California Environmental Protection Agency AIR RESOURCES BOARD	CUMMINS INC.	EXECUTIVE ORDER U-R-002-0484 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)
2009	9CEXL019.AAD	19.0	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Engine Control Module, Direct Diesel Injection, Turbocharger, Charge Air Cooler	Loader and Dozer

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 < 560	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		FEL	N/A	N/A	3.9	N/A	0.17	N/A	N/A	N/A
		CERT	--	--	3.8	1.8	0.12	15	5	22

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 24 day of November 2008.

Annette Hebert, Chief
Mobile Source Operations Division

ATTACHMENT 19 Lot 1

Engine Model Summary Template

U-R-002-0484

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
9CEXL019.AAD	8533:FR4431	QSK19-C	750@2000	417	281	2200@1500	457	231	DDI,ECM,TC,CAC
9CEXL019.AAD	2754:FR4466	QSK19-C	700@2000	389	263	2200@1500	457	231	DDI,ECM,TC,C
9CEXL019.AAD	2754:FR4468	QSK19-C	700@1800	417	253	2200@1500	457	231	DDI,ECM,TC,C
9CEXL019.AAD	2754:FR4467	QSK19-C	675@1800	407	247	2200@1500	457	231	DDI,ECM,TC,C
9CEXL019.AAD	2755:FR4473	QSK19-C	560@2000	314	212	1755@1500	386	195	DDI,ECM,TC,C
9CEXL019.AAD	2755:FR4472	QSK19-C	525@2000	298	201	1775@1500	391	198	DDI,ECM,TC,C
9CEXL019.AAD	2755:FR4501	QSK19-C	600@2000	334	226	1950@1500	417	211	DDI,ECM,TC,C
9CEXL019.AAD	2757:FR4497	QSK19-C	506@1800	321	195	2032@1300	417	183	DDI,ECM,TC,C
9CEXL019.AAD	2757:FR4498	QSK19-C	506@1800	321	195	2032@1300	417	183	DDI,ECM,TC,C