California Environmental Protection Agency AIR RESOURCES BOARD	PERKINS ENGINES COMPANY LTD.	EXECUTIVE ORDER U-R-022-0096 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)
2007	7PKXL04.4RG1	4.4	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection	Crane, Loaders, Tractor, Dozer, Other Industrial Equipment

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
56 ≤ kW < 75	Tier 2	STD	N/A	N/A	7.5	5.0	0.40	20	15	50
		CERT	--	--	6.6	0.8	0.29	7	3	10
		FEL	--	--	7.3	-	0.40	-	-	-

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 21st day of December 2006.

Raphael Susnowitz
for Annette Hebert, Chief
Mobile Source Operations Division

Engine Model Summary Template

U-R-022-00 18
Attachment 1 of 1

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
7PKXL04.4RG1	1	2359/2100	99.9 @ 2100	83.5	38.7	306.0 lbf ft @	94.5	29.2	TC DDI
7PKXL04.4RG1	2	2359/2200	99.2 @ 2200	82.0	39.8	306.0 lbf ft @	94.5	29.2	TC DDI
7PKXL04.4RG1	3	2164/2200	91.9 @ 2200	73.0	35.5	286.0 lbf ft @	85.0	26.3	TC DDI
7PKXL04.4RG1	4	2165/2200	89.8 @ 2200	73.0	35.5	280.0 lbf ft @	85.0	26.3	TC DDI
7PKXL04.4RG1	5	2166/2000	98.6 @ 2000	83.0	36.7	304.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	6	2166/2100	99.9 @ 2100	81.5	37.8	304.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	7	2166/2200	99.9 @ 2200	80.0	38.9	304.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	8	2166/2300	99.9 @ 2300	78.5	39.9	304.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	9	2167/2000	96.6 @ 2000	83.0	36.7	298.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	10	2167/2100	97.9 @ 2100	81.5	37.8	298.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	11	2167/2200	97.2 @ 2200	80.0	38.9	298.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	12	2167/2300	97.2 @ 2300	78.5	39.9	298.0 lbf ft @	92.5	28.6	TC DDI
7PKXL04.4RG1	13	2168/2200	99.9 @ 2200	76.0	36.9	274.0 lbf ft @	82.0	25.4	TC DDI
7PKXL04.4RG1	14	2168/2300	99.9 @ 2300	75.0	38.1	274.0 lbf ft @	82.0	25.4	TC DDI
7PKXL04.4RG1	15	2168/2400	99.9 @ 2400	74.0	39.2	274.0 lbf ft @	82.0	25.4	TC DDI
7PKXL04.4RG1	16	2169/2200	97.2 @ 2200	76.0	36.9	268.5 lbf ft @	82.0	25.4	TC DDI
7PKXL04.4RG1	17	2169/2400	97.2 @ 2400	74.0	39.2	268.5 lbf ft @	82.0	25.4	TC DDI
7PKXL04.4RG1	18	2162/2200	83.1 @ 2200	66.0	31.8	260.0 lbf ft @	77.7	23.6	TC DDI
7PKXL04.4RG1	19	2163/2200	74 @ 2200	81.0	31.8	254.0 lbf ft @	77.7	23.6	TC DDI
7PKXL04.4RG1	20	2442/1800	94.5 @ 1800	92.0	36.8				TC DDI
7PKXL04.4RG1	21	2890/2200	91.9@ 2200	66	31.9	291.0 lbf ft @	85	25.2	TC DDI
7PKXL04.4RG1	22	2444/1500	74.8@1500	82.5	27.1				
7PKXL04.4RG1	23	2444/1800	85.2@1800	78.0	30.8				