California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR INC.	EXECUTIVE ORDER A-013-0148 New On-Road Heavy-Duty Engines

Pursuant to the authority vested in the Air Resources Board by Health and Safety Code (HSC) Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order G-45-9; and

Pursuant to the December 15, 1998 Settlement Agreement between the Air Resources Board and the manufacturer, and any modifications thereof to the Settlement Agreement;

IT IS ORDERED AND RESOLVED: That the following engine and emission control systems produced by the manufacturer are certified as described below for use in on-road motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	ENGINE SIZE (liter)	FUEL TYPE	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS
2002	2CPXH0629ERK	9.9	Diesel	Diesel	Heavy-Heavy-Duty

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	ENGINE MODELS / CODES (rated power in horsepower, hp)
DDI, TC, CAC, ECM	See Attachment
ABBREVIATIONS: OC=oxidizing catalyst TWC=three-way catalyst WU (prefix) =warm-up catalyst O2S=oxygen sensor HO2S=heated O2S TBI=throttle body fuel injection MFI=multiport fuel injection SFI=sequentialMFI DDI/IDI=direct /indirect diesel injection TC/SC=turbo/super charger CAC=charge air cooler EGR=exhaust gas recirculation AIR=secondary air injection PAIR=pulsed AIR SP=smoke puff limiter ECM/PCM=engine /powertrain control module EM=engine modification 2 (prefix)=parallel (2) (suffix)=in series	

The following are the exhaust emission standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for this engine family for hydrocarbons (HC) or non-methane hydrocarbons (NMHC), oxides of nitrogen (NOx), or NMHC+NOx, carbon monoxide (CO), particulate matter (PM), and formaldehyde (HCHO) in grams per brake horsepower-hour (g/bhp-hr) under the "Federal Test Procedure" (FTP) (Title 13, California Code of Regulations, (13 CCR) Section 1956.1 (urban bus) or 1956.8 (other than urban bus)), and under the "Euro III Test Procedure" (EURO) in the Settlement Agreement, including a EURO's "Not-to-Exceed" NOx standard: (The emission standards and certification levels for default operations permitted under 13 CCR Section 1956.1 or 1956.8 are in parentheses.)

													EURO'S NOT-TO-EXCEED NOx STD	7.0
* = not applicable	HC		NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
(DIRECT) STD	1.3	1.3	*	*	4.0	6.0	*	*	15.5	15.5	0.10	0.10	*	*
AVERAGE STD	*	*	*	*	*	*	*	*	*	*	*	*	*	*
FEL	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CERT	0.2	0.1	*	*	3.7	4.5	*	*	1.1	0.5	0.08	0.04	*	*

BE IT FURTHER RESOLVED: That certification to the FEL(s) listed above, as applicable, is subject to the following terms, limitations and conditions. The FEL(s) is the emission level declared by the manufacturer and serves in lieu of an emission standard for certification purposes in any averaging, banking, or trading (ABT) programs. It will be used for determining compliance of any engine in this family and compliance with such ABT programs.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with 13 CCR Sections 1965 (emission control labeling), and 2035 et seq. (emission control system warranty).

BE IT FURTHER RESOLVED: That the listed engine models are conditionally certified subject to the following conditions: (1) The Settlement Agreement is in effect; and, (2) The manufacturer is in compliance with all applicable certification requirements of the Settlement Agreement and any modifications thereof.

Engines certified under this Executive Order shall conform to all applicable California emission regulations and all requirements under the Settlement Agreement and any modifications thereof.
The Bureau of Automotive Repair will be notified by copy of this Executive Order.
This Executive Order is not valid for engines produced on or after October 1, 2002.

Executed at El Monte, California on this 20th day of December 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **On-highway HDDE**

EPA Engine Family: **2CPXH0629ERK**

Mfr Family Name: **NA**

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
Note: Peak HP	and Peak Torque	fuel rates are	nominal values.	Due to product-	ion engine avgs.	these fuel rates	may change.	
Cert Eng	C - 10	370 @ 1800	192	116.1	1350 @ 1200	239	96.6	~~EM, DI, TC, ECM,~~
1	C - 10	370 @ 1800	208	126	1350 @ 1200	245	99	~~EM, DI, TC, ECM,~~
2	C - 10	370 @ 1800	208	126	1350 @ 1200	245	99	~~EM, DI, TC, ECM,~~
3	C - 10	350 @ 1800	198	120	1350 @ 1200	238	96	~~EM, DI, TC, ECM,~~
4	C - 10	365 @ 1800	193	117	1350 @ 1200	248	100	~~EM, DI, TC, ECM,~~
5	C - 10	350 @ 1800	183	111	1250 @ 1200	225	91	~~EM, DI, TC, ECM,~~
6	C - 10	335 @ 1800	188	114	1250 @ 1200	225	91	~~EM, DI, TC, ECM,~~
7	C - 10	335 @ 1800	187	113	1250 @ 1200	228	92	~~EM, DI, TC, ECM,~~
8	C - 10	305 @ 1800	172	104	1150 @ 1200	206	83	~~EM, DI, TC, ECM,~~
9	C - 10	320 @ 1800	172	104	1150 @ 1200	208	84	~~EM, DI, TC, ECM,~~
10	C - 10	315 @ 1800	167	101	1050 @ 1200	191	77	~~EM, DI, TC, ECM,~~
11	C - 10	335 @ 1800	188	114	1250 @ 1200	225	91	~~EM, DI, TC, ECM,~~
12	C - 10	350 @ 1800	183	111	1250 @ 1200	225	91	~~EM, DI, TC, ECM,~~

(ECM, TC, CAC DDI)

ATTACHMENT

A-13-148