California Environmental Protection Agency AIR RESOURCES BOARD	DETROIT DIESEL CORPORATION AND MTU	EXECUTIVE ORDER U-R-007-0089 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 engines and emission control systems 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)
2004	4DDXL65.0XTE	32.5, 48.7 and 65.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Engine Control Module, Turbocharger, Charge Air Cooler	Crane, Pump, Compressor, Generator Set

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons 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
kW > 560	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	20	15	50
		CERT	1.0	8.4	--	1.3	0.19	16	3	21

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 23RD day of December 2003.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: **Detroit Diesel Corporation and MTU**

Engine category: **Nonroad CI**

EPA Engine Family: **4DDXL65.0XTE**

Mfr Family Name: **SERIES 4000**

Process Code: **New Submission**

EO# U-R-007-0089
ATTACHMENT (PAGE 1 OF 2)

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
5400	16V-4000	3000 @ 1900	629	1060	9220 @ 1650	660	966	EC TAW DDI, TC
5336	16V-4000	2700 @ 1900	561	945	8064 @ 1500	557	741	EC TAW ECM, C
5337	16V-4000	2500 @ 1900	515	867	7486 @ 1500	519	690	EC TAW (ALL MODELS
5338	16V-4000	2300 @ 1900	471	793	6870 @ 1500	477	635	EC TAW
5404	16V-4000	2146 @ 1800	446	712	7520 @ 1500	521	693	EC TAW
5405	16V-4000	2100 @ 1900	429	723	7352 @ 1500	510	678	EC TAW
5406	16V-4000	2000 @ 1900	410	690	7003 @ 1500	486	647	EC TAW
5407	16V-4000	1800 @ 1900	372	626	6302 @ 1500	438	583	EC TAW
5408	16V-4000	2935 @ 1800	634	1012	Constant speed	NA	NA	EC TAW
5409	16V-4000	2550 @ 1800	541	863	Constant speed	NA	NA	EC TAW

Engine Model Summary Form

Manufacturer: **Detroit Diesel Corporation and MTU**

Engine category: **Nonroad CI**

EPA Engine Family: **4DDXL65.0XTE**

Mfr Family Name: **SERIES 4000**

Process Code: **New Sub - continued**

EO# U-R-007-0089
ATTACHMENT (PAGE 2 OF 2)

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
5412	12V-4000	2250 @ 1900	629	795	6915 @ 1650	659	724	EC TAW DD1, 7
		2000 @ 2100	541	756	6915 @ 1650	659	724	EC TAW CAR, EC
5413	12V-4000	2025 @ 1900	561	709	6047 @ 1500	557	556	EC TAW (ALL MODEL
5414	12V-4000	1875 @ 1900	514	650	5613 @ 1500	518	517	EC TAW
5415	12V-4000	1725 @ 1900	470	594	5151 @ 1500	477	476	EC TAW
5416	12V-4000	1600 @ 1900	425	537	5602 @ 1500	521	520	EC TAW
5417	12V-4000	2200 @ 1800	634	759	Constant speed	NA	NA	EC TAW
5418	12V-4000	1850 @ 1800	519	621	Constant speed	NA	NA	EC TAW
5422	12V-4000	1850 @ 1800	539	645	Constant speed	NA	NA	EC TAW
5421	8V-4000	1350 @ 1900 (1007 KW)	562	473	4590 @ 1500	556	370	EC TAW
5342	8V-4000	1500 @ 1900	629	530	4610 @ 1650	660	483	EC TAW
5408	8V-4000	1468 @ 1800	634	506	Constant speed	NA	NA	EC TAW