California Environmental Protection Agency AIR RESOURCES BOARD	MARINE POWER HOLDING, LLC	EXECUTIVE ORDER U-W-014-0012 New Spark-Ignition Marine Engines

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code Sections 43013, 43018, 43101, 43102 and 43104; and

Pursuant to the authority vested in the undersigned by Health and Safety Code Sections 39515 and 39516 and Executive Order G-02-003;

IT IS ORDERED AND RESOLVED: That the following new spark-ignition marine engine and emission control systems (ECS) produced by the manufacturer are certified as described below. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	FUEL TYPE	DISPLACEMENT (cc)	LEVEL OF CLEANLINESS
2008	8MPEM05.7005	Gasoline	5700, 5000	Super Ultra Low Emission ("Four Stars")

EQUIPMENT APPLICATION	ECS & SPECIAL FEATURES	ENGINE TYPE
Inboard	Three Way Catalytic Converter, Heated Oxygen Sensor, Sequential Multiport Fuel Injection, On Board Diagnostic System	4-Stroke

ENGINE MODELS (rated power in kilowatts, kW)	J5.7V-NW (235 kW) S5.7VSKI (235 kW) S5.0VSKI (206 kW)

The following are the hydrocarbon plus oxides of nitrogen (HC+NOx) exhaust emission standard (Title 13, California Code of Regulations, (13 CCR) Section 2442(b)) and certification emission level in grams per kilowatt-hour (g/kW-hr) for this engine family. Engines in this engine family shall discharge no crankcase emissions into the ambient atmosphere in conformance with 13 CCR Section 2442(b).

	STANDARD (g/kW-hr)	CERTIFICATION LEVEL (g/kW-hr)
HC+NOx	5.0	1.5

This engine family shall not be used to determine compliance through corporate averaging.

BE IT FURTHER RESOLVED: That for the listed engines, the manufacturer has submitted, and the Executive Officer hereby approves, the information and materials to demonstrate certification compliance with 13 CCR Sections 2443.1, 2443.2 and 2443.3 (emission control, consumer, and environmental labels), Section 2444.2 (on-board engine malfunction detection system), and Sections 2445.1 and 2445.2 (emission control system warranty).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 25 day of September 2008.

Annette Hebert, Chief
Mobile Source Operations Division

California Environmental Protection Agency

AIR RESOURCES BOARD

CERTIFICATION SUMMARY SI MARINE ENGINES

Type: NEW

1. MODEL-YEAR 2008 MANUFACTURER: MARINE POWER HOLDING, LLC. EXECUTIVE ORDER: U-W-014-0012

2. Engine Family(EF) Name: a. EPA-Standardized: 8MPEM05.7005 b. EF Name on Engine Label: 8MPEM05.7005

c. Trade Name (e.g., Optimax): Vortec Major Equipment Applications: INBD

3. All Engine Sales Codes within EF: CA

4. All Engine Displacement in EF in cubic centimeters (cc): 1) 5000 2) 5700 3) 4) 5)

5. EF Rated Power (in kW): Highest Power: 235 Lowest Power: 206 Sales-Weighted Power: 210

6. HC+NOx Emission Standard (g/kW-hr): 5 HC+NOx Emission Standard Type: DS

7. Environmental Cleaniness / Number of Stars Rating: 4 Corresponding: TIER4 Star_Label HC+NOx_std (g/kW-hr): 5

8. Engine Design: a) Combustion Cycle: four-stroke if 2-stroke, Oil/Fuel Ratio is

b) Engine Type: Reciprocating c) Valvetrain Overhead d) Total Number of Intake + Exhaust Valves/Ports per Cyl.: 2

e) Type of Engine Cooling Water f) Number of Cylinders: 8 g) Cylinder Arrangement: V

h) Operating Fuel: (i) system type: Dedicated (ii) Fuel: Operating_Fuel: GAS

9. Emission Control Systems: TWC HO2S SFI * NAT * EM OBD

10. Deterioration Factors (DFs): a. New Durability Testing?: YES if Carryover, from Engine Family

b. Dura. Eng. Model S57VSKI DF Eng. ID: 48995 Service Accumulation Hours 126

c. DF Type: multiplicative d. DF Values: HC: 1.1832 NOx: 1.5595 HC+NOx: 1.326 CO: 1.48

11. Certification Test Engine Information: (EDE) Type: NEW if carryover, from Engine Family:

a. Test Engine (EDE) : Model: S57VSKI EDE ID 48995 Rated Power,kW: 235 @ 5000 rpm

Break-in/Stabilization Hours: 5.8 CERT_Test Date: 011808

b. Test Fuel: (i) CAA Baseline

c. Test Procedure (TP): (i) RGM (ii) Test Cycle: 5-Mode

(iii) Special Test Equipment

12. HC+NOx Certification Emission Levels (in g/kW-hr): 1.474

Test No. and Type, Fuel	Official Test Results. g/kW-hr				Deteriorated Certification Emissions, g/kW-hr (i.e., with DFs applied)			
	HC	NOx	HC+NOx	CO	HC	NOx	HC+NOx	CO
CTG	0.6886	0.4228	1.1114	4.5	0.8147	0.6594	1.474	6.66

Quality Audit Procedure: Manufacturer's Issue Date: 2/1/2008 Revision Date:

Remarks: Low permeation liquid hose is used.

Models: S5.0VSKI, S5.7VSKI, J5.7V-NW

Processed By: K. Cuevas Date Processed: 9/17/08 Review By: J Jegede Date Reviewed: 9/18/08