler (100RZ) at the Science Building**
5. **2003 150 kW Cummins (GGKD) at Harless Dinning Hall**

Using emission specifications provided by the manufacturer or estimates calculated using emission factors from the U.S. EPA's AP-42, *Compilation of Air Pollutant Emissions Factors, 5th edition* (specifically Chapter 3-"Stationary Internal Combustion Sources", or in the case of natural gas-fired boilers, Chapter 1, Section 1.4-"Natural Gas Combustion"), pollutants for all of the point sources at Marshall University were calculated. The Potential to Emit (PTE) for this site, considering <u>all</u> sources, was calculated based on a PTE using 500 hours per year for the emergency generators and a PTE using 8,760 hours per year for each natural gas-fired boiler. As a result of this applicability determination, it was determined that the highest criteria pollutant at Marshall University is NOx at 71 Tons per Year (TPY), which is below the Title V threshold of 100 TPY. A list of the emergency generators and boilers that are below minor source permitting thresholds is attached. If you have any questions or comments please do not hesitate.

Non Permitted Generator Calculations

																				PPH						TPY					
	Year Installed	Fuel Type	Phase	Generator KW	Engine HP	Engine KW	Manufacturer	Nox	Units	CO	Units	PM	Units	VOC	Units	SO2	Units	CH2O	Units	NOx	CO	PM	VOC	SO2	CH2O	NOx	CO	PM	VOC	SO2	CH2O
Building																															
Henderson Center	2001	Diesel	3 phase	300	465	346.7505	ONAN	8.87	g/hr	1.2	g/hr	0.3	g/hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	0.0195	0.0026	0.0007	1.1500	0.9533	0.5487	0.0049	0.0007	0.0002	0.2875	0.2383	0.1372
Parking Garage 3rd	2002	Diesel	3 phase	35	56	41.7560	ONAN	5.6	g/hr	3.7	g/hr	0.3	g/hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	0.0123	0.0081	0.0007	0.1353	0.1148	0.0681	0.0031	0.0020	0.0002	0.0346	0.0287	0.0165
Fine Arts Building	1993	Diesel	3 phase	230	375	279.6375	ONAN	10.5	g/hr	0.6	g/hr	0.5	g/hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	0.0231	0.0013	0.0011	0.9263	0.7688	0.4425	0.0058	0.0003	0.0003	0.2316	0.1922	0.1106
Darby Hall	1981	Diesel	3 phase	22	60	44.742	Kohler	0.031	lb/hp-hr	0.0065	lb/hp-hr	0.0022	lb/hp-hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	1.8600	0.4080	0.1320	0.1482	0.1230	0.0708	0.4650	0.1020	0.0330	0.0371	0.0308	0.0177
Drinko Library	1999	Diesel	3 phase	750	1200	894.84	ONAN	6.5	g/hr	0.95	g/hr	0.19	g/hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	0.0143	0.0021	0.0004	2.9640	2.4600	1.4160	0.0036	0.0005	0.0001	0.7410	0.6150	0.3540
Smith Hall	2006	Diesel	3 phase	500	755	563.0035	Cummins	4.3	g/hr	0.4	g/hr	0.1	g/hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	0.0095	0.0009	0.0002	1.6334	1.3474	0.7756	0.0024	0.0002	0.0001	0.4059	0.3369	0.1939
Parking Garage 6th Avenue	2012	Diesel	3 phase	150	324	241.6068	Onan	4	g/hr	0.7	g/hr	0.2	g/hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	0.0088	0.0015	0.0004	0.6003	0.6642	0.3823	0.0022	0.0004	0.0001	0.2001	0.1661	0.0956
Rec Center	2008	Diesel	3 phase	350	470	395	Cummins	3.3	g/KW-hr	0.5869	g/KW-hr	0.0786	g/KW-hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	0.0056	0.0009	0.0001	1.1610	0.9635	0.5546	0.0014	0.0002	0.0000	0.2903	0.2409	0.1387
Quillicken Hall	2004	NG	3 phase	7	30	22.371	ONAN	4.08	lb/MMBtu	0.317	lb/MMBtu	0.000771	lb/MMBtu	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	1.2240	0.0951	0.0002	0.0354	0.0002	0.0158	0.3060	0.0238	0.0001	0.0089	0.0000	0.0040
Old Main	2002	NG	3 phase	45	75	55.9275	Olympian	7.7	g/hp-hr	23.4	g/hp-hr	0	g/hp-hr	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	1.2720	3.8656	0.0000	0.0585	0.0004	0.0396	0.3180	0.9664	0.0000	0.0291	0.0001	0.0099
Prichard Hall	2004	NG	3 phase	10.7	60	44.742	ONAN	4.08	lb/MMBtu	0.317	lb/MMBtu	0.000771	lb/MMBtu	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	2.4480	0.1902	0.0005	0.0708	0.0004	0.0317	0.6120	0.0476	0.0001	0.0177	0.0001	0.0079
Morrow Library	2003	NG	3 phase	85	136	101.4152	ONAN	12.4	g/hp-hr	0	g/hp-hr	0.000771	lb/MMBtu	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	3.7145	0.0000	0.0010	0.1605	0.0006	0.0718	0.9286	0.0000	0.0003	0.0401	0.0002	0.0180
Harris Hall	2010	NG	3 phase	75	153.2	114.24124	Onan	2.7	g/kW-hr	4.4	g/kW-hr	0.000771	lb/MMBtu	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	0.6794	1.1072	0.0012	0.1808	0.0009	0.0809	0.1899	0.2768	0.0003	0.0452	0.0002	0.0202
Visual Arts Ctr	2014	NG	3 phase	250	383	285.6031	Onan	2	g/hp-hr	4	g/hp-hr	0.000771	lb/MMBtu	1	g/hp-hr	0.000588	lb/MMBtu	0.0528	lb/MMBtu	1.2582	2.5163	0.0030	0.6291	0.0023	0.2022	0.3145	0.6291	0.0007	0.1573	0.0006	0.0506
IAF	2014	NG	3 phase	175.5	64	47.7248	Cummins	4.08	lb/MMBtu	0.317	lb/MMBtu	0.000771	lb/MMBtu	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	2.6112	0.2029	0.0005	0.0759	0.0004	0.0338	0.6528	0.0507	0.0001	0.0189	0.0001	0.0084
Holderby Hall	2013	NG	3 phase	45	73.5	54.00325	Cummins	4.08	lb/MMBtu	0.317	lb/MMBtu	0.000771	lb/MMBtu	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	2.9580	0.2298	0.0006	0.0856	0.0004	0.0383	0.7395	0.0575	0.0001	0.0214	0.0001	0.0096
Twin Towers	1968	NG	3 phase	75	136	101.4152	Kohler	4.08	lb/MMBtu	0.317	lb/MMBtu	0.000771	lb/MMBtu	0.118	lb/MMBtu	0.000588	lb/MMBtu	0.0528	lb/MMBtu	5.5488	0.4311	0.0010	0.1605	0.0006	0.0718	1.3872	0.1078	0.0003	0.0401	0.0002	0.0180
Buskirk Hall	2013	NG	3 phase	80	136	101.4152	Kohler	2	g/hp-hr	4	g/hp-hr	0.000771	lb/MMBtu	1	g/hp-hr	0.000588	lb/MMBtu	0.0528	lb/MMBtu	0.5981	1.1962	0.0010	0.2996	0.0006	0.0718	0.1496	0.2996	0.0003	0.0749	0.0002	0.0180
																									Total	6.0066	2.5655	0.0063	2.6744	1.8506	1.2246

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF AIR QUALITY

601 57th Street, SE
Charleston, WV 25304
(304) 926-0475
www.dep.wv.gov/daq

APPLICATION FOR NSR PERMIT AND TITLE V PERMIT REVISION (OPTIONAL)

PLEASE CHECK ALL THAT APPLY TO **NSR (45CSR13)** (IF KNOWN):

☐ **CONSTRUCTION** ☐ **MODIFICATION** ☐ **RELOCATION**
☐ **CLASS I ADMINISTRATIVE UPDATE** ☐ **TEMPORARY**
☐ **CLASS II ADMINISTRATIVE UPDATE** ☒ **AFTER-THE-FACT**

PLEASE CHECK TYPE OF **45CSR30 (TITLE V)** REVISION (IF ANY):

☐ **ADMINISTRATIVE AMENDMENT** ☐ **MINOR MODIFICATION**
☐ **SIGNIFICANT MODIFICATION**

IF ANY BOX ABOVE IS CHECKED, INCLUDE TITLE V REVISION INFORMATION AS **ATTACHMENT S** TO THIS APPLICATION

FOR TITLE V FACILITIES ONLY: Please refer to "Title V Revision Guidance" in order to determine your Title V Revision options (Appendix A, "Title V Permit Revision Flowchart") and ability to operate with the changes requested in this Permit Application.

Section I. General

1. Name of applicant *(as registered with the WV Secretary of State's Office):*
Marshall University

2. Federal Employer ID No. ***(FEIN):***
556000789

3. Name of facility *(if different from above):*
Marshall University

4. The applicant is the:
☒ **OWNER** ☐ **OPERATOR** ☐ **BOTH**

5A. Applicant's mailing address:
One John Marshall Drive
Huntington, WV 25755

5B. Facility's present physical address:
One John Marshall Drive
Huntington, WV 25755

6. **West Virginia Business Registration.** Is the applicant a resident of the State of West Virginia? ☐ **YES** ☒ **NO**

- If **YES,** provide a copy of the **Certificate of Incorporation/Organization/Limited Partnership** (one page) including any name change amendments or other Business Registration Certificate as **Attachment A.**
- If **NO,** provide a copy of the **Certificate of Authority/Authority of L.L.C./Registration** (one page) including any name change amendments or other Business Certificate as **Attachment A.**

7. If applicant is a subsidiary corporation, please provide the name of parent corporation:

8. Does the applicant own, lease, have an option to buy or otherwise have control of the *proposed site?* ☒ **YES** ☐ **NO**

- If **YES,** please explain: Marshall University owns the property.
- If **NO,** you are not eligible for a permit for this source.

9. Type of plant or facility (stationary source) to be **constructed, modified, relocated, administratively updated** or **temporarily permitted** (e.g., coal preparation plant, primary crusher, etc.): Emergency generators

10. North American Industry Classification System **(NAICS)** code for the facility:
611310

11A. DAQ Plant ID No. (for existing facilities only):
N/A

11B. List all current 45CSR13 and 45CSR30 (Title V) permit numbers associated with this process (for existing facilities only):
N/A

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

24. Provide **Material Safety Data Sheets (MSDS)** for all materials processed, used or produced as **Attachment H.**

– For chemical processes, provide a MSDS for each compound emitted to the air.

25. Fill out the **Emission Units Table** and provide it as **Attachment I.**

26. Fill out the **Emission Points Data Summary Sheet (Table 1 and Table 2)** and provide it as **Attachment J.**

27. Fill out the **Fugitive Emissions Data Summary Sheet** and provide it as **Attachment K.**

28. Check all applicable **Emissions Unit Data Sheets** listed below:

☐ Bulk Liquid Transfer Operations
☐ Chemical Processes
☐ Concrete Batch Plant
☐ Grey Iron and Steel Foundry
☐ Haul Road Emissions
☐ Hot Mix Asphalt Plant
☐ Incinerator
☐ Indirect Heat Exchanger
☐ Quarry
☐ Solid Materials Sizing, Handling and Storage Facilities
☐ Storage Tanks
☒ General Emission Unit, specify: Emergency generators

Fill out and provide the **Emissions Unit Data Sheet(s)** as **Attachment L.**

29. Check all applicable **Air Pollution Control Device Sheets** listed below:

☐ Absorption Systems
☐ Adsorption Systems
☐ Afterburner
☐ Baghouse
☐ Condenser
☐ Electrostatic Precipitator
☐ Flare
☐ Mechanical Collector
☐ Wet Collecting System
☐ Other Collectors, specify

Fill out and provide the **Air Pollution Control Device Sheet(s)** as **Attachment M.**

30. Provide all **Supporting Emissions Calculations** as **Attachment N,** or attach the calculations directly to the forms listed in Items 28 through 31.

31. **Monitoring, Recordkeeping, Reporting and Testing Plans.** Attach proposed monitoring, recordkeeping, reporting and testing plans in order to demonstrate compliance with the proposed emissions limits and operating parameters in this permit application. Provide this information as **Attachment O.**

➢ Please be aware that all permits must be practically enforceable whether or not the applicant chooses to propose such measures. Additionally, the DAQ may not be able to accept all measures proposed by the applicant. If none of these plans are proposed by the applicant, DAQ will develop such plans and include them in the permit.

32. **Public Notice.** At the time that the application is submitted, place a **Class I Legal Advertisement** in a newspaper of general circulation in the area where the source is or will be located (See 45CSR§13-8.3 through 45CSR§13-8.5 and ***Example Legal Advertisement*** for details). Please submit the **Affidavit of Publication** as **Attachment P** immediately upon receipt.

33. **Business Confidentiality Claims.** Does this application include confidential information (per 45CSR31)?

☐ **YES** ☒ **NO**

➢ If **YES,** identify each segment of information on each page that is submitted as confidential and provide justification for each segment claimed confidential, including the criteria under 45CSR§31-4.1, and in accordance with the DAQ's ***"Precautionary Notice – Claims of Confidentiality"*** guidance found in the ***General Instructions*** as **Attachment Q.**

Section III. Certification of Information

34. **Authority/Delegation of Authority.** Only required when someone other than the responsible official signs the application. Check applicable **Authority Form** below:

☐ Authority of Corporation or Other Business Entity
☐ Authority of Governmental Agency
☐ Authority of Partnership
☐ Authority of Limited Partnership

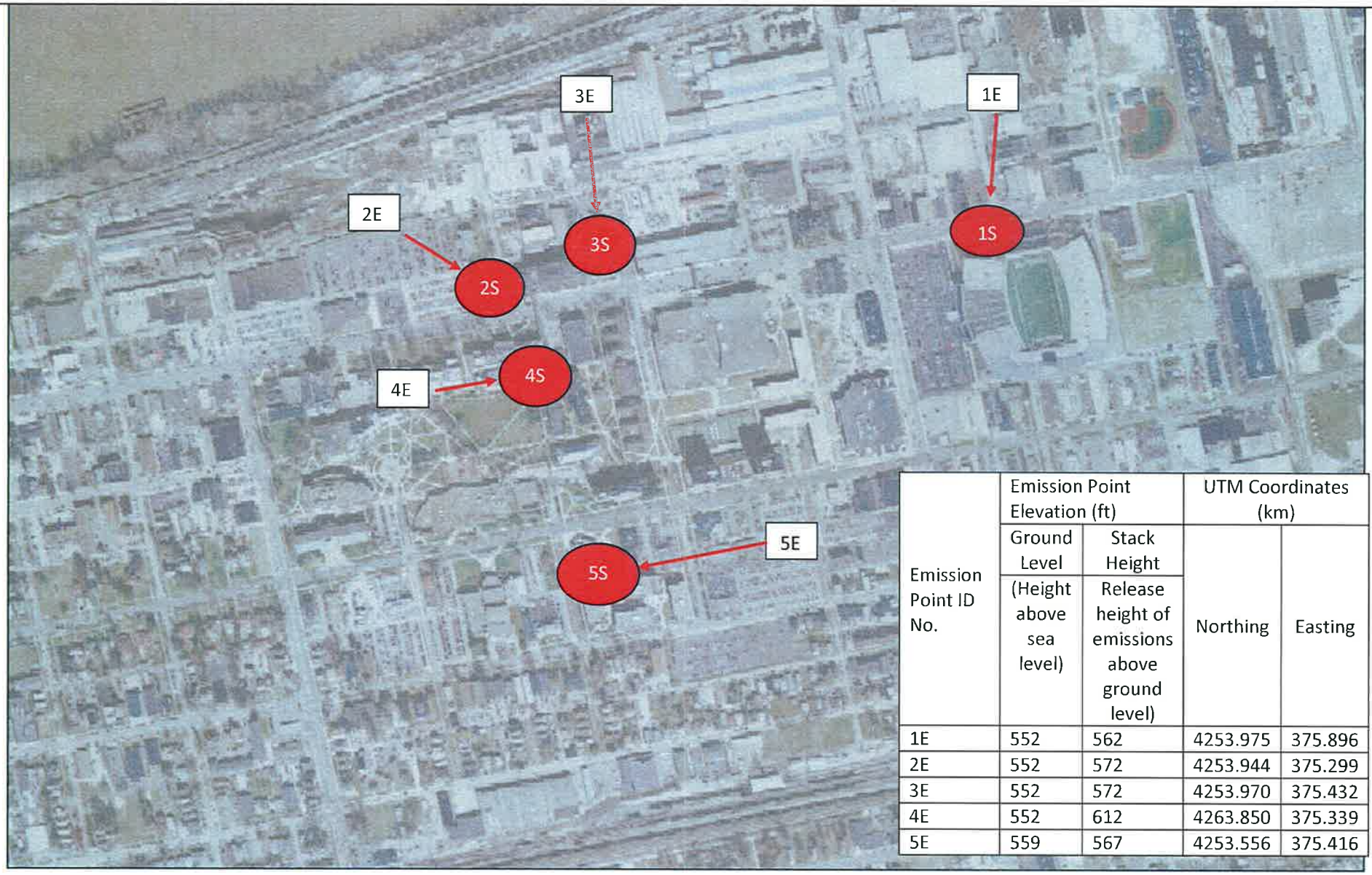
Submit completed and signed **Authority Form** as **Attachment R.**

All of the required forms and additional information can be found under the Permitting Section of DAQ's website, or requested by phone.

Attachment A

Marshall University is an institution created by statute.

Attachment E
Marshall University
One John Marshall Drive, Huntington WV



Emission Point ID No.	Emission Point Elevation (ft)		UTM Coordinates (km)	
	Ground Level (Height above sea level)	Stack Height Release height of emissions above ground level)	Northing	Easting
1E	552	562	4253.975	375.896
2E	552	572	4253.944	375.299
3E	552	572	4253.970	375.432
4E	552	612	4263.850	375.339
5E	559	567	4253.556	375.416

0 205 410 820 1,230 1,640 Feet

1 inch = 134 feet

N

Attachment J
EMISSION POINTS DATA SUMMARY SHEET

Table 1: Emissions Data															
Emission Point ID No. *(Must match Emission Units Table & Plot Plan)*	Emission Point Type[1]	Emission Unit Vented Through This Point *(Must match Emission Units Table & Plot Plan)*		Air Pollution Control Device *(Must match Emission Units Table & Plot Plan)*		Vent Time for Emission Unit *(chemical processes only)*		All Regulated Pollutants - Chemical Name/CAS[3] *(Speciate VOCs & HAPS)*	Maximum Potential Uncontrolled Emissions [4]		Maximum Potential Controlled Emissions [5]		Emission Form or Phase *(At exit conditions, Solid, Liquid or Gas/Vapor)*	Est. Method Used [6]	Emission Concentration [7] (ppmv or mg/m[4])
		ID No.	Source	ID No.	Device Type	Short Term[2]	Max (hr/yr)		lb/hr	ton/yr	lb/hr	ton/yr			
1E	Stack	1S	Emergency Generator	NA	NA	Na	NA	NOX	9.94	2.48	9.94	2.48	Gas	EE	NA
								CO	4.12	1.03	4.12	1.03	Gas	EE	NA
								PM	1.04	0.26	1.04	0.26	Solid	EE	NA
								VOC	1.17	0.29	1.17	0.29	Gas	EE	NA
								SO2	0.97	0.24	0.97	0.24	Gas	EE	NA
								Formaldehyde	0.5593	0.14	0.5593	0.14	Gas	EE	NA
2E	Stack	2S	Emergency Generator	NA	NA	Na	NA	NOX	10.25	2.56	10.25	2.56	Gas	EE	NA
								CO	4.15	1.04	4.15	1.04	Gas	EE	NA
								PM	0.23	0.056	0.23	0.056	Solid	EE	NA
								VOC	1.94	0.49	1.94	0.49	Gas	EE	NA
								SO2	1.61	0.4	1.61	0.4	Gas	EE	NA
								Formaldehyde	0.23	0.056	0.23	0.056	Gas	EE	NA
3E	Stack	3S	Emergency Generator	NA	NA	Na	NA	NOX	56.36	14.09	56.36	14.09	Gas	EE	NA
								CO	12.36	3.1	12.36	3.1	Gas	EE	NA
								PM	4.0	1.0	4.0	1.0	Solid	EE	NA
								VOC	4.5	1.12	4.5	1.12	Gas	EE	NA
								SO2	3.73	0.93	3.73	0.93	Gas	EE	NA
								Formaldehyde	2.15	0.54	2.15	0.54	Gas	EE	NA

The EMISSION POINTS DATA SUMMARY SHEET provides a summation of emissions by emission unit. Note that uncaptured process emission unit emissions are not typically considered to be fugitive and must be accounted for on the appropriate EMISSIONS UNIT DATA SHEET and on the EMISSION POINTS DATA SUMMARY SHEET. Please note that total emissions from the source are equal to all vented emissions, all fugitive emissions, plus all other emissions (e.g. uncaptured emissions). Please complete the FUGITIVE EMISSIONS DATA SUMMARY SHEET for fugitive emission activities.

[1] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

[2] Indicate by "C" if venting is continuous. Otherwise, specify the average short-term venting rate with units, for intermittent venting (ie., 15 min/hr). Indicate as many rates as needed to clarify frequency of venting (e.g., 5 min/day, 2 days/wk).

[3] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. **LIST** Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. **DO NOT LIST** H_2, H_2O, N_2, O_2, and Noble Gases.

[4] Give maximum potential emission rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[5] Give maximum potential emission rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[6] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

[7] Provide for all pollutant emissions. Typically, the units of parts per million by volume (ppmv) are used. If the emission is a mineral acid (sulfuric, nitric, hydrochloric or phosphoric) use units of milligram per dry cubic meter (mg/m^3) at standard conditions (68 °F and 29.92 inches Hg) (see 45CSR7). If the pollutant is SO_2, use units of ppmv (See 45CSR10).

ATTACHMENT L
EMERGENCY GENERATOR ENGINE DATA SHEET

Source Identification Number[1]		EG-1		EG-2		EG-3	
Engine Manufacturer and Model		Kohler 300R0ZD71		Caterpillar DCPXL15.2NZS		Caterpillar 3512	
Manufacturer's Rated bhp/rpm		474		787		1818	
Source Status[2]		ES		ES		ES	
Date Installed/Modified/Removed[3]		1991		2015		2006	
Engine Manufactured/Reconstruction Date[4]		1989		2013		2004	
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart IIII? (Yes or No)[5]		No		Yes		No	
Is this a Certified Stationary Spark Ignition Engine according to 40CFR60 Subpart JJJJ? (Yes or No)[6]		No		No		No	
Engine, Fuel and Combustion Data	Engine Type[7]	CI		CI		CI	
	APCD Type[8]	A/F		A/F		A/F	
	Fuel Type[9]	2FO		2FO		2FO	
	H_2S (gr/100 scf)	0		0		0	
	Operating bhp/rpm	1800		1800		1800	
	BSFC (Btu/bhp-hr)	———		0.334		———	
	Fuel throughput (ft^3/hr)	89.3 g/hr		36.3 g/hr		100 g/hr	
	Fuel throughput ($MMft^3$/yr)	———		———		———	
	Operation (hrs/yr)	<500		<500		<500	
Reference[10]	Potential Emissions[11]	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
MD	NOx	9.94	2.48	10.25	2.56	56.36	14.09
MD	CO	4.12	1.03	4.15	1.04	12.36	3.1
AP	VOC	1.17	0.29	1.94	0.49	4.5	1.12
AP	SO_2	0.97	0.24	1.61	0.4	3.73	0.93
AP	PM_{10}	1.04	0.26	0.23	0.056	4.0	1.0
AP	Formaldehyde	0.5593	0.14	0.93	0.23	2.15	0.54

Attachment N
Supporting Emmissions Calculations

																			PPH						TPY					
Emission Unit ID	Building	Year Installed	Fuel Type	Generator KW	Engine HP	Manufacturer	Nox	Units	CO	Units	PM	Units	VOC	Units	SO2	Units	CH2O	Units	NOx	CO	PM	VOC	SO2	CH2O	NOx	CO	PM	VOC	SO2	CH2O
EG-1	Stadium	1991	Diesel	300	474	Kohler	4510	g/hr	1870	g/hr	0.0022	lb/hp-hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	9.8339	4.1189	1.0428	1.1700	0.8720	0.5593	2.4835	1.0297	0.2607	0.2925	0.2430	0.1398
EG-2	Engineering Building	2015	Diesel	500	787	Caterpillar	4654	g/hr	1886	g/hr	102.5	g/hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	10.2511	4.1542	0.2258	1.9439	1.6134	0.8287	2.5628	1.0385	0.0564	0.4860	0.4033	0.2322
EG-3	Big Tech	2006	Diesel	1250	1818	Caterpillar	0.031	lb/hp-hr	0.0068	lb/hp-hr	0.0022	lb/hp-hr	0.00247	lb/hp-hr	0.00205	lb/hp-hr	0.00118	lb/hp-hr	56.3580	12.3624	3.8996	4.4905	3.7289	2.1452	14.0895	3.0906	0.9999	1.1226	0.9317	0.5363
EG-4	Science Building	1982	NG	100	140	Kohler	5.14	g/hp-hr	39	g/hp-hr	0.00077	lb/MMBtu	0.118	lb/MMBtu	0.00059	lb/MMBtu	0.0528	lb/MMBtu	1.5850	12.0264	0.0011	0.1652	0.0008	0.0739	0.3963	3.0066	0.0003	0.0413	0.0002	0.0185
EG-5	Harless Dining	2003	NG	150	240	Cummins	16.2	g/hp-hr	0.65	g/hp-hr	0.00077	lb/MMBtu	0.118	lb/MMBtu	0.00059	lb/MMBtu	0.0528	lb/MMBtu	8.5639	0.3438	0.0019	0.2832	0.0014	0.1267	2.1410	0.0859	0.0005	0.0708	0.0004	0.0317
																							Total		21.6730	8.2614	1.3178	3.0132	1.6796	0.9585

EG-1 Stadium Data

Engine Specification Data
Standby Power

General Data

Model	8063-7416
Number of Cylinders	6
Bore and Stroke-in (mm)	4.84x5.00 (123x127)
Displacement-in³ (L)	552 (9.1)
Compression Ratio	15.0:1
Combustion System	Direct Injection
Engine Type	63.5° Vee-2 Cycle
Aspiration	Turbocharged

Configuration

Turbocharger	TV8403 (1.39 A/R)
Charge Air Cooling System	JWAC
Blower Type	By-pass
Blower Drive Ratio	2.00:1
Thrust Bearing Load Limit	
Continuous-lbf (N)	600 (2670)
Intermittent-lbf (N)	1800 (8000)
Engine Crankcase Vent System	Open
Maximum Pressure-in H_2O (kPa)	2.6 (0.65)

Physical Data

Size	
Length-in (mm)	43.5 (1105)
Width-in (mm)	38.8 (986)
Height-in (mm)	53.0 (1346)
Weight, dry-lb (kg)	2020 (916)
Center of Gravity Distance	
From R.F.O.B. (x axis)-in (mm)	9.3 (236)
Above Crankshaft (y axis)-in (mm)	8.75 (222)
Right of Crankshaft (z axis)-in (mm)	0.4 (10.2)
Installation Drawing	23502413 (Ref.)
Maximum Allowable Static Bending Moment at Rear Face of FW Hsg-lbf ft (N•m)	0
Maximum Allowable Vertical Load at Rear Face of Flywheel-lb (kg)	800 (363)

Fuel System

	1800	1500
Fuel Injector/Timing	150/1.508	150/1.508
Fuel Injection Pump/Timing	Not Applicable	Not Applicable
Fuel Consumption-lb/hr (kg/hr)	170.6 (77.4)	145.0 (65.8)
Fuel Consumption-gal/hr (L/hr)	24.0 (90.8)	20.4 (77.2)
Fuel Spill Rate-lb/hr (kg/hr)	456 (207)	441 (200)
Fuel Spill Rate-gal/hr (L/hr)	65.3 (247)	63.2 (239)
Total Fuel Flow-lb/hr (kg/hr)	627 (284)	586 (266)
Total Fuel Flow-gal/hr (L/hr)	89.3 (338)	83.6 (316)
Maximum Allowable Fuel Pump Suction		
Clean System-in Hg (kPa)	6.0 (20)	6.0 (20)
Dirty System-in Hg (kPa)	12.0 (41)	12.0 (41)
Fuel Filter Micron Size		
Primary-Micron	30	30
Secondary-Micron	12	12

Lubrication System

Oil Pressure		
Rated Speed-lbf/in² (kPa)	49-70 (338-483)	41-62 (283-427)
Low Idle-lbf/in² (kPa)	5 (34)	5 (34)
In Pan Oil Temperature-°F (°C)	200-250 (93-121)	200-250 (93-121)
Oil Flow-gal/min (L/min)	34 (129)	31 (117)
Oil Pan Capacity		
High-qt (L)	20 (19)	20 (19)
Low-qt (L)	16 (15)	16 (15)
Total Engine Oil Capacity with filters-qt (L)	22 (21)	22 (21)
Bypass Oil Filter Orifice-in (mm)	0.101 (2.57)	0.101 (2.57)
Engine Angularity Limits		
Front up-degrees	25	25
Front down-degrees	15	15
Side tilt-degrees	Not Available	Not Available

Electrical System

Recommended Battery Capacity (CCA @ 0°F)	
12 Volt System	
Above 32°F (0°C)-A	1900
Below 32°F (0°C)-A	2500
24 Volt System	
Above 32°F (0°C)-A	950
Below 32°F (0°C)-A	1250
Maximum Allowable Resistance of Starting Circuit	
12 volt system-ohm	0.0012
24 volt system-ohm	0.002

Part Load Fuel Consumption

Fuel-gal/hr (L/hr) - 0% Power	1.8 (6.8)	1.3 (4.9)
25% Power	7.3 (27.6)	5.9 (22.3)
50% Power	12.7 (48.1)	10.5 (39.7)
75% Power	18.0 (68.1)	15.1 (57.2)
100% Power	24.0 (90.8)	20.4 (77.2)

All values at rated speed and power and with standard engine hardware unless otherwise noted.

A block heater is required.

Cooling System

	1800	1500
Engine Heat Rejection-Btu/min (kW)	14694 (258)	12462 (219)
Engine Radiated Heat-Btu/min (kW)	2500 (44.0)	2310 (40.6)
Generator Heat Radiated to Room Btu/min (kW)	Not Available	Not Available
Coolant Flow-gal/min (L/min)	140 (530)	117 (443)
Thermostat		
Start to Open-°F (°C)	177 (81)	177 (81)
Fully Open-°F (°C)	197 (92)	197 (92)
Maximum Water Pump Inlet Restriction-in Hg (kPa)	3.0 (10.2)	2.0 (6.7)
Engine Coolant Capacity-qt (L)	24.5 (23.2)	24.5 (23.2)
Minimum Pressure Cap-lbf/in² (kPa)	9 (62)	9 (62)
Maximum Coolant Pressure (Exclusive of Pressure Cap and/or Head)-lbf/in² (kPa)	10.6 (73.1)	7.6 (52.4)
Maximum Allowable Cooling System Static Head W/Vented Cap-ft H_2O (kPa)	50 (149)	50 (149)
Maximum Top Tank Temperature-°F (°C)	210 (99)	210 (99)
Minimum Top Tank Temperature-°F (°C)	160 (71)	160 (71)
Minimum Coolant Fill Rate-gal/min (L/min)	3.0 (11.4)	3.0 (11.4)
Cooling Index		
Minimum Air to Boil-°F (°C)	117 (47)	117 (47)
Maximum Air to Water Diff.-°F (°C)	95 (53)	95 (53)
Deaeration-Air Injection Capacity-ft³/min (m³/min)	0.6 (0.017)	0.6 (0.017)
Drawdown-Minimum Requirement (or 10% of Cooling System Capacity-Whichever is Larger)-qt (L)	4.0 (3.8)	4.0 (3.8)
Heat Exchanger Raw Water Flow-gal/min (L)	58 (220)	50 (189)
Maximum Suction Pressure (Raw Water) in Hg (kPa)	5 (17)	5 (17)
Maximum Discharge Pressure (Raw Water)-lb/in² (kPa)	10 (69)	10 (69)

Air System

Maximum Allowable Temperature Rise (Ambient Air to Engine Inlet)-°F (°C)	30 (17)	30 (17)
Air Intake Restriction Maximum Limit		
Dirty Air Cleaner-in H_2O (kPa)	14.4 (3.6)	10.3 (2.6)
Clean Air Cleaner-in H_2O (kPa)	8.7 (2.2)	6.2 (1.5)
Engine Air Flow-ft³/min (m³/min)	1370 (38.8)	1200 (34.0)
Fan Air Flow-ft³/min (m³/min)	Not Available	Not Available
Engine Air Box/Manifold Pressure-in Hg (kPa)	48.0 (162)	37.8 (128)
Recommended Intake Pipe Dia.-in (mm)	6.0 (152)	6.0 (152)

Exhaust System

Exhaust Flow-ft³/min (m³/min)	3125 (88.5)	2725 (77.2)
Exhaust Temperature-°F (°C)	765 (407)	760 (404)
Maximum Allowable Back Pressure-in Hg (kPa)	2.0 (6.8)	1.4 (4.7)
Recommended Exhaust Pipe Dia.		
Single-in (mm)	5.0 (127)	5.0 (127)
Dual-in (mm)	Not Applicable	Not Applicable

Performance Data

Power Output-bhp (kW)	474 (354)	400 (298)
Rated Speed-r/min	1800	1500
BMEP-lbf/in² (kPa)	189 (1303)	191 (1317)
Piston Speed-ft/min (m/min)	1500 (457)	1250 (381)
Friction Power-fhp (kW)	60 (45)	44 (33)
Altitude Capability-ft (m)	12000 (3660)	12000 (3660)
Noise-dB(A) @ 1m	99	98
Smoke-Bosch Number	1.0	0.8

Emission Data-g/hr (at percent load) - 1800 r/min

	0%	25%	50%	75%	100%
NO_x	XXX	600	1510	3230	4510
CO	XXX	340	340	510	1870
HC	XXX	30	26	28	35
SO_2	XXX	230	400	590	800
CO_2	XXX	120000	135550	185000	253000

Emission Data-g/hr (at percent load) - 1500 r/min

	0%	25%	50%	75%	100%
NO_x	XXX	650	1570	3140	4090
CO	XXX	100	200	580	2280
HC	XXX	27	22	21	31
SO_2	XXX	190	340	500	680
CO_2	XXX	66000	106500	157000	215500

CURVE NO. E4-8065-32-12
DATE: 3-13-89
REV/DATE: 2/3-28-90
SHT. 2 OF 3

KOHLER

MODEL NO. 300R07071	SERIAL NO. 275116
SPEC. NO. 132708-71	

ALWAYS GIVE ABOVE NUMBERS WHEN ORDERING PARTS

CONTINUOUS STANDBY RATINGS					
VOLTAGE	120/208	139/240	277/480	120/240	120/240
PHASE	3	3	3	3	1
POWER FACTOR	0.8	0.8	0.8	0.8	1.0
KW	300	300	300	300	
KVA	375	375	375	375	
AMPERES	1041	902	451	902	
FACTORY TEST = F RECONNECTED = R			F		

UNIT IS RECONNECTABLE TO ABOVE VOLTAGES

HERTZ 60	RPM 1800	BATTERY 24
WT lbs.	FUEL	

U.S. PAT. NO. 3,656,051 PAT. IN CANADA 1973

EG6A 7

KOHLER CO. KOHLER, WIS. USA

102905

PERFORMANCE DATA[DM8155]

December 22, 2014

Heat Rejection Data

GENSET POWER WITH FAN	PERCENT LOAD	ENGINE POWER	REJECTION TO JACKET WATER	REJECTION TO ATMOSPHERE	REJECTION TO EXH	EXHUAST RECOVERY TO 350F	FROM OIL COOLER	FROM AFTERCOOLER	WORK ENERGY	LOW HEAT VALUE ENERGY	HIGH HEAT VALUE ENERGY
EKW	%	BHP	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN	BTU/MIN
500.0	100	762	10,619	4,890	28,467	15,987	4,154	6,801	32,301	77,990	83,078
450.0	90	683	9,863	4,850	25,472	14,112	3,741	5,675	28,958	70,234	74,817
400.0	80	607	9,041	4,609	22,939	12,671	3,345	4,569	25,750	62,810	66,909
375.0	75	570	8,692	4,420	22,234	12,270	3,195	4,370	24,187	59,989	63,903
350.0	70	534	8,428	4,273	21,896	12,066	3,083	4,412	22,642	57,875	61,651
300.0	60	462	7,957	4,041	21,408	11,759	2,881	4,607	19,611	54,095	57,625
250.0	50	392	7,483	3,990	20,431	11,144	2,654	4,537	16,633	49,823	53,074
200.0	40	323	6,780	4,301	16,988	9,104	2,245	3,137	13,687	42,142	44,892
150.0	30	253	6,009	4,101	13,295	6,979	1,798	1,830	10,732	33,764	35,968
125.0	25	218	5,578	3,764	11,543	5,997	1,572	1,310	9,239	29,508	31,433
100.0	20	182	5,092	3,466	9,876	5,013	1,354	925	7,727	25,428	27,088
50.0	10	109	4,033	3,079	6,702	2,947	944	445	4,629	17,732	18,889

PERFORMANCE DATA[DM8155]

December 22, 2014

Regulatory Information

EPA TIER 2		2006 - 2010		
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 89 SUBPART D AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE NON-ROAD REGULATIONS.				
Locality	**Agency**	**Regulation**	**Tier/Stage**	**Max Limits - G/BKW - HR**
U.S. (INCL CALIF)	EPA	NON-ROAD	TIER 2	CO: 3.5 NOx + HC: 6.4 PM: 0.20

EPA EMERGENCY STATIONARY		2011 - —		
GASEOUS EMISSIONS DATA MEASUREMENTS PROVIDED TO THE EPA ARE CONSISTENT WITH THOSE DESCRIBED IN EPA 40 CFR PART 60 SUBPART IIII AND ISO 8178 FOR MEASURING HC, CO, PM, AND NOX. THE "MAX LIMITS" SHOWN BELOW ARE WEIGHTED CYCLE AVERAGES AND ARE IN COMPLIANCE WITH THE EMERGENCY STATIONARY REGULATIONS.				
Locality	**Agency**	**Regulation**	**Tier/Stage**	**Max Limits - G/BKW - HR**
U.S. (INCL CALIF)	EPA	STATIONARY	EMERGENCY STATIONARY	CO: 3.5 NOx + HC: 4.0 PM: 0.20

PERFORMANCE DATA[DM8155]

December 22, 2014

Cross Reference

Engine Arrangement			
Arrangement Number	Effective Serial Number	Engineering Model	Engineering Model Version
2729744	FSE00001	GS282	-
2864923	FTE00001	GS282	-
2864924	FTE00001	GS282	-

Test Specification Data						
Test Spec	Setting	Effective Serial Number	Engine Arrangement	Governor Type	Default Low Idle Speed	Default High Idle Speed
0K6281	PP5612	FSE00001	2729744	ELEC		
0K6281	PP5612	FTE00001	2864923	ELEC		
0K6281	PP5612	FTE00001	2864924	ELEC		

PERFORMANCE DATA[DM8155]

water temperature.

MEASUREMENT LOCATION FOR INLET AIR TEMPERATURE
Location for air temperature measurement air cleaner inlet at stabilized operating conditions.

REFERENCE EXHAUST STACK DIAMETER
The Reference Exhaust Stack Diameter published with this dataset is only used for the calculation of Smoke Opacity values displayed in this dataset. This value does not necessarily represent the actual stack diameter of the engine due to the variety of exhaust stack adapter options available. Consult the price list, engine order or general dimension drawings for the actual stack diameter size ordered or options available.

REFERENCE FUEL

DIESEL
Reference fuel is #2 distillate diesel with a 35API gravity;
A lower heating value is 42,780 KJ/KG (18,390 BTU/LB) when used at 29 (84.2), where the density is 838.9 G/Liter
(7.001 Lbs/Gal).

GAS
Reference natural gas fuel has a lower heating value of 33.74 KJ/L (905 BTU/CU Ft). Low BTU ratings are based on 18.64 KJ/L (500 BTU/CU FT) lower heating value gas. Propane ratings are based on 87.56 KJ/L (2350 BTU/CU Ft) lower heating value gas.

ENGINE POWER (NET) IS THE CORRECTED FLYWHEEL POWER (GROSS) LESS EXTERNAL AUXILIARY LOAD
Engine corrected gross output includes the power required to drive standard equipment; lube oil, scavenge lube oil, fuel transfer, common rail fuel, separate circuit aftercooler and jacket water pumps. Engine net power available for the external (flywheel) load is calculated by subtracting the sum of auxiliary load from the corrected gross flywheel out put power. Typical auxiliary loads are radiator cooling fans, hydraulic pumps, air compressors and battery charging alternators. For Tier 4 ratings additional Parasitic losses would also include Intake, and Exhaust Restrictions.

ALTITUDE CAPABILITY
Altitude capability is the maximum altitude above sea level at standard temperature and standard pressure at which the engine could develop full rated output power on the current performance data set. Standard temperature values versus altitude could be seen on TM2001. When viewing the altitude capability chart the ambient temperature is the inlet air temp at the compressor inlet.

Engines with ADEM MEUI and HEUI fuel systems operating at conditions above the defined altitude capability derate for atmospheric pressure and temperature conditions outside the values defined, see TM2001. Mechanical governor controlled unit injector engines require a setting change for operation at conditions above the altitude defined on the engine performance sheet. See your Caterpillar technical representative for non standard ratings.

REGULATIONS AND PRODUCT COMPLIANCE
TMI Emissions information is presented at 'nominal' and 'Potential Site Variation' values for standard ratings. No tolerances are applied to the emissions data. These values are subject to change at any time. The controlling federal and local emission requirements need to be verified by your Caterpillar technical representative. Log on to the Technology and Solutions Divisions (T&SD) web page (https://pdgt.cat.com/cda/layout) for information including federal regulation applicability and time lines for implementation. Information for labeling and tagging requirements is also provided.

NOTES:
Regulation watch covers regulations in effect and future regulation changes for world, federal, state and local. This page includes

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2013 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT OF 1990

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Caterpillar Inc.** (U.S. Manufacturer or Importer) **Certificate Number: DCPXL15.2NZS-022**	**Effective Date:** 10/05/2012 **Expiration Date:** 12/31/2013	**Byron J. Bunker, Acting Division Director** **Compliance Division**	**Issue Date:** 10/05/2012 **Revision Date:** N/A

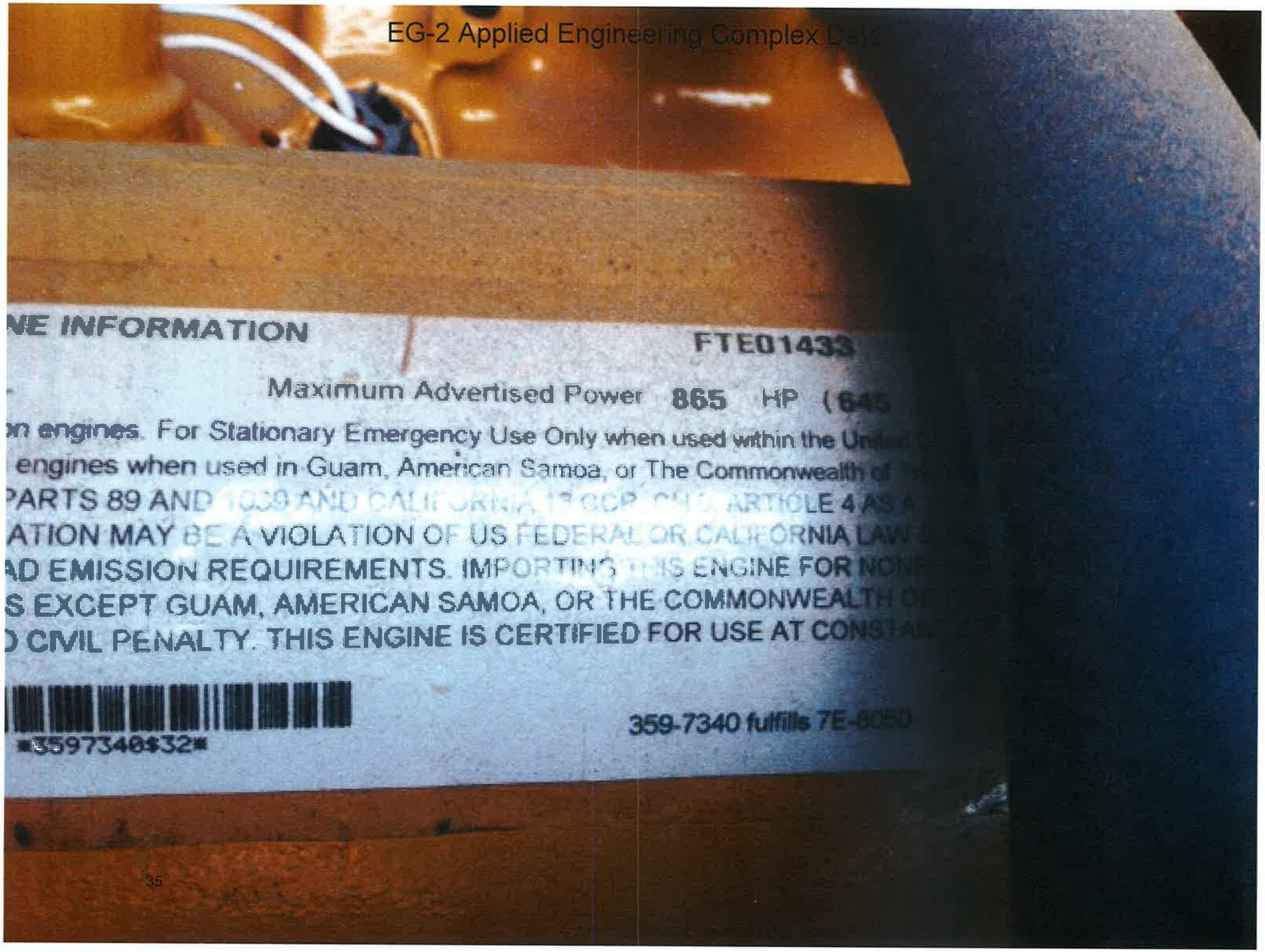
Model Year: 2013 **Manufacturer Type:** Original Engine Manufacturer **Engine Family:** DCPXL15.2NZS	**Mobile/Stationary Indicator:** Stationary **Emissions Power Category:** 560<kW<=2237 **Fuel Type:** Diesel **After Treatment Devices:** No After Treatment Devices Installed **Non-after Treatment Devices:** Engine Design Modification, Electronic Control

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.


NE INFORMATION
FTE01433
Maximum Advertised Power 865 HP (645
on engines. For Stationary Emergency Use Only when used within the United
engines when used in Guam, American Samoa, or The Commonwealth of
PARTS 89 AND 1039 AND CALIFORNIA 13 CCR 2423 ARTICLE 4 AS A
ATION MAY BE A VIOLATION OF US FEDERAL OR CALIFORNIA LAW
AD EMISSION REQUIREMENTS. IMPORTING THIS ENGINE FOR NON
S EXCEPT GUAM, AMERICAN SAMOA, OR THE COMMONWEALTH OF
D CIVIL PENALTY. THIS ENGINE IS CERTIFIED FOR USE AT CONSTA
5597348$32
359-7340 fulfills 7E-8050

CAT® SER. NO. FTE01433
CERT. NO.
MODIFICATION NO.
AP NO. 286 – 4924
C[illegible]AR. –
OEM NO.
FLS (INTERCEPT) – 10
ADV 762 HP 568.0 kW AT 1800 RPM

ENGINE MODEL C15
ENGINE SALES MODEL
MAX 1000 M
ALT 3281 FT
ELECTRONICS GP
ECM SOFTWARE 419 – 9366
PERF. SPEC DK – 6281
FTS (SLOPE) 7

USE SERVICE TOOL TO VERIFY CURRENT ENGINE SETTINGS

EG-3 Biotech Data

Engine Emissions Data

For Emissions feedback and questions submit request form

This emission data is Caterpillar's best estimate for this rating. If actual emissions are required then an emission test needs to be run on your engine.

Serial Number (Machine)	
Serial Number (Engine)	**1KZ02050**
Sales Model	3512
Build Date	2004-11-01
Interlock Code Progression	No Interlock Code Progression
As Shipped Data	
Engine Arrangement Number	1979048
Test Spec Number	0K3134
Regulatory Status	Please Contact Engine Certification using request form
Flash File	No Flash File Found
CORR FL Power at RPM	
Advertised Power	1,818HP 1,800RPM

This is not an official emission certificate. This is for emission data information only.

Caterpillar Confidential: **Green**
Content Owner: Commercial Processes Division
Web Master(s): PSG Web Based Systems Support
Current Date: Friday, December 19, 2014 4:09:22 PM
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Data Privacy Statement.

PROPERTY IDENTIFICATION

1404

MODEL NUMBER

CAT® CATERPILLAR®

CAT® CATERPILLAR®

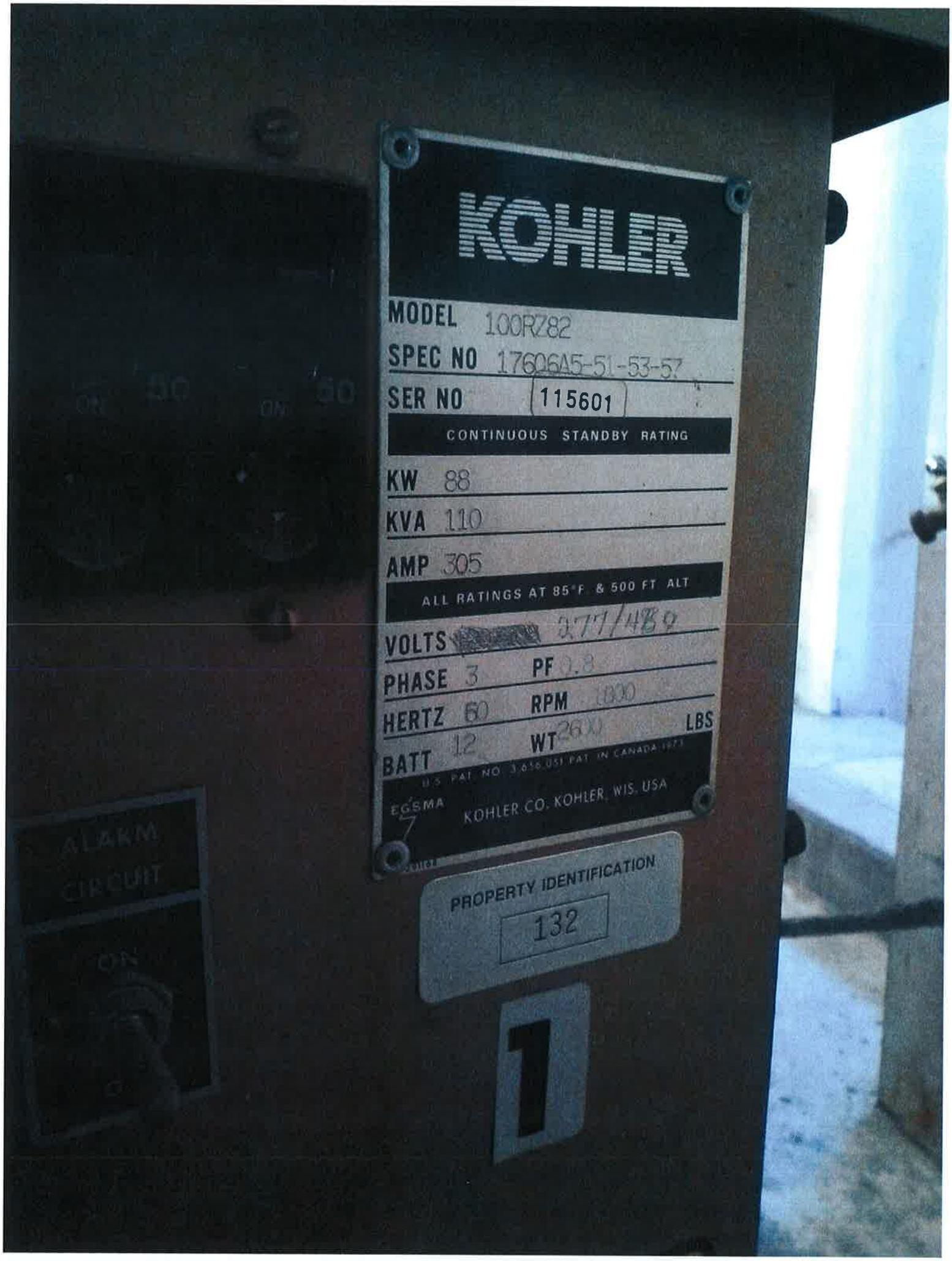
PRODUCT IDENTIFICATION NUMBER *CAT00000JCMJ01375*

CATERPILLAR INC.
PEORIA, IL 61629
USA

MADE IN USA

PARTS ORDER

259-0986


KOHLER
MODEL 100R282
SPEC NO 17606A5-51-53-57
SER NO 115601
CONTINUOUS STANDBY RATING
KW 88
KVA 110
AMP 305
ALL RATINGS AT 85°F & 500 FT ALT
VOLTS 277/480
PHASE 3 PF 0.8
HERTZ 60 RPM 1800
BATT 12 WT 2600 LBS
U.S. PAT. NO. 3,616,051 PAT. IN CANADA 1973
EGSMA
KOHLER CO. KOHLER, WIS. USA
PROPERTY IDENTIFICATION
132
1
ALARM
CIRCUIT
ON

Cummins
URAL GAS ENGINES, INC.
New Mexico, U.S.A.
of Cummins Engine Co., Inc.
MODEL GTA8.3G2
ENGINE NO. 46279498
DATE OF MFG. 2/03
DATE OF DELIVERY
CONF. NO. 0100-3520-02
ADVERTISED HP 240 AT 1800
PISTON 3930018
RATIO
HYDRAULIC LIFTER
CAMSHAFT
TURBOCHARGER

Attachment P
AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that **Marshall University** has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a **Construction Permit for Emergency Generators** located on **One John Marshall Drive, Huntington, WV** in **Cabell County**, West Virginia. The latitude and longitude coordinates are: **(38.423055, -82.430679)**

The applicant estimates the potential to discharge the following Regulated Air Pollutants will be:

Pollutant	Tons/Year
NOx	71
CO	48
PM	10
PM_{10}	5.0
VOC	7.5
SO2	4.0
Formaldehyde	2.5

Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.
Dated this the 1 day of May, 2016.

By: **Marshall University**
Brandi Jacobs Jones
Sr. VP of Operations
One John Marshall Drive
Huntington, WV 25755