California Environmental Protection Agency AIR RESOURCES BOARD	Cummins Inc.	EXECUTIVE ORDER U-R-002-0144 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-45-9;

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)
2002	2CEXL0661AAC	10.8	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module	Crane, Loaders, 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
225 ≤ KW < 450	Tier 2	STD	N/A	N/A	6.4	3.5	0.20	20	15	50
		FEL	N/A	N/A	6.2	N/A	0.14	N/A	N/A	N/A
		CERT	--	--	5.6	0.8	0.11	11	1	20

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.

Executed at El Monte, California on this 19th day of December 2001.

R. B. Summerfield, Chief
Mobile Source Operations Division

Engine Model ' mmary Form

ATTACHMENT

U-R-002-0144

Manufacturer: Cummins Inc.

Engine category: Nonroad Over 50

EPA Engine Family: 2CEXL0661AAC

Mfr Family Name: C353

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
2829:FR2918	QSM11-C	425@1800	228	138.4	1450@1300	266	116.7	DDI, TC,EC,CAC
2829:FR2952	QSM11-C	400@1800	217	132.0	1400@1400	261	123.0	TC,EC,CAC
2829:FR2947	QSM11-C	390@2100	185	131.2	1264@1400	237	112.0	EC,TC,CAC
2829:FR2929	QSM11-C	400@2100	197	139.3	1400@1400	259	122.5	TC,EC,CAC
2829:FR2925	QSM11-C	375@2000	177	125.1	1400@1400	259	122.5	TC,EC,CAC
2829:FR2922	QSM11-C	360@2100	172	121.7	1350@1400	251	118.7	TC,EC,CAC
2829:FR2921	QSM11-C	400@2100	190	134.4	1400@1400	259	122.5	TC,EC,CAC
2829:FR2912	QSM11-C	400@2100	190	134.4	1400@1400	259	122.5	TC,EC,CAC
2829:FR2850	QSM11-C	360@1800	194	117.9	1260@1400	237	111.7	TC,EC,CAC
2829:FR2849	QSM11-C	385@1800	208	126.3	1400@1400	259	122.5	TC,EC,CAC
2829:FR2840	QSM11-C	350@2000	174	117.3	1380@1400	256	121.0	TC,EC,CAC
2829:FR2839	QSM11-C	350@2100	168	118.6	1310@1400	245	115.6	TC,EC,CAC
2829:FR2837	QSM11-C	375@2000	186	125.1	1400@1400	259	122.5	TC,EC,CAC
2829:FR2836	QSM11-C	375@2100	178	126.4	1400@1400	259	122.5	TC,EC,CAC
2829:FR2835	QSM11-C	400@2000	197	133.1	1400@1400	259	122.5	TC,EC,CAC
2829:FR2834	QSM11-C	400@2100	190	134.4	1400@1400	259	122.5	TC,EC,CAC
2829:FR2323	QSM11-C	375@2100	179	126.4	1400@1400	259	122.5	TC,EC,CAC
2828:FR2926	QSM11-C	330@2100	155	109.9	1235@1400	110	233	TC,EC,CAC
2828:FR2859	QSM11-C	330@2100	155	109.9	1170@1400	222	104.9	TC,EC,CAC
2828:FR2852	QSM11-C	315@1800	167	101.6	1160@1400	221	104.2	TC,EC,CAC
2828:FR2851	QSM11-C	335@1800	179	108.5	1255@1400	236	111.4	TC,EC,CAC
2828:FR2845	QSM11-C	320@2000	156	104.9	1260@1400	237	111.8	TC,EC,CAC
2828:FR2844	QSM11-C	330@2100	155	109.9	1075@1400	206	97.4	TC,EC,CAC
2828:FR2843	QSM11-C	330@2100	155	109.9	1235@1400	233	109.9	TC,EC,CAC
2828:FR2842	QSM11-C	335@2000	163	109.9	1320@1400	246	116.2	TC,EC,CAC
2828:FR2841	QSM11-C	335@2100	158	111.6	1255@1400	236	111.4	TC,EC,CAC
2828:FR2957	QSM11-C	315@2100	150	105.9	1180@1400	104.3	224	TC,EC,CAC