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State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-7-35

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

DETROIT DIESEL CORPORATION

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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-45-9;

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

IT IS ORDERED AND RESOLVED: That the following Detroit Diesel Corporation 1999 model-year engines with rated power between 175 and 750 horsepower and exhaust emission control systems are certified as described below in heavy-duty off-road equipment:

Typical Equipment Usage: Pump, Compressor, and Generator Set

Fuel Type: Diesel

<u>Engine Family</u>	<u>Displacement</u>		<u>Exhaust Emission Control Systems and Special Features</u>
	<u>Liters</u>	<u>Cubic Inches</u>	
XDDXL15.9TRE (8V-S2000)	15.9	970	Charge Air Cooler Turbocharger Electronic Control Module

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

<u>Exhaust Emissions (g/bhp-hr)</u>				<u>Smoke Opacity (%)</u>		
<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx, and PM exhaust emissions certification values in grams per brake horsepower-hour, and the opacity-of-smoke emissions certification values in percent for this engine family are:

<u>Exhaust Emissions (g/bhp-hr)</u>				<u>Smoke Opacity (%)</u>		
<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>PM</u>	<u>Accel</u>	<u>Lug</u>	<u>Peak</u>
0.2	0.8	6.3	0.05	13	2	32

BE IT FURTHER RESOLVED: That the listed engine models comply with the "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 the "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.

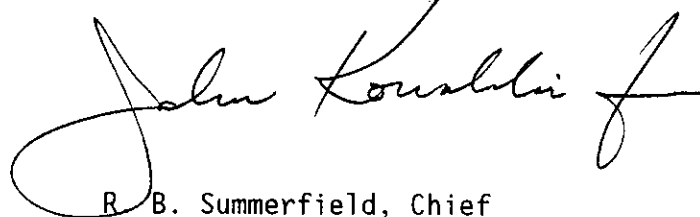
BE IT FURTHER RESOLVED: That for the listed engine models the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Sections 2425 et seq.).

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 Settlement Agreement has not become null and void under Settlement Agreement Paragraph 165.
3. Detroit Diesel Corp. 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 11th day of January 1999.



R. B. Summerfield, Chief
Mobile Source Operations Division

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LARGE ENGINE MODEL SUMMARYManufacturer: **Detroit Diesel Corporation**Process Code: **New Submission**EPA Engine Family: **XDDXL15.9TRE**Manufacturer Family Name: **8V-S2000**

Engine Code	Engine Model	BHP@RPM (SAE Gross)	Fuel Rate:	Fuel Rate:	Torque @ RPM (SEA Gross)	Fuel Rate:	Fuel Rate:	Emission Control Device Per SAE J1930
			mm/stroke @ peak HP <small>(for diesel only)</small>	(lbs/hr) @ peak HP <small>(for diesels only)</small>		mm/stroke@peak torque	(lbs/hr)@peak torque	
1A21	8V-S2000 (JWCC)	575 @ 2100	215.5	200.7	1871 @ 1350	275.0	164.6	ECM, TC, CAC
1A18	8V-S2000 (JWCC)	575 @ 1800	240.5	191.9	1871 @ 1350	275.0	164.6	ECM, TC, CAC
1B21	8V-S2000 (JWCC)	525 @ 2100	199.8	186.0	1708 @ 1350	253.0	151.4	ECM, TC, CAC
1B18	8V-S2000 (JWCC)	525 @ 1800	222.0	177.2	1708 @ 1350	253.0	151.4	ECM, TC, CAC
GS1	8V-S2000 (JWCC)	610 @ 1800	256.9	205.0	NA	NA	NA	ECM, TC, CAC
GS1-TL	8V-S2000 (JWCC)	550 @ 1800	232.3	185.4	NA	NA	NA	ECM, TC, CAC

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Engine Code	Engine Model	BHP@RPM (SAE Gross)	Fuel Rate:	Fuel Rate:	Torque @ RPM (SEA Gross)	Fuel Rate:	Fuel Rate:	Emission Control Device Per SAE J1930
			mm/stroke @ peak HP (for diesel only)	(lbs/hr) @ peak HP (for diesels only)		mm/stroke@peak torque	(lbs/hr)@peak torque	
1E21	8V-S2000 (SCCC)	650 @ 2100	247.0	230.0	2076 @ 1350	293.8	175.9	ECM, TC, CAC
1E18	8V-S2000 (SCCC)	650 @ 1800	272.5	217.5	2076 @ 1350	293.8	175.9	ECM, TC, CAC
1F21	8V-S2000 (SCCC)	605 @ 2100	233.5	208.1	2076 @ 1350	291.5	174.5	ECM, TC, CAC
1F18	8V-S2000 (SCCC)	605 @ 1800	251.0	200.3	2076 @ 1350	291.5	174.5	ECM, TC, CAC
GS2	8V-S2000 (SCCC)	685 @ 1800	291.5	232.6	NA	NA	NA	ECM, TC, CAC
GS2-TL	8V-S2000 (SCCC)	623 @ 1800	260.0	207.5	NA	NA	NA	ECM, TC, CAC

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