CALIFORNIA AIR RESOURCES BOARD	**CUMMINS INC.**	**EXECUTIVE ORDER U-R-002-0831** New Off-Road Compression-Ignition Engines

Pursuant to the authority vested in California 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-19-095;

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)
2023	PCEXL04.5AAK	4.5	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Control Module, Periodic Trap Oxidizer, Diesel Oxidation Catalyst, Electronic Direct Injection, Turbocharger, Selective Catalytic Reduction - Urea, Charge Air Cooler, Ammonia Oxidation Catalyst	Crane, Loader, Dozer, Pump, Compressor

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), 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 (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
75 ≤ kW <130	Tier 4 Final	**STD**	0.19	0.40	N/A	5.0	0.02	N/A	N/A	N/A
		CERT	0.05	0.12	--	0.01	0.01	--	--	--

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 on this 6th day of August 2022.

Robin U. Lang

Robin U. Lang, Chief
Emissions Certification and Compliance Division

Attachment: Engine Models **EO #:** U-R-002-0831 **Family:** PCEXL04.5AAK **Attachment Last Revised:** 7/7/2022

Model	Code	Trim	Config	Displacement	Displacement - Units	Peak Power	Peak Power - Units	Peak Power - Speed (rpm)	Peak Power - Fueling	Peak Power - Fuel Units	Peak Torque	Peak Torque - Units	Peak Torque - Speed (rpm)	Peak Torque - Fuel	Peak Torque - Fuel Units	OBD	GHG	Special	Notes
B4.5	OB1			4.5	Liters	173	horsepower	2000	130	mm3/stroke	575	lb-ft	1500	53	lb/hr				
B4.5	OB2			4.5	Liters	173	horsepower	2500	138	mm3/stroke	575	lb-ft	1500	54	lb/hr				
B4.5	OB3			4.5	Liters	162	horsepower	2500	125	mm3/stroke	520	lb-ft	1500	50	lb/hr				
B4.5	OB4			4.5	Liters	130	horsepower	2500	115	mm3/stroke	480	lb-ft	1500	44	lb/hr				
B4.5	OB5			4.5	Liters	173	horsepower	2200	138	mm3/stroke	575	lb-ft	1500	54	lb/hr				
B4.5	OB6			4.5	Liters	165	horsepower	2200	125	mm3/stroke	563	lb-ft	1500	43	lb/hr				
B4.5	OB7			4.5	Liters	154	horsepower	2200	115	mm3/stroke	525	lb-ft	1500	40	lb/hr				
B4.5	OB8			4.5	Liters	133	horsepower	2200	94	mm3/stroke	467	lb-ft	1500	34	lb/hr				
B4.5	OB9			4.5	Liters	121	horsepower	2200	86	mm3/stroke	369	lb-ft	1500	34	lb/hr				
B4.5	OB10			4.5	Liters	173	horsepower	2000	138	mm3/stroke	575	lb-ft	1500	54	lb/hr				
B4.5	OB11			4.5	Liters	165	horsepower	2000	126	mm3/stroke	563	lb-ft	1500	43	lb/hr				
B4.5	OB12			4.5	Liters	154	horsepower	2000	115	mm3/stroke	525	lb-ft	1500	40	lb/hr				