California Environmental Protection Agency AIR RESOURCES BOARD	Komatsu Limited	EXECUTIVE ORDER U-R-005-0141 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)
2003	3KLXL060.AAA	45, 60	Diesel	8000

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

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
KW > 560	Tier 1	STD	1.3	9.2	N/A	11.4	0.54	20	15	50
		CERT	0.2	8.3	--	1.8	0.13	15	5	25

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 14TH day of November 2002.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

ATTACHMENT Pg 1 of 1

U-R-005-0141

Manufacturer: Komatsu Limited

Engine category: Nonroad CI

EPA Engine Family: 3KLXL060.AAA

Mfr Family Name: A593

Process Code: New Submission

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
2850:FR6343	SSDA16V160	2750@1900	552	949	8050@1500	560	756	DI EC,TC,CAC
2850:FR6339	SSDA16V160	2700@1900	536	919	7840@1500	546	737	EC,TC,CAC
2850:FR6430	SSDA16V160	2500@1900	495	845	7257@1500	515	694	EC,TC,CAC
2851:FR6343	SSDA16V160	2750@1900	552	949	8050@1500	560	756	EC,TC,CAC
2851:FR6339	SSDA16V160	2700@1900	536	919	7840@1500	546	737	EC,TC,CAC
2851:FR6340	SSDA16V160	2500@1900	495	845	7257@1500	515	694	EC,TC,CAC
2848:FR6320	SSDA16V160	2500@1900	497	850	7257@1500	506	682	EC,TC,CAC
2848:FR6330	SSDA16V160	2300@1900	462	789	6677@1500	468	631	EC,TC,CAC
2848:FR6379	SSDA16V160	1875@1800	398	645	6169@1500	436	588	EC,TC,CAC
2848:FR6284	SSDA16V160	1782@1900	364	622	6274@1500	429	579	EC,TC,CAC
2855:FR6284	SSDA16V160	1782@1900	364	622	6274@1500	429	579	EC,TC,CAC
2849:FR6320	SSDA16V160	2500@1900	497	850	7257@1500	506	682	EC,TC,CAC
2849:FR6330	SSDA16V160	2300@1900	462	789	6677@1500	468	631	EC,TC,CAC
2849:FR6379	SSDA16V160	1875@1800	398	645	6169@1500	436	588	EC,TC,CAC
2469:FR6288	SDA12V160	1487@1900	398	510	5042@1300	464	407	EC,TC,CAC
2853:FR6268	SDA12V160	1487@1900	398	510	5042@1300	464	407	DI EC,TC,CAC