

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-1-114
Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

CATERPILLAR, INC.

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

IT IS ORDERED AND RESOLVED: That the following diesel engines and the 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: Generator and Industrial equipment

Engine Power Ratings Range: 175 – 750 horsepower, inclusive

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>	
YCPXL10.5MRD	10.5	644	Smoke Puff Limiter Turbocharger 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/hp-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-values from either mode (Peak) for this engine family are as follows (Title 13, California Code of Regulations, Section 2423):

	<u>Exhaust Emissions (g/hp-h)</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>
Standard	1.0	8.5	6.9	0.4	20	15	50
Certification	0.2	1.4	5.2	0.2	17	3	39

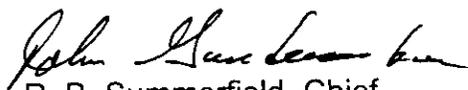
BE IT FURTHER RESOLVED: That the listed engine models comply with "Exhaust Emission Standards and Test Procedures—Heavy-Duty Off-Road Diesel-Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model-year.

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.*).

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

Executed at El Monte, California this 7 day of December 1999.



R. B. Summerfield, Chief
Mobile Source Operations Division

LARGE ENGINE MODEL SUMMARY

EO: U-R-1-116

Manufacturer: **CATERPILLAR INC.** Process Code: **New Submission**

EPA Engine Family: **YCPXL10.5MRD** Manufacturer Family Name: **N/A**

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
Note:	Peak Hp and Peak Torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
1 - Cert Engine	3306	397 @ 1800	243	147.0	1448 @ 1200	337	136.0	EM, DI, TC, SPL,
2	3306	340 @ 1800	197	119.0	1248 @ 1200	239	96.0	EM, DÇAC, SPL,
3	3306	300 @ 2200	154	114.0	1007 @ 1400	195	92.0	EM, DÇAC, SPL,
4	3306	360 @ 2200	181	134.0	1177 @ 1400	225	106.0	EM, DÇAC, SPL,
5	3306	345 @ 2200	174	129.0	1120 @ 1400	214	101.0	EM, DÇAC, SPL,
6	3306	335 @ 2200	170	126.0	1080 @ 1400	206	97.0	EM, DÇAC, SPL,
7	3306	315 @ 2200	160	118.0	1008 @ 1400	191	90.0	EM, DÇAC, SPL,
8	3306	300 @ 2200	146	108.0	874 @ 1400	187	88.0	EM, DÇAC, SPL,
9	3306	370 @ 2000	195	131.0	1244 @ 1400	238	112.0	EM, DÇAC, SPL,
10	3306	355 @ 2000	188	127.0	1184 @ 1400	225	106.0	EM, DÇAC, SPL,
11	3306	335 @ 2000	177	119.0	1100 @ 1400	210	99.0	EM, DÇAC, SPL,
12	3306	325 @ 2000	172	116.0	1058 @ 1400	200	94.0	EM, DÇAC, SPL,
13	3306	305 @ 2000	161	108.0	977 @ 1400	187	88.0	EM, DÇAC, SPL,
14	3306	375 @ 1800	217	131.0	1444 @ 1350	244	111.0	EM, DÇAC, SPL,
15	3306	360 @ 1800	210	127.0	1355 @ 1350	228	104.0	EM, DÇAC, SPL,
16	3306	335 @ 1800	197	119.0	1232 @ 1200	242	98.0	EM, DÇAC, SPL,
17	3306	320 @ 1800	185	112.0	1139 @ 1350	196	89.0	EM, DÇAC, SPL,
18	3306	300 @ 1800	174	105.0	1050 @ 1350	181	82.0	EM, DÇAC, SPL,
19	3306	306 @ 2000	163	109.4	1004 @ 1400	191	89.9	EM, DÇAC, SPL,
20	3306	306 @ 2000	168	113.1	1004 @ 1400	199	93.9	EM, DÇAC, SPL,
21	3306	382 @ 1800	224	136.0	1303 @ 1400	248	117.0	EM, DÇAC, SPL,
22	3306	349 @ 1800	224	136.0	1303 @ 1400	248	117.0	EM, DÇAC, SPL,
23	3306	349 @ 1800	224	136.0	1303 @ 1400	248	117.0	EM, DÇAC, SPL,
24	3306	300 @ 1800	176	107.0	1016 @ 1200	198	80.0	EM, DÇAC, SPL,
25	3306	300 @ 2000	162	109.0	1006 @ 1400	190	90.0	EM, DÇAC, SPL,
26	3306	250 @ 1800	145	88.0	846 @ 1200	166	67.0	EM, DÇAC, SPL, CAC