

Air Quality

The proposed addition is not anticipated to have any impacts on air quality. Air quality impacts for any project may be affected by increase in number of vehicles (mobile sources) or new heating/energy producing sources (stationary sources). As stated previously the project is not anticipated to increase traffic volumes and therefore no new mobile source emissions are anticipated. The project does include the installation of new boilers and an emergency generator. The project will comply with the New York State Ambient Air Quality Standards (NAAQS) for these potential new emission sources. Total facility emissions shall be below the major source threshold. Details regarding these systems are as follows:

Boiler System

The boiler system for the proposed project would provide heat and hot water. The system will consist of two, 275 gallon gas fired condensing boilers with 3,000 MBTUH input. See attached technical data that indicates that these are certified low NOx performance.

Generator

One (1) - 750 KW, diesel fuel-fired emergency generator to provide emergency power for the new facility. See attached technical data that indicates this generator meets the requirements of Tier 2 Standby Engine.

Bulletin: M-102

Date: 01/11/2011

Supersedes: N/A

TECHNICAL DATA



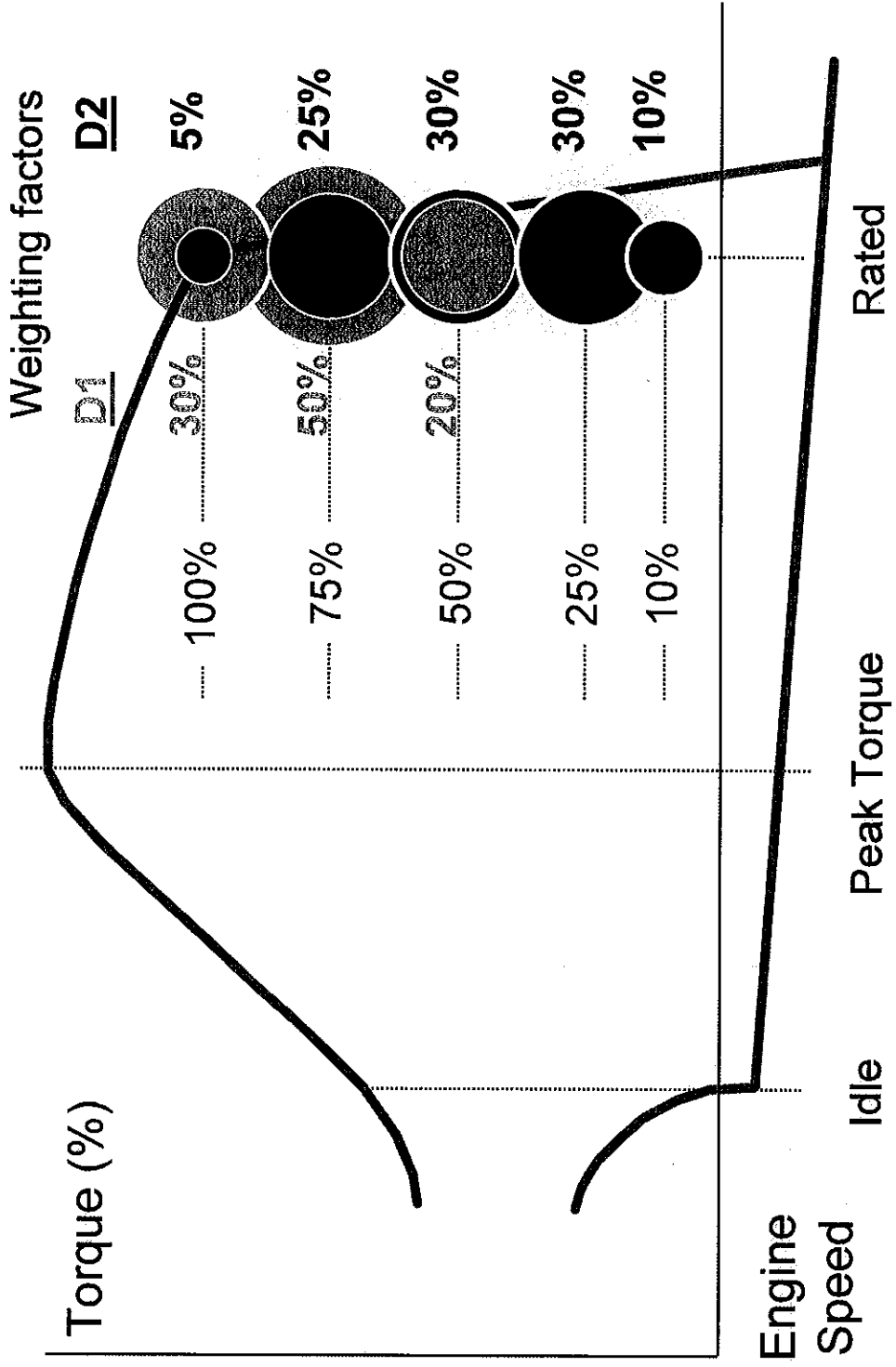
MACH® CONDENSING BOILER COMBUSTION DATA

Size	Units	C300	C450	C750	C900	C1050	C1500	C2000	C2500	C3000
Input	MBtu/hr	300	450	750	900	1,050	1,500	2,000	2,500	3,000
Output	MBtu/hr	276	414	713	846	987	1,440	1,920	2,375	2,850
BHP		8.2	12.4	21.3	25.3	29.5	43.0	57.3	70.9	85.1
Fuel Rate	cfh	291	437	728	874	1,019	1,456	1,942	2,427	2,913
Air Requirement	SCFM	63	94	157	189	220	315	420	524	629
Flue Gas Flow	ACFM	83	124	207	248	290	414	552	690	828
Flue Gas Flow	fps	15.8	15.2	17.6	11.9	13.8	12.6	16.9	21.1	25.3
Emmission:										
Dry Flue Gas Flow	pph	265	397	662	794	927	1,324	1,765	2,206	2,647
Wet Flue Gas Flow	pph	296	445	741	889	1,037	1,482	1,976	2,470	2,964
CO ₂	pph	36	53	89	107	124	178	237	286	347
CO	ppm	67	67	64	64	64	19	19	21	23
NO _x	ppm	7	7	6	9	9	14	14	9.2	7.2





Nonroad Emission Regulations ISO 8178 D2 5-mode Test Cycle



HARSCO

INDUSTRIAL



Condensing Boilers

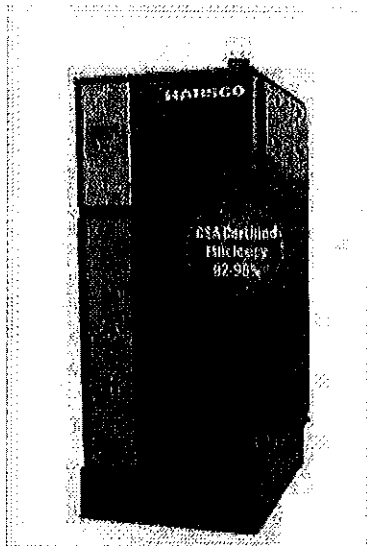
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The MACH® ultra high efficiency condensing boiler is a universal boiler, suitable for condensing, non-condensing and combination systems. CSA certified at up to 96 percent efficiency, delivering actual net thermal efficiencies to 99 percent, MACH® boilers demonstrate Harsco's commitment to green technology and innovation. The ultra high efficiency helps our customers reduce their fuel bills by as much as 80 percent.

The state-of-the-art ENVI® control permits monitoring and adjustment of boiler operations. This proprietary control has advanced features such as cascade sequencing, boiler start rotation, and building management system integration via MODBUS® protocol.

MODBUS® is a registered trademark owned by Schneider Automation Inc.

MACH® Boiler



92-96% CSA certified efficiency

Model/Series

- C300 (300 MBTU)
- C450 (450 MBTU)
- C750 (750 MBTU)
- C900 (900 MBTU)
- C1050 (1050 MBTU)
- C1500 (1500 MBTU)
- C2000 (2000 MBTU)
- C2500 (2500 MBTU)
- C3000 (3000 MBTU) NEW!

Once again, Harsco leads the industry into a whole new dimension with a boiler of vastly greater capability and performance precisely tailored to today's conditions and requirements. Yet the MACH® boiler works as well in old systems as in the most radically modern ones, and in a wide range of temperatures to achieve unprecedented cost savings and efficiencies. Users have reduced their fuel bills as much as 80 percent.

Now equipped with Harsco's proprietary ENVI® control - with advanced features such as cascade sequencing, boiler start rotation, and building management system integration via MODBUS® protocol - MACH® boilers are easy to program and operate in modern, advanced system designs.

For more information about this product, [contact us](#) or [click here](#) to find your authorized Harsco boiler representative.

To order a MACH® condensing boiler, [contact](#) your authorized Harsco boiler representative.

MODBUS® is a registered trademark owned by Schneider Automation Inc.

[Features](#) [Advantages](#) [Case Studies](#) [Technical Documents](#)

- All purpose boiler suitable for condensing and non-condensing systems
- Revolutionary new, fully independent cast sectional heat exchanger
- Unique aluminum alloy resists corrosive condensate
- New boiler room layouts and control methods
- ~~Certified low NO_x performance~~
- Low water-side pressure drop
- Full modulation burner with 5:1 turndown
- Variable speed combustion air blower
- Automatically compensates for changes in air temperature and pressure
- Certified at 3.5" minimum gas pressure
- Optional outdoor and roof models



**Power
Generation**

**EPA Tier 2 Exhaust Emission
Compliance Statement
750DQFAA
60 Hz Diesel Generator Set**

Compliance Information:

The engine used in this generator set complies with the Tier 2 emissions limits of U.S EPA New Source Performance Standards for Stationary Emergency engines under the provisions of 40 CFR 60 Subpart IIII when tested per ISO 8178 D2.

Engine Manufacturer:	Cummins Inc
EPA Certificate Number:	CEX-STATCI-11-05
Effective Date:	06/08/2010
Date Issued:	06/08/2010
EPA Diesel Engine Family:	BCEXL030.AAD
CARB Executive Order:	

Engine Information:

Model:	Cummins Inc QST30-G5 NR2	Bore:	5.51 in. (140 mm)
Engine Nameplate HP:	1490	Stroke:	6.5 in. (165 mm)
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Displacement:	1860 cu. in. (30.5 liters)
Aspiration:	Turbocharged and Low Temperature Aftercooled (Air-to-Air)		
Compression Ratio:	14.7:1		
Emission Control Device:	Turbocharged and Low Temperature Aftercooled(Air-to-Air)		

U.S. Environmental Protection Agency NSPS Stationary Emergency Tier 2 Limits

(All values are Grams per HP-Hour)

<u>COMPONENT</u>	
NOx + HC (Oxides of Nitrogen as NO2 + Non Methane Hydrocarbons)	4.77
CO (Carbon Monoxide)	2.61
PM (Particulate Matter)	0.15

Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.



**Power
Generation**

Exhaust Emission Data Sheet

750DQFAA

60 Hz Diesel Generator Set

Engine Information:

Model:	Cummins Inc. QST30-G5 NR2	Bore:	5.51 in. (139 mm)
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Stroke:	6.5 in. (165 mm)
Aspiration:	Turbocharged and Low Temperature aftercooled	Displacement:	1860 cu. in. (30.4 liters)
Compression Ratio:	14.7:1		
Emission Control Device:	Aftercooled (Air-to-Air)		

	<u>1/4</u>	<u>1/2</u>	<u>3/4</u>	<u>Full</u>	<u>Full</u>	
PERFORMANCE DATA	Standby	Standby	Standby	Standby	Prime	
BHP @ 1800 RPM (60 Hz)	276	551	827	1102	999	
Fuel Consumption (gal/Hr)	14.8	27.1	39.8	52.7	47.9	
Exhaust Gas Flow (CFM)	2350	3620	4930	6310	5880	
Exhaust Gas Temperature (°F)	553	686	770	816	798	
EXHAUST EMISSION DATA						
HC (Total Unburned Hydrocarbons)	0.22	0.11	0.10	0.09	0.09	
NOx (Oxides of Nitrogen as NO2)	5.81	4.50	3.83	3.97	3.88	
CO (carbon Monoxide)	1.38	0.48	0.37	0.46	0.43	
PM (Particular Matter)	0.19	0.17	0.14	0.12	0.13	
SO2 (Sulfur Dioxide)	0.12	0.11	0.10	0.10	0.10	
Smoke (Bosch)	0.65	0.84	0.79	0.79	0.80	

All Values are Grams/HP-Hour, Smoke is Bosch #

TEST CONDITIONS

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load ($\pm 2\%$). Pressures, temperatures, and emission rates were stabilized.

Fuel Specification: 46.5 Cetane Number, 0.035 Wt. % Sulfur; Reference ISO8178-5, 40CFR86.1313-98 Type 2-D and ASTM D975 No. 2-D.
 Fuel Temperature: 99 ± 9 °F (at fuel pump inlet)
 Intake Air Temperature: 77 ± 9 °F
 Barometric Pressure: 29.6 ± 1 in. Hg
 Humidity: NOx measurement corrected to 75 grains H2O/lb dry air
 Reference Standard: ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.