File

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-7-41

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

DETROIT DIESEL CORPORATION

Pursuant to the authority vested in the Air Resources Board at Sections 43000.5, 43013, and 43018 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned at Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-9; and

Pursuant to the December 15, 1998 Settlement Agreement between the Air Resources Board and Detroit Diesel Corporation and any modification to the Settlement Agreement;

IT IS ORDERED AND RESOLVED: That the following diesel engines and exhaust emission control systems produced by the manufacturer are certified as described below for use in heavy-duty off-road equipment:

Model Year: 2000

Typical Equipment Usage: Loader, Generator and Industrial equipment

Engine Power Ratings Range: Over 750 horsepower

Fuel Type: Diesel

Engine Family	Displacement Liters	Displacement Cubic Inches	Exhaust Emission Control Systems and Special Features
YDDXL65.0VTE (Series 4000)	65.0	3959	Engine Control Module
	48.7	2966	Turbocharger
	32.5	1979	Charge Air Cooler

The engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The exhaust emission certification standards and certification values in grams per brake horsepower-hour (g/bhp-h) for total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM), and the opacity-of-smoke certification standards and certification values in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

	Exhaust Emissions (g/bhp-h)				Smoke Opacity (%)		
	THC	CO	NOx	PM	Accel	Lug	Peak
Standard	1.0	8.5	6.9	0.4	20	15	50
Certification	0.8	1.0	6.2	0.1	16	3	21

BE IT FURTHER RESOLVED: That the listed engine models comply with "Exhaust Emission Standards and Test Procedures—Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with "Emission Control Labels—1996 and Later Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model-year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 *et seq.*).

BE IT FURTHER RESOLVED: That the aforementioned engine family has been conditionally certified subject to the following conditions:

1. The Settlement Agreement is in effect.
2. The manufacturer is in compliance with all applicable certification requirements of the Settlement Agreement.

Engines certified under this Executive Order must conform to all applicable California emission regulations and to all applicable terms and conditions of the Settlement Agreement.

Executed at El Monte, California this 6th day of January 2000.

R. B. Summerfield, Chief
Mobile Source Operations Division

11/11/99

LARGE ENGINE MODEL SUMMARY

EO: U-R-7-41

Manufacturer: **Detroit Diesel Corporation**

Process Code: **New Submission**

EPA Engine Family: **YDDXL65.0VTE**

Manufacturer Family Name: **SERIES 4000**

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
12A2250	12V-4000	2250 @ 1900	629	795	6915 @ 1650	659	724	EC TAW
12B2025	12V-4000	2025 @ 1900	561	709	6047 @ 1500	557	556	EC TAW
12C1875	12V-4000	1875 @ 1900	514	650	5613 @ 1500	518	517	EC TAW
12D1725	12V-4000	1725 @ 1900	470	594	5151 @ 1500	477	476	EC TAW
12E1600	12V-4000	1600 @ 1900	425	537	5602 @ 1500	521	520	EC TAW
12GS1	12V-4000	2200 @ 1800	634	759	GEN SET	NA	NA	EC TAW
12GS2	12V-4000	1850 @ 1800	519	621	GEN SET	NA	NA	EC TAW
8A1350	8V-4000	1350 @ 1900	562	473	4590 @ 1500	556	370	EC TAW
8T1500	8V-4000	1500 @ 1900	629	530	4610 @ 1650	660	483	EC TAW
8TGS1	8V-4000	1468 @ 1800	634	506	GEN SET	NA	NA	EC TAW

12/9/99

LARGE ENGINE MODEL SUMMARY

EO:U-R-7-41

Manufacturer: **Detroit Diesel Corporation**

Process Code: **New Submission**

EPA Engine Family: **YDDXL65.0VTE**

Manufacturer Family Name: **Series 4000**

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
16A3000	16V-4000	3000 @ 1950	613	1060	9220 @ 1650	660	966	EC TAW
16B2700	16V-4000	2700 @ 1900	561	945	8064 @ 1500	557	741	EC TAW
16C2500	16V-4000	2500 @ 1900	515	867	7486 @ 1500	519	690	EC TAW
16D2300	16V-4000	2300 @ 1900	471	793	6870 @ 1500	477	635	EC TAW
16E2145	16V-4000	2146 @ 1800	446	712	7520 @ 1500	521	693	EC TAW
16F2100	16V-4000	2100 @ 1900	429	723	7352 @ 1500	510	678	EC TAW
16H2000	16V-4000	2000 @ 1900	410	690	7003 @ 1500	486	647	EC TAW
16I1800	16V-4000	1800 @ 1900	372	626	6302 @ 1500	438	583	EC TAW
16GS1	16V-4000	2935 @ 1800	634	1012	GEN SET	NA	NA	EC TAW
16GS2	16V-4000	2550 @ 1800	541	863	GENSET	NA	NA	EC TAW