California Environmental Protection Agency AIR RESOURCES BOARD	Cummins Inc.	EXECUTIVE ORDER U-R-002-0199-1 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 engine and emission control system 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)
2003	3CEXL0359ABE	5.9	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Powertrain Control Module	Loader, Tractor, Dozer, Pump, Compressor

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
130 ≤ kW < 225	Tier 2	STD	N/A	N/A	6.6	3.5	0.20	20	15	50
		FEL	N/A	N/A	6.4	N/A	0.15	N/A	N/A	N/A
		CERT	--	--	5.7	0.6	0.10	11	2	23

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).

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

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.

This Executive Order hereby cancels and replaces Executive Order U-R-002-0199 dated December 31, 2002.

Executed at El Monte, California on this 29TH day of May 2003.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

U-R-002-0199-1

Manufacturer: **Cummins Inc.**

Engine category: **Nonroad Over 50 hp**

EPA Engine Family: **3CEXL0359ABE**

Mfr Family Name: **D403**

Process Code: **Running Change**

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
8041;FR90848	QSB5.9-C	240@2500	105	88.5	730@1500	142	71.6	PCM, TC, CAC
8110;FR91103	QSB5.9-C	240@2500	106	88.9	730@1500	142	71.6	PCM, TC, CAC
8040;FR90847	QSB5.9-C	275@2500	119	100.3	730@1500	140	70.6	PCM, TC, CAC
8107;FR90852	QSB6.9-C	215@2200	104	77.2	692@1600	134	68.0	PCM, TC, CAC
8107;FR90854	QSB5.9-C	205@2200	99	73.7	685@1500	133	67.4	PCM, TC, CAC
8169;FR90857	QSB5.9-C	190@2200	93	68.9	658@1500	127	64.3	PCM, TC, CAC
8166;FR90860	QSB5.9-C	180@2200	88	65.6	624@1500	122	61.7	PCM, TC, CAC
8090;FR90856	QSB5.9-C	186@2400	86	68.8	548@1400	109	61.5	PCM, TC, CAC
8119;FR90930	QSB5.9-C	220@2500	97	81.8	670@1500	132	66.8	PCM, TC, CAC
8113;FR90851	QSB5.9-C	215@2500	95	80.3	665@1500	129	65.1	PCM, TC, CAC
8118;FR90853	QSB5.9-C	205@2500	91	76.7	625@1500	123	62.2	PCM, TC, CAC
8112;FR90849	QSB5.9-C	240@2200	117	86.9	652@1600	132	66.9	PCM, TC, CAC
8112;FR90850	QSB5.9-C	230@2200	112	83.0	652@1500	132	66.8	PCM, TC, CAC
8254;FR9900	QSB5.9-C	240@2400	109	88.4	730@1500	142	71.6	PCM, TC, CAC
8384;FR91040	QSB5.9-C	220@2300	102	79.4	660@1500	118	69.9	PCM, TC, CAC
8385;FR90858	QSB5.9-C	192@2300	92	71.1	580@1600	110	66.8	PCM, TC, CAC
8384;FR91040	QSB5.9-C	220@2300	102	79.4	660@1500	118	69.9	PCM,TC,CAC
8385;FR90858	QSB5.9-C	192@2300	92	71.1	580@1500	110	55.8	PCM,TC,CAC