



Pursuant to the authority vested in the Air Resources Board (ARB) 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 (EO) G-02-003; and

Pursuant to the December 15, 1998 Settlement Agreement (SA) between ARB and the manufacturer, and any modifications thereof to the Settlement Agreement;

**IT IS ORDERED AND RESOLVED:** That the 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 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 (CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas)	STANDARDS & TEST PROCEDURE	INTENDED SERVICE CLASS (L/M/H HDD=light/medium/heavy heavy-duty [HD] diesel; UB=urban bus; HDO=HD Otto)
2003	3CPXH0729EBV	11.9	Diesel	Diesel	HHDD
<b>SPECIAL FEATURES &amp; EMISSION CONTROL SYSTEMS</b>		<b>ENGINE MODELS / CODES (rated power in horsepower, hp)</b>			
DDI, TC, CAC, ECM, OC, SPL		C-12 : See Attachment for Engine Models and Engine Ratings			
<small>GVWR=gross vehicle weight rating TWC/OC=three-way/oxidizing catalyst WU (prefix)=warm-up cat. O2S=oxygen sensor HO2S=heated O2S TBI=throttle body fuel injection MFI=multi port fuel injection SFI=sequentialMFI DDI/DI=direct /indirect diesel injection TC/SC=turbo/super charger CAC=charge air cooler EGR=exhaust gas recirculation AIR=secondary air injection PAIR=pulsed AIR SPL=smoke puff limiter ECM/PCM=engine /powertrain control module EM=engine modification 2 (prefix)=parallel 2 (suffix)=in series HC=hydrocarbon NMHC=non-methane HC NOx=oxides of nitrogen CO=carbon monoxide PM=particulate matter HCHO=formaldehyde g/bhp-hr=grams per brake horsepower-hour</small>					

The following are the exhaust emission standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT), in g/bhp-hr, for this engine family 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 EURO's "Not-to-Exceed" standard(s). "Diesel" CO certification compliance may have been demonstrated pursuant to Code of Federal Regulations, Title 40, Part 86, Subpart A, Section 86.091-23(c)(2)(i) in lieu of testing. (For flexible- and dual-fueled engines, the CERT values in brackets [ ] are those when tested on conventional test fuel. For multi-fueled engines, the STD and CERT values for default operation permitted in 13 CCR Section 1956.1 or 1956.8 are in parentheses.)

* = not applicable	EURO'S NOT-TO-EXCEED STD													
	HC		NMHC		NOx		NMHC+NOx		CO		PM		HCHO	
	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO	FTP	EURO
(DIRECT) STD	*	*	0.5	0.5	*	*	2.5	2.5	15.5	15.5	0.10	0.10	*	*
AVERAGE STD	*	*	*	*	*	*	*	*	*	*	*	*	*	*
FEL	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CERT	*	*	0.02	0.00	*	*	2.9	3.0	0.7	0.1	0.08	0.07	*	*

**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 labels), and 2035 et seq. (emission control warranty).

**BE IT FURTHER RESOLVED:** That the listed engine models are conditionally certified subject to the following conditions: (1) The SA is in effect; (2) The manufacturer is in compliance with all applicable California emission regulations, and all SA's applicable requirements and any modifications thereof; (3) The manufacturer has elected to seek certification of the listed engine models under the SA's provisions in Chapter XIV (Stipulated Penalties and Other Payments) and shall be required to comply with these and any other related provisions, with accrual from the first engine produced under this EO; (4) This EO is void with respect to any engine within this family determined to have a defeat device as that term is defined in the test procedures and SA. Any engine produced under the voided EO remains subject to stipulated penalties under the SA. Such penalties would begin to accrue upon manufacture of the first engine under this EO; (5) This EO expires at midnight on February 28, 2003; (6) Production of any engine within this family under this EO is acceptance of all conditions in this EO; and (7) ARB reserves the right to disapprove certification of this family, or any families using the same or similar auxiliary emission control device (AECD) strategies as this family is employing, based on all available information.

Engines certified under this Executive Order shall conform to all applicable California emission regulations, and all SA's applicable requirements and any modifications thereof.

This Executive Order hereby supersedes Executive Order A-013-0158 dated October 24, 2002.

The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this 31<sup>st</sup> day of December 2002.

*Raphael Sironi*  
Allen Lyons, Chief  
Mobile Source Operations Division

Manufacturer: **CATERPILLAR INC.**  
 Engine category: **On-highway HDDE**  
 EPA Engine Family: **3CPXH0729EBV**  
 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
Cert Eng	C-12	445 @ 1800	258	156.1	1650 @ 1200	320	129.1	OC, SPL, EMDDI, TC, ECM, CAC
1	C-12	405 @ 1800	231	139.8	1550 @ 1200	297	119.7	EMDDI, TC, ECM,
2	C-12	370 @ 1800	216	130.5	1350 @ 1200	261	105.3	EMDDI, TC, ECM,
3	C-12	395 @ 1800	227	137.4	1450 @ 1200	277	111.8	EMDDI, TC, ECM,
4	C-12	425 @ 1800	243	147.2	1450 @ 1200	277	111.8	EMDDI, TC, ECM,
5	C-12	425 @ 1800	243	147.2	1550 @ 1200	297	119.7	EMDDI, TC, ECM,
6	C-12	445 @ 1800	256	155.2	1550 @ 1200	297	119.7	EMDDI, TC, ECM,
7	C-12	445 @ 1800	256	155.2	1650 @ 1200	318	128.2	EMDDI, TC, ECM,
8	C-12	370 @ 1800	216	130.6	1350 @ 1200	261	105.3	EMDDI, TC, ECM,
9	C-12	425 @ 1800	248	149.9	1450 @ 1200	279	112.6	EMDDI, TC, ECM,
10	C-12	395 @ 1800	227	137.6	1450 @ 1200	277	111.8	EMDDI, TC, ECM,
11	C-12	445 @ 1800	256	155.3	1450 @ 1200	297	119.9	EMDDI, TC, ECM,
12	C-12	395 @ 1800	227	137.6	1450 @ 1200	277	111.8	EMDDI, TC, ECM,
13	C-12	445 @ 1800	256	155.3	1650 @ 1200	318	128.2	EMDDI, TC, ECM,
14	C-12	455 @ 1800	259	156.9	1550 @ 1200	296	119.6	EMDDI, TC, ECM,
15	C-12	505 @ 1800	292	177.1	1550 @ 1200	296	119.6	EMDDI, TC, ECM,

ATTACHMENT

A-13-158-1

ECS FOR ALL RATINGS:  
 DDI, TC, CAC, SPL, OC, ECM

