

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-103

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines
CATERPILLAR, INC.

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;

IT IS ORDERED AND RESOLVED: That the following Caterpillar, Inc. 2000 model-year engine, with rated power greater than 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Loader, Pump, Excavator and Generator

Fuel Type: Diesel

<u>Engine Family</u>	<u>Liters (Cubic Inches)</u>		<u>Exhaust Emission Control Systems and Special Features</u>
YCPXL69.0ERK	69.0	(4237)	Turbocharger Engine Control Module Charge Air Cooler

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), nitrogen oxides (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 (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 emission certification values, in g/bhp-hr, and the opacity of smoke emission 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>
0.3	0.9	6.2	0.2	9	2	20

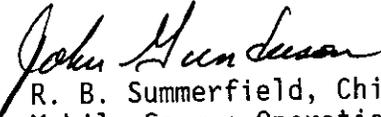
BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

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, Section 2425 et seq.).

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

Executed at El Monte, California this 20 day of October 1999.


R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

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EO: U-R-1-103

Manufacturer: CATERPILLAR INC
Engine category: Nonroad CI
EPA Engine Family: YCPXL69.0ERK
Mfr Family Name: N/A
Process Code: New Submission

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
1 Cert Engine	3516	3230 @ 1800	690	1115.3	9419 @ 1800	N/A	N/A	EM,DI,TC,ECM
2	3516	2300 @ 1750	520	816.8	6897 @ 1300	624	727.9	EM,D,PT,ECM
3	3516	1900 @ 1750	404	634.2	5698 @ 1300	501	584.8	EM,D,PT,ECM
4	3516	1379 @ 1600	328	471.5	4522 @ 1100	403	398.2	EM,D,PT,ECM
5	3516	1653 @ 1750	358	562.8	4959 @ 1300	429	500.6	EM,D,PT,ECM
6	3516	1648 @ 1200	540	581.9	7208 @ 1200	N/A	N/A	EM,D,PT,ECM
7	3516	1855 @ 1200	607	654.1	8111 @ 1200	N/A	N/A	EM,D,PT,ECM
8	3516	2034 @ 1200	670	721.2	8897 @ 1200	N/A	N/A	EM,D,PT,ECM
9	3516	2374 @ 1800	492	794.5	6920 @ 1800	N/A	N/A	EM,D,PT,ECM
10	3516	2628 @ 1800	544	879.1	7663 @ 1800	N/A	N/A	EM,D,PT,ECM
11	3516	2876 @ 1800	602	972.0	8386 @ 1800	N/A	N/A	EM,D,PT,ECM
12	3516	2316 @ 1800	483	780.0	6752 @ 1800	N/A	N/A	EM,D,PT,ECM
13	3516	2534 @ 1800	526	848.8	7389 @ 1800	N/A	N/A	EM,D,PT,ECM
14	3516	1855 @ 1200	603	649.1	8111 @ 1200	N/A	N/A	EM,D,PT,ECM
15	3516	2549 @ 1800	550	888.6	7433 @ 1800	N/A	N/A	EM,D,PT,ECM
16	3516	1855 @ 1200	603	649.1	8111 @ 1200	N/A	N/A	EM,D,PT,EC,ECM CM