## 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

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Fuel Type: Diesel

	Disp	placement	Exhaust Emission Control
Engine Family	<u>Liters</u>	<u>Cubic Inches</u>	Systems and Special Features
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>Ex</u> l	<u>naust Em</u>	<u>nissions (</u>	(g/hp <u>-h)</u>		<u>Smo</u>	<u>ke Opacity</u>	<u>v (%)</u>
Standard Certification	<u>THC</u> 1.0 0.2	<u>CO</u> 8.5 1.4	<u>NOx</u> 6.9 5.2	<u>PM</u> 0.4 0.2	<u>Accel</u> 20 17	<u>Lug</u> 15 3	<u>Peak</u> 50 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 modelyear.

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 2 day of December 1999.

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R. B. Summerfield, Chief Mobile Source Operations Division

<u>SUMMARY</u>
<b>NE MODEL</b>
LARGE ENGIN

±0: u-R-1-116

Manufacturer: CATERPILLAR INC.

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Process Code: New Submission

EDA Encine Family:	Miv. VCPXI 10.5MRD	SMRD		Manufacturer Family Name:	Family Name:	N/A		
1.Engine Code	E L	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	8.Fuel Rate: 9.Emission Control (lbs/hr)@peak torque Device Per SAE J1930
Noto: Doot Ho	and Deak Tordile	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	C F T
ole.		307 @ 1800	243	147.0	1448 @ 1200	337	136.0	EM, UI, IC, SPL,
1 - Cert Engine	0000		197	119.0	1248 @ 1200	239	96.0	DCAG.
2	3300	B) (E	101	114.0	1007 @ 1400	195	92.0	EM, DÇ <b>AC</b> , SPL,
e	3306	9)	+C1	0101		225	106.0	EM, DÇAC, SPL,
4	3306	8	181	0.401		214	101.0	EM, DÇAC, SPL,
5	3306	0	1/4	129.0	1120 @ 1400	206	97.0	EM, DÇ <b>AC</b> , SPL,
9	3306	0	0/1	0.021		101	0.08	
7	3306	0	160	118.0	000 @ 1400	187	88.0	
8	3306	0	146	108.0	014 10 1400	038	112.0	
6	3306	370 @ 2000	195	131.0	1244 @ 1400	100	106.0	
, ÷	3306	355 @ 2000	188	127.0	1184 @ 1400	GZZ	100.0	
2 7	3306	335 @ 2000	177	119.0	1100 @ 1400	210	99.0	
= \$	2000	) @	172	116.0	1058 @ 1400	200	94.0	
2 9		365 @ 2000	161	108.0	977 @ 1400	187	88.0	DUAC.
13	3300	9)	217	131.0	1444 @ 1350	244	111.0	
14	3306		117	121.0		228	104.0	EM, DÇ <b>AC</b> , SPL,
15	3306	360 @ 1800	017	0.141	•	242	98.0	EM, DÇAC, SPL,
16	3306	335 @ 1800	19/	13.0	) (	 196	89.0	EM, DCAC, SPL,
17	3306	320 @ 1800	185	112.0	3	181	82.0	EM, DCAC, SPL,
18	3306	300 @ 1800	1/4	0.601	3	191	89.9	EM, DÇAC, SPL,
19	3306	306 @ 2000	163	108.4	) (	199	93.9	EM, DCAC, SPL,
20	3306	9	100	1.0.1	) (	27B	117.0	EM, DCAC, SPL,
21	3306	382 @ 1800	224	136.0	9) (6	042	0.714	C A C C
	3306	349 @ 1800	224	136.0	9	248	0.711	
3 5	3306	349 @ 1800	224	136.0	1303 @ 1400	248	11/.0	
5 5	0000	) (	176	107.0	1016 @ 1200	198	80.0	DRAG.
24	3300	Ð (	163	109.0	1006 @ 1400	190	90.06	
25	3306	9)	201		R46 @ 1200	166	67.0	EM, DÇAC, SPL,
26	3306	250 @ 1800	140	0.00				CAC

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