California Environmental Protection Agency AIR RESOURCES BOARD	PERKINS ENGINES COMPANY LTD.	EXECUTIVE ORDER U-R-022-0158 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)
2011	BPKXL04.4NH1	4.4	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Direct Injection, Turbocharger, Electronic Control Module	Cranes, Loaders, Tractor, Dozer, Pump, Compressor, Generator Set, Other Industrial Equipment

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
56 ≤ kW < 75	Tier 3	STD	N/A	N/A	4.7	5.0	0.40	20	15	50
		FEL	--	--	4.6	--	0.32	--	--	--
		CERT	--	--	4.5	2.1	0.30	6	2	11

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 17th day of December 2010.

Annette Hebert, Chief
Mobile Source Operations Division

Attachment 1 of 1

U-R-022-0158

12-3-2010

Engine Model Summary Template

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
BPKXL04.4NH1	1	3337/2200	100@2200	86.4	42.6	321@1400	108.7	33.4	DDI TC ECM
BPKXL04.4NH1	2	2863/1900	100@1900	92.3	38.4	310@1400	104.1	31.9	DDI TC ECM
BPKXL04.4NH1	3	2861/1900	91.9@1900	85.9	35.8	274@1400	93.3	28.6	DDI TC ECM
BPKXL04.4NH1	4	2859/1900	81@1900	74.9	31.2	241@1400	81.2	24.9	DDI TC ECM
BPKXL04.4NH1	5	2867/1900	100@1900	92.3	38.4	310@1400	104.1	31.9	DDI TC ECM
BPKXL04.4NH1	6	2865/1900	81@1900	74.9	31.2	241@1400	81.2	24.9	DDI TC ECM
BPKXL04.4NH1	7	3030/2200	100@2200	84.7	40.8	310@1400	102.3	31.4	DDI TC ECM
BPKXL04.4NH1	8	2892/2200	100@2200	84.7	40.8	310@1400	102.3	31.4	DDI TC ECM
BPKXL04.4NH1	9	3010/2200	93.7@2200	80.3	38.7	294@1400	97.7	30.0	DDI TC ECM
BPKXL04.4NH1	10	2904/2200	91.2@2200	80.3	38.7	291@1400	97.7	30.0	DDI TC ECM
BPKXL04.4NH1	11	3008/2200	85@2200	73.1	35.3	268@1400	90	27.6	DDI TC ECM
BPKXL04.4NH1	12	2902/2200	82.5@2200	73.1	35.3	266@1400	90	27.6	DDI TC ECM
BPKXL04.4NH1	13	3204/2200	100@2200	84.7	40.8	310@1400	102.3	31.4	DDI TC ECM
BPKXL04.4NH1	14	3202/2200	93.7@2200	80.3	38.7	294@1400	97.7	30.0	DDI TC ECM
BPKXL04.4NH1	15	3468/1800	97.6@1800	100	29.5	285@1800	100	29.5	DDI TC ECM
BPKXL04.4NH1	16	3504/2400	99.8@2400	80.1	42.1	310@1400	103.2	31.7	DDI TC ECM
BPKXL04.4NH1	17	3507/2300	91.1@2300	78.2	39.4	291@1400	97.7	30.0	DDI TC ECM
BPKXL04.4NH1	18	3597/2400	97.1@2400	80.1	42.1	307@1400	103.2	31.7	DDI TC ECM