California Environmental Protection Agency AIR RESOURCES BOARD	MITSUBISHI HEAVY INDUSTRIES, LTD.	EXECUTIVE ORDER U-R-035-0272 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

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

IT IS ORDERED AND RESOLVED: That the following compression-ignition engine and emission control system produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2009	9MVXL05.0AAD	3.3, 5.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection	Crane, Loader, Tractor, Dozer, Pump, Compressor, Generator and Industrial Equipment

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37 ≤ KW < 56	Tier 4 Interim	STD	N/A	N/A	4.7	5.0	0.30	20	15	50
		CERT	--	--	4.1	0.7	0.23	4	3	7

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (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 22nd day of January 2009.

Raphael Susnowitz

for Annette Hebert, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 1

Engine Model Summary Template

U-R-035-0272

Engine Family	1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mm/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6:Torque @ RPM (SEA Gross)	7.Fuel Rate: mm/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
9MVXL05.0AAD	S4S-83PA	S4S-DP	63HP@2500	44	24	148ftlb@1600	49	17	IDI
9MVXL05.0AAD	S4S-84PA	S4S-DP	63HP@2500	44	24	148ftlb@1600	49	17	IDI
9MVXL05.0AAD	S4S-Y35AFL	S4S-DP	50HP@2250	41	21	132ftlb@1800	44	18	IDI
9MVXL05.0AAD	S6S-Y35AFL	S6S-DP	70HP@2300	40	31	184ftlb@1700	44	25	IDI
9MVXL05.0AAD	S4S-Y363GT	S4S-DP	56HP@2500	41	23	141ftlb@1700	46	18	IDI
9MVXL05.0AAD	S4S-Y365DP	S4S-DP	63HP@2500	44	24	148ftlb@1600	49	17	IDI
9MVXL05.0AAD	S4S-Y367DP	S4S-DP	63HP@2500	44	24	148ftlb@1600	49	17	IDI
9MVXL05.0AAD	S4S-Y368DP	S4S-DP	63HP@2500	44	24	148ftlb@1600	49	17	IDI