California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR INC.	EXECUTIVE ORDER U-R-001-0416 New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in the Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 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-02-003;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2011	BCPXL27.0HXA	27.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Oxidation Catalyst, Engine Control Module, Exhaust Gas Recirculation	Loader, Pump

The engine models and codes are attached.

The following are the exhaust certification standards (STD), or family emission limit(s) (FEL) as applicable, and certification levels (CERT) for hydrocarbon (HC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
ELSE>560kW	Tier 4 Interim	STD	0.40	3.5	N/A	3.5	0.10	N/A	N/A	N/A
		FEL	N/A	N/A	--	N/A	0.04	N/A	N/A	N/A
		CERT	0.03	3.2	--	0.1	0.02	--	--	--

BE IT FURTHER RESOLVED: That the family emission limit(s) (FEL) is an emission level declared by the manufacturer for use in any averaging, banking and trading program and in lieu of an emission standard for certification. It serves as the applicable emission standard for determining compliance of any engine within this engine family under 13 CCR Sections 2423 and 2427.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty).

BE IT FURTHER RESOLVED: The listed engine models are conditionally certified pending submission of additional test data to verify compliance with useful-life emission standards. The manufacturer has until July 1, 2011, to provide test data to confirm or correct the certification emissions levels on the conditional certification. Failure to resolve concerns by the specified time, shall be cause for the Executive Officer to rescind this conditional certification, in which case all engines covered under this conditional certification would be deemed uncertified pursuant to Health and Safety code Section 43153 and subject to civil penalties pursuant to Health and Safety Code Section 43154.

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

SUPERSEDED

California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR INC.	EXECUTIVE ORDER U-R-001-0416 New Off-Road Compression-Ignition Engines

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed at El Monte, California on this 30 day of November 2010.

Annette Hebert, Chief
Mobile Source Operations Division

SUPERSEDED

ATTACHMENT 1 OF 1

Engine Model Summary Template

e-R-001-0416

11/09/2010

Engine Family	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
BCPXL27.0HXA	Cert Test 1	C27	814@1800	229	276	3212@1200	307	247	EGR, DFI,TC,ECM, OC,CAC
BCPXL27.0HXA	1	C27	814@1800	229	276	3212@1200	307	247	DFI,TC,ECM,
BCPXL27.0HXA	2	C27	814@1800	229	276	2784@1200	268	216	DFI,TC,ECM,
BCPXL27.0HXA	3	C27	763@1800	215	260	3008@1200	290	234	DFI,TC,ECM,
BCPXL27.0HXA	4	C27	763@1800	215	260	2579@1200	250	202	DFI,TC,ECM,

SUPERSEDED