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Final Report
April 21, 2013

EnerBurn® Product Performance Test

Performed by Janelle Engineering, Inc.

Cummins Diesel Generator
Model 690DFHA

Client
EnerTeck Confidential

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1.0 Executive Summary

A reduction of **5% +/-1%** in diesel fuel consumption was measured for a Cummins Diesel Power Generator, model 690DFA, QST30-series engine by an independent, third-party test engineer (Janelle Engineering). This result was achieved with the use of a well-known diesel fuel combustion enhancer product, EnerBurn®.

The test was jointly funded by the product manufacturer, EnerTeck Chemical Corporation, and a grant awarded by an association of power producing companies in Brazil.

2.0 Introduction

A performance test designed to evaluate the efficacy of a well-known diesel fuel combustion enhancer, EnerBurn®, was carried out under a grant funded by an association of power producing companies. The motivation for the study was to evaluate fuel efficiency products, either as the type that are added to diesel, or as retrofit equipment; EnerBurn® is a candidate fuel-borne combustion catalyst. The grant addresses a particular market in northern Brazil that consists of a network of thermal power plants used in support of an expanding program for rural electrification. The market may also include back-up thermal power generation installations for the more extensive hydroelectric power grid that supports cities and large towns. Qualified candidates from among these various combustion efficiency products should ideally have a proven record of market performance and must be fully capable of rapid scale-up for ease of commercialization in Brazil. EnerTeck Chemical Corporation meets and / or exceeds these requirements.

The main criterion for acceptance of the performance test as set forth by the grant; was to prove a reduction in fuel consumption of 5%. EnerBurn® typically produces a reduction in fuel consumption of 7-10% when properly applied to diesel engines. This is accomplished through a mechanism of chemical catalysis that enhances the thermal efficiency of diesel engines. EnerBurn® actually conditions the internal surfaces of the combustion chamber with an active catalytic layer that can accelerate the combustion rate of fuel. Essentially the same amount of energy is produced per unit volume of diesel burned with EnerBurn® as without. However, because of the acceleration of the initial burn rate, more work is extracted from the movement of the piston during the initial expansion cycle of either a 2- or 4-stroke internal combustion engine. This effect results in more horsepower for the same amount of fuel burned, or less fuel consumed for the same engine power output.

EnerBurn® requires a “conditioning period” of 500–800 hours for the treated engine to obtain the maximum benefit. EnerBurn® is a liquid product that is manufactured and marketed exclusively by EnerTeck Chemical Corporation of Stafford, Texas, USA. EnerTeck was founded in 2001. The same treatment ratio is used for all types of fuel, including biodiesel, regardless of sulfur content.

EnerBurn® is formulated with three (3) additional chemical additives that ensure the following: 1) excellent fuel storage properties, 2) excellent fuel lubricity, and 3) anti-corrosion. Additionally, EnerBurn® is known to be a very effective biocide that is especially important for humid environments or long-term fuel storage. EnerBurn® is manufactured in ISO-certified chemical blending facilities located near the port of Houston, TX. Each manufactured lot of EnerBurn® conforms to strict standards of chemical quality control and quality assurance as documented by a Certificate of Analysis.

The test was carried out by a certified engine testing company, Janelle Engineering, Inc., using methods that are consistent with CFR 40, Part 86 EPA rules for steady-state testing of diesel engines rated at 750 hp or greater.

3.0 Equipment Preparation

The Gen-Set engine selected for the test was chosen by the power plant owner. This particular Cummins Gen-Set is hereafter referred to as Gen-Set #2.

Gen-Set #2 has a dedicated day tank. This tank was cleaned prior to the test to remove any accumulated water, algae, or other solid contaminants from the fuel supply system. Consideration was given to reserve enough fuel from the baseline test period to supply Gen-Set #2 during the subsequent benchmark period as a means of controlling the consistency of the fuel supply. However, this was not deemed feasible by the management of the power plant. The fuel used during the test period was believed to be an industrial grade diesel (S1800) and was supplied by Petrobras to the power plant on a routine schedule. Diesel fuel was delivered approximately every three (3) days. Each delivery was of approximately 30,000 L. The fuel was pumped into a very large holding tank of approximately 55,000 L capacity. From there it was pumped through supply lines to the day tank of Gen-Set #2. At any given time, therefore, the fuel was considered to be a mixture of multiple deliveries from Petrobras. Chemical analysis records for the diesel used during testing were not made available, so the variation in caloric content of the fuel, if any, was not known. However, it is anticipated that the impact of any such variation in fuel quality between deliveries would have been diluted by the volume of the larger holding tank. Also, since the diesel was sourced from the same supplier, Petrobras, and is a distillate, it is assumed to have been of a relatively consistent quality with respect to caloric content.

The fuel level in the day tank was monitored by plant personnel using a sight gage. The day tank was refilled approximately every 2-4 hours by a manually operated electric fuel pump. The day tank for Gen-Set #2 was always kept more than half full. The engine for Gen-Set #2 received routine maintenance, such as periodic oil changes, throughout the test period. A request was made to power plant management to report any non-routine maintenance performed by plant personnel; none was reported.

An automated additive dispense unit, also known as Automated Additive Injector (AAI) equipment, was installed on the day tank of Gen-Set #2 for the purpose of supplying the EnerBurn® fuel combustion catalyst to the fuel supply system during the test period. This installation was started in November 2012, during the same week as the baseline test, and was completed approximately one month later in December 2012, after the arrival of the EnerBurn®. It was assumed that no changes to the baseline condition of Gen-Set #2 occurred during the intervening month of engine operation. The AAI equipment was manufactured by Diesel Technical Innovations, LLC, hereafter referred to as DTI. The DTI AAI model was a hybrid design of two standard models, the VM200 and the BT100. Essentially, the system was the same as used for mobile transport vehicles (VM) as adapted to a bulk tank (BT) application. The DTI AAI system used a form of ultra-sonic level sensing to measure changes in the day tank fuel level with very high precision and accuracy. After each fuel refill, followed by a settling period, the DTI AAI unit would dispense the correct amount of EnerBurn® into the day tank at the specified treatment ratio of 1:2500.

The first day of fuel treatment with EnerBurn® was Thursday, December 6, 2012. The power plant personnel were left with a set of simple instructions on how to make daily inspections of the DTI AAI unit to check for 1) leaks, 2) system power and 3) EnerBurn® supply as indicated by the sight gage of the associated additive tank for the DTI unit. Plant personnel reported no issues or problems with the DTI AAI unit during the entire 17-week duration of the test. When the test team for EnerTeck revisited the power plant in April, they downloaded a report of the fuel and additive injection history from the DTI AAI unit control box. This report was inadvertently truncated to include only the last two months of the four-month test period ending with the benchmark testing of April 4 and 5, 2013. This automated log is included in Appendix 2 of this report.

After the benchmark testing was completed, the DTI AAI equipment was left in operation, along with the pair of fuel flow meters belonging to EnerTeck. The plant operators were instructed to take hourly readings of total fuel volume measured by the flow meters beginning some time on either April 4 or

April 5. However, benchmark testing necessitated that the total fuel volume be manually reset to zero after each 20-minute test run. For this reason, data corresponding to the three test days, April 4–6, 2013, should generally be excluded from the subsequent monitoring of fuel consumption for Gen-Set #2.

Mathematical analysis of the AAI records indicates that the correct ratio of EnerBurn® was consistently applied to the day tank for Gen-Set #2. A rough mathematical mass balance check was also applied based on the estimation of the amount of unused EnerBurn® remaining on April 4 and 5 compared to the refill volumes of diesel recorded by the DTI AAI control box. This rough analysis corresponds to an estimated average fuel consumption rate of 28 GPH (gallon per hour) over the 17-week test period. The estimated average amount of diesel consumed was between 2,240 and 2,350 gallons per week. The estimated number of hours of engine operation with treated diesel was 1062. A request was made to power plant management to supply fuel consumption records for the four (4) months prior to and during the test period. With these records, the proper functioning of the DTI AAI unit can perhaps be independently confirmed.

4.0 Engine Test Method, Data Acquisition and Measurement System

Please refer to the reports submitted by Janelle Engineering Inc. for details of the measurement equipment and test method. Janelle Engineering, Inc. is a certified engine testing company using methods consistent with CFR 40, Part 86 EPA rules for steady-state testing of diesel engines rated at 750 hp or greater. Among other things, the applicable EPA rule specifies that the critical input parameters that affect fuel consumption must be independently measured by a separate engine test measurement system, as opposed to taking engine parameter read-outs from the equipment under test. Moreover, the EPA rule requires that the independent engine test measurement system must be calibrated to standards having NIST traceability. The applicable section of CFR 40, Part 86 is available to the public.

The following are estimates for measurement error for the equipment used during the testing performed by Janelle Engineering, Inc.

The fuel flow meters each have a repeatability of +/- 0.25%. Thus, the measurement error for the fuel burn rate (the difference between the flow rate of the fuel supply and return lines) due to repeatability is +/- 0.5%. Any error associated with accuracy is assumed to cancel out for the differential flow rate measurement. The certificates of calibration for the two fuel flow meters are provided in Appendix 1.

The accuracy of the JEI Power Measurement system is +/- 0.2%. However, the repeatability of the JEI Power Measurement system is estimated to be approximately +/-1%. The latter was based on the evaluation of two (2) repeat runs of the same data acquisition files for twelve (12) recorded power measurements as supplied by Janelle Engineering, Inc to EnerTeck on April 22, 2013.

5.0 Treatment of Data

The data for each measurement parameter for each test run were reported in the Janelle Engineering, Inc individual reports for the Baseline and Benchmark tests. The test parameters were the following: engine rpm, engine power, and diesel fuel burn rate as measured for 20-minute periods under steady-state operating conditions of the Gen-Set. A series of three or more measurements were made at each of three discrete gen-set load settings, as manually “dialed in” by the power plant operators. Within each data set, those runs that fell outside of a variation of approximately +/-1% were excluded from the evaluation. A minimum of three (3) repeat measurements for each operational load setting that met this criteria for repeatability were used for the basis of the comparison between baseline and benchmark fuel consumption. These data are presented below in section 6.0, Results and Conclusions.

6.0 Results and Conclusions

Table 1: Gen-Set power measurements.

Control panel readings		Baseline JEI data		Benchmark JEI data	
% Load	Power (KW)	**Ave power (KW)**	n	**Ave power (KW)**	N
72%	500	501	3	501	3
63%	450	450	3	450	3
52%	375	376	3	378	3

Table 2a: Gen-Set fuel consumption measurements.

Control Panel Readings		Baseline JEI data		Benchmark JEI data	
% Load	Power (KW)	**Average fuel consumption (LPH)**	n	**Average fuel consumption (LPH)**	n
72%	500	125	3	119	3
63%	450	111	3	106	3
52%	375	94.6	3	90.0	3

Table 2b: Improvement in fuel consumption: baseline versus benchmark.

Control Panel Readings		**Delta [average fuel consumption (baseline - benchmark)] in LPH**	**% Improvement**
% Load	Power (KW)		
72%	500	6.0	**5%**
63%	450	4.3	**4%**
52%	375	4.6	**5%**

Table 3a: Liters of diesel per KWH (volumetric fuel consumption).

Control Panel Readings		Baseline JEI data		Benchmark JEI data	
% Load	Power (KW)	**Liters/KWH**	n	**Liters/KWH**	n
72%	500	0.249	3	0.237	3
63%	450	0.246	3	0.236	3
52%	375	0.252	3	0.238	3

Table 3b: Evaluation of improvement in volumetric fuel consumption (L/KWH): baseline versus benchmark.

Control Panel Readings		**Delta [L/KWH (baseline - benchmark)]**	**% Improvement**
% Load	Power (KW)		
72%	500	0.012	**5%**
63%	450	0.009	**4%**
52%	375	0.013	**5%**

In conclusion, the performance test demonstrated that the use of EnerBurn® achieved significant reductions in fuel consumption with the Cummins Gen-Set #2. Moreover, power plant personnel observed that the treated engine produced less smoke when a side-to-side visual comparison was made between it and an identical Gen-Set running at the same percent load. They also noted less soot and carbon "throw-off" upon initial start-up and that the Gen-Set #2 simply ran better. Auxiliary measurements of exhaust gas temperature show a significantly lower temperature for the right side of the diesel engine for the benchmark measurement.

Although somewhat subjective in nature, these indicators are consistent with the positive benefits that EnerBurn® is known to provide on engine performance. The combination of quantitative measurements of fuel consumption under rigorously controlled conditions and the qualitative observations of the power plant operators confirm that the test was a success; that the proper use of EnerBurn® was applied throughout the 17-week test period and had the desired effect of improving the thermal efficiency of the engine for Gen-Set #2 by at least 5%. This would include the effects of any degradation in engine performance caused by other factors affecting fuel combustion efficiency that may have occurred over the course of the four (4) month test period.

Appendix 1

Certificates of Calibration – Fuel Flow Meters

TM Series Calibration Report

Customer Name	**Flow-Tech Industries**
CUSTOMER P.O.	
Meter Model:	**TM04ASHE**
Serial Number:	**04C13162**
Average K factor:	**801**

Run	K-Factor
1.00	799
2.00	799
3.00	802
4.00	802
5.00	801

I certify that the above information represents the average K factor of this meter under the conditions tested.

Technician: L. LEBLANC

Date: 9/12/2012

TM Series Calibration Report

Customer Name **Flow-Tech Industries**

CUSTOMER P.O.

Meter Model: **TM04ASHE**

Serial Number: **04C13163**

Average K factor: **807**

Run	K-Factor
1.00	806
2.00	805
3.00	808
4.00	810
5.00	804

I certify that the above information represents the average K factor of this meter under the conditions tested.

Technician: L. LEBLANC

Date: 9/12/2012

Appendix 2

Downloaded Report from DTI Automated Additive Injector Control Box

DTI summary report	Fuel (gallons)	Additive (ounces)	Conversion (ounces per gallon)	Calculated ratio
TOTALS	20145.3	1031.4	128	2500
Average per day	335.8	17.2		2500

DTI Report Data for Last Two Months of Test

Date	Time	Date	Fuel added (gallons)	EnerBurn added (ounces)	Day counter
1-Feb-13	220956	20130201	73.7	3.77	1
	54711	20130201	137.4	7.03	
	215853	20130201	100.09	5.12	
2-Feb-13	183426	20130202	65.09	3.33	2
3-Feb-13	195601	20130203	61.6	3.15	3
4-Feb-13	124501	20130204	59.18	3.03	4
	202817	20130204	85.89	4.4	
	230650	20130204	120.35	6.16	
5-Feb-13	22638	20130205	94.24	4.83	5
	50835	20130205	103.51	5.3	
	93105	20130205	145.96	7.47	
	164726	20130205	180.81	9.26	
	200720	20130205	104.73	5.36	
	223603	20130205	77.66	3.98	
6-Feb-13	160903	20130206	99.84	5.11	6
	204709	20130206	68.57	3.51	
7-Feb-13	75720	20130207	72.47	3.71	7
	104747	20130207	102.88	5.27	
	144049	20130207	101.08	5.18	
	173712	20130207	94.3	4.83	
	205716	20130207	82.57	4.23	
	225553	20130207	56.68	2.9	
8-Feb-13	20210	20130208	92.87	4.75	8
	34959	20130208	61.43	3.15	
	194018	20130208	77.09	3.95	
	232138	20130208	144	7.37	
	24604	20130209	78.93	4.04	

9-Feb-13	52755	20130209	105.88	5.42	9
	82608	20130209	112.7	5.77	
	103823	20130209	77.61	3.97	
	215034	20130209	142.81	7.31	
10-Feb-13	232318	20130210	61.92	3.17	10
11-Feb-13	200823	20130211	98.11	5.02	11
	220627	20130211	56.47	2.89	
12-Feb-13	43609	20130212	124.05	6.35	12
	111120	20130212	112.55	5.76	
	135559	20130212	89.01	4.56	
	160418	20130212	61.64	3.16	
	201950	20130212	100.03	5.12	
	232436	20130212	111.3	5.7	
13-Feb-13	51610	20130213	151.26	7.74	13
	103007	20130213	68.77	3.52	
	143913	20130213	105.89	5.42	
	171458	20130213	96.08	4.92	
	224014	20130213	148.36	7.6	
14-Feb-13	45935	20130214	69.9	3.58	14
	223251	20130214	152.22	7.79	
15-Feb-13	114217	20130215	62.95	3.22	15
	222256	20130215	154.88	7.93	
16-Feb-13	222809	20130216	144.93	7.42	16
17-Feb-13	202549	20130217	96.58	4.95	17
18-Feb-13	42853	20130218	183.32	9.39	18
	102401	20130218	74.1	3.79	
	204037	20130218	81.56	4.18	
	233040	20130218	66.13	3.39	
19-Feb-13	50342	20130219	129.69	6.64	19
	100710	20130219	145.18	7.43	
	145816	20130219	78.87	4.04	
	172030	20130219	113.16	5.79	
	222104	20130219	161.45	8.27	
20-Feb-13	20529	20130220	64.32	3.29	20
	50228	20130220	57.29	2.93	
	85803	20130220	108.94	5.58	
	111834	20130220	74.05	3.79	
	151836	20130220	117.25	6	
	230053	20130220	167.43	8.57	
21-Feb-13	21813	20130221	62.98	3.22	21
	43858	20130221	82.44	4.22	
	90908	20130221	124.41	6.37	
	112501	20130221	58.02	2.97	

	155055	20130221	107.54	5.51	
	174300	20130221	84.74	4.34	
	221408	20130221	121.11	6.2	
22-Feb-13	223701	20130222	141.07	7.22	22
23-Feb-13	201025	20130223	96.57	4.94	23
	220455	20130223	64.83	3.32	
24-Feb-13	43432	20130224	116.89	5.98	24
	100545	20130224	139.54	7.14	
	143955	20130224	123.61	6.33	
	203234	20130224	76.28	3.91	
	232259	20130224	85.31	4.37	
25-Feb-13	14550	20130225	61.63	3.16	25
	50414	20130225	117.84	6.03	
	81135	20130225	88.98	4.56	
	102810	20130225	65.63	3.36	
	221520	20130225	153.26	7.85	
26-Feb-13	224702	20130226	89.33	4.57	26
27-Feb-13	204919	20130227	78.54	4.02	27
	231346	20130227	69.28	3.55	
28-Feb-13	222811	20130228	147.09	7.53	28
1-Mar-13	33139	20130301	95.36	4.88	29
	200721	20130301	76.28	3.91	
	215848	20130301	56.4	2.89	
2-Mar-13	42501	20130302	126.77	6.49	30
	103832	20130302	98.72	5.05	
	141723	20130302	93.96	4.81	
	203304	20130302	90.55	4.64	
3-Mar-13	183744	20130303	119.51	6.12	31
4-Mar-13	204606	20130304	77.73	3.98	32
6-Mar-13	852	20130306	111.13	5.69	33
	174848	20130306	108.36	5.55	
	204015	20130306	64.7	3.31	
	233037	20130306	104.94	5.37	
7-Mar-13	15908	20130307	77.82	3.98	34
	53729	20130307	80.16	4.1	
	163310	20130307	114.08	5.84	
	202445	20130307	110.61	5.66	
8-Mar-13	42540	20130308	143.41	7.34	35
	141837	20130308	107.45	5.5	
	161244	20130308	64.89	3.32	
	204214	20130308	84.89	4.35	
	232211	20130308	95.57	4.89	
	174934	20130309	70.96	3.63	

9-Mar-13	224832	20130309	170.73	8.74	36
10-Mar-13	25005	20130310	98.4	5.04	37
11-Mar-13	230449	20130311	129.64	6.64	38
12-Mar-13	30719	20130312	73.38	3.76	39
	212753	20130312	79.69	4.08	
	233440	20130312	99.29	5.08	
13-Mar-13	41512	20130313	166.93	8.55	40
	92117	20130313	100.17	5.13	
	174030	20130313	197.94	10.13	
	202133	20130313	100.68	5.15	
	221154	20130313	56.04	2.87	
14-Mar-13	141346	20130314	65.53	3.35	41
	162755	20130314	78.47	4.02	
	202029	20130314	78.37	4.01	
	231912	20130314	91.08	4.66	
15-Mar-13	81334	20130315	178.93	9.16	42
	95059	20130315	63.61	3.26	
	172105	20130315	58.63	3	
	233523	20130315	158.14	8.1	
16-Mar-13	222837	20130316	121.5	6.22	43
18-Mar-13	84535	20130318	127.21	6.51	44
	114028	20130318	78.85	4.04	
	143743	20130318	113.36	5.8	
	171317	20130318	62.89	3.22	
	201528	20130318	60.56	3.1	
	232410	20130318	154.29	7.9	
19-Mar-13	20643	20130319	65.24	3.34	45
	41718	20130319	62.52	3.2	
	200207	20130319	80.47	4.12	
	221044	20130319	60.81	3.11	
20-Mar-13	44325	20130320	167.1	8.56	46
	121409	20130320	97.55	4.99	
	152149	20130320	122.76	6.29	
	203527	20130320	94.58	4.84	
	232212	20130320	83.78	4.29	
21-Mar-13	23244	20130321	106.28	5.44	47
	53651	20130321	108.31	5.55	
	91339	20130321	111.93	5.73	
	172852	20130321	90.68	4.64	
	225114	20130321	147.68	7.56	
22-Mar-13	20358	20130322	78.41	4.01	48
	53052	20130322	81.44	4.17	
	92347	20130322	94.8	4.85	

	162046	20130322	127.97	6.55	
	211455	20130322	137.65	7.05	
23-Mar-13	22025	20130323	83.35	4.27	49
	42130	20130323	71.58	3.66	
	101503	20130323	128.98	6.6	
	113201	20130323	57.98	2.97	
	155344	20130323	60.16	3.08	
	204256	20130323	66.81	3.42	
	224155	20130323	125.9	6.45	
24-Mar-13	25451	20130324	74.91	3.84	50
	51822	20130324	84.57	4.33	
	100026	20130324	148.51	7.6	
	162905	20130324	155.84	7.98	
	212543	20130324	117.87	6.04	
25-Mar-13	20906	20130325	106.35	5.45	51
	40115	20130325	67.27	3.44	
	94417	20130325	78.75	4.03	
	172750	20130325	93.84	4.8	
	201517	20130325	101.79	5.21	
	215804	20130325	59.58	3.05	
26-Mar-13	50021	20130326	159.73	8.18	52
	101529	20130326	123.78	6.34	
	113426	20130326	58.9	3.02	
	141327	20130326	98.5	5.04	
	163144	20130326	73.21	3.75	
	203042	20130326	95.01	4.86	
	232114	20130326	78.59	4.02	
27-Mar-13	22643	20130327	63.33	3.24	53
	52624	20130327	115.22	5.9	
	81102	20130327	87.82	4.5	
28-Mar-13	84537	20130328	78.83	4.04	54
	111658	20130328	81.23	4.16	
	152216	20130328	129.74	6.64	
	170227	20130328	64.23	3.29	
29-Mar-13	52634	20130329	98.33	5.03	55
30-Mar-13	91733	20130330	93.81	4.8	56
1-Apr-13	42806	20130401	97.68	5	57
	104856	20130401	127.65	6.54	
	165303	20130401	234.13	11.99	
	202444	20130401	92.04	4.71	
	222113	20130401	63.63	3.26	
3-Apr-13	15110	20130403	97.3	4.98	58
	34517	20130403	61.57	3.15	

4-Apr-13	10732	20130404	70.98	3.63	59
	172633	20130404	61.96	3.17	
5-Apr-13	14223	20130405	59.38	3.04	60
	50633	20130405	107.64	5.51	

Appendix 3

Exhaust Temperature Measurements Using an Omega Instruments Handheld Pyrometer

Table 1: Summary of temperature measurements (degrees F) as an indicator of lower exhaust temperatures with use of EnerBurn®

Delta [average temperature: (baseline – benchmark)]				
Location:	Supply-FFM	Return-FFM	L-EGT	R-EGT
440 kW	8	6	-7	29
360 KW	3	1	12	30
significant (Y/N):	somewhat	somewhat	no	**yes**

Table 2: Baseline measurements of exhaust gas temperature.

Exhaust gas temperature data	Date	Approx. time	Run #	A-FFM Supply (deg. F)	B-FFM Return (deg. F)	Eng. Exhaust-L (deg. F)	Eng. Exhaust-R (deg. F)
440 kW	11-04-'12	11:45	1	110	bad reading	898	880
63% load	11-04-'12	13:05	2	112	124	890	870
	11-04-'12	13:23	3	113	122	900	870
	11-04-'12	13:44	4	112	122	894	860
			Average temp	**112**	**123**	**896**	**870**
			Std_dev temp	**1**	**1**	**4**	**8**
360 kW	11-03-'12	17:00	1	106	116	840	800
52% load	11-03-'12		2	103	106	837	805
	11-03-'12		3	99	112	830	798
	11-04-'12	11:00	4	106	116	838	798
			Average temp	**104**	**113**	**836**	**800**
			Std_dev temp	**3**	**5**	**4**	**3**

Table 3: Benchmark measurements of exhaust gas temperature.

Exhaust gas temperature data	Date	Approx time	Run #	A-FFM supply (deg. F)	B-FFM return (deg. F)	Eng. Exhaust-L (deg. F)	Eng. Exhaust-R (deg. F)
500 kW	4-Apr-13	17:30	1	94	109	950	880
72% load		18:00	2	94	109	945	886
	5-Apr-12	11:05	3	107	120	940	880
		11:25	4	103	116	944	883
		16:45	5	101	110	923	886
			Average temp	**100**	**113**	**940**	**883**
			Std_dev Temp	**6**	**5**	**10**	**3**
440 kW	5-Apr-13	11:45	1	105	120	914	841
63% load		12:15	2	101	118	907	845
		14:30	3	106	116	902	844
		15:05	4	n.m	n.m	n.m	n.m
		17:15	5	102	111	886	834
			Average Temp	**104**	**116**	**902**	**841**
			Std_dev Temp	**2**	**4**	**12**	**5**
360 kW	5-Apr-13	15:25	1	98	110	830	770
52% load		15:45	2	102	112	818	770
		16:10	3	101	113	824	770
			Average Temp	**100**	**112**	**824**	**770**
			Std_dev Temp	**2**	**2**	**6**	**0**