California Environmental Protection Agency **Air Resources Board**	PERKINS ENGINES COMPANY LTD.	**EXECUTIVE ORDER U-R-022-0190** 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)
2014	EPKXL06.6BK1	6.6	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Direct Injection, Turbocharger, Charge Air Cooler, Electronic Control Module, Exhaust Gas Recirculation, Diesel Oxidation Catalyst, Continuous Trap Oxidizer	Cranes, Loaders, Tractor, Dozer, Pump, Compressor, Generator Set

The engine models and codes are attached.

The following are the exhaust certification standards (STD) 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
75 ≤ kW < 130	Interim Tier 4 / ALT NOx	STD	0.19	3.4	N/A	5.0	0.02	N/A	N/A	N/A
		FEL	N/A	N/A	N/A	N/A	0.01	N/A	N/A	N/A
		CERT	0.01	2.4	--	0.1	0.002	--	--	--

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 18th day of December 2013.

Erik White, Chief
Mobile Source Operations Division

Engine Model Summary Template

Attachment 1 of 2

U-R-022-0190
12-11-13

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
EPKXL06.6BK1	Cert Test 1	3774/2200	173@2200	90	65	627@1400	130	60	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	1	3774/2200	173@2200	90	65	627@1400	126	58	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	2	3768/1800	152@1800	91	54	486@1400	96	44	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	3	3770/1800	164@1800	98	58	525@1400	106	49	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	4	3772/1800	160@1800	98	58	572@1350	116	51	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	5	3776/2200	155@2200	82	59	521@1400	100	51	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	6	3778/1800	173@1800	107	63	608@1400	123	57	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	7	3782/1800	146@1800	87	51	535@1350	112	50	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	8	3540/2200	119@2200	64	46	402@1400	88	41	DDI TAA ECM DOC CTOX EGR EPR

Attachment 2 of 2

Engine Model Summary Template

U-R-022-0190
12-11-13

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
EPKXL06.6BK1	9	3546/2200	155@2200	80	58	521@1400	103	48	DDI TAA ECM DOC CTOX EGR EPR
EPKXL06.6BK1	10	3548/2200	174@2200	91	66	608@1400	124	57	DDI TAA ECM DOC CTOX EGR EPR

TAA = TC + CAC