California Environmental Protection Agency AIR RESOURCES BOARD	KUBOTA CORPORATION	EXECUTIVE ORDER U-R-025-0196 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)
2005	5KBXL02.2FCD	1.647, 2.197	Diesel	5000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Indirect Diesel Injection	Loader, Compressor, 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
19 ≤ kW < 37	Tier 2	STD	N/A	N/A	7.5	5.5	0.60	20	15	50
		CERT	--	--	5.5	1.3	0.30	4	5	8

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 28TH day of October 2004.

Allen Lyons, Chief
Mobile Source Operations Division

[redacted]

Engine Model Summary Template

Attachment 1 of 1
4-R-025-0196

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.E Devic
5KBXL02.2FCD	D1703-ES01	D1703-ES	36.5@2800	33.3	15.6	81.8@1700	38.0	10.8	IDI
5KBXL02.2FCD	D1703-ES02	D1703-ES	34.5@2700	31.9	14.4	81.8@1500	37.9	9.5	
5KBXL02.2FCD	D1703-ES03	D1703-ES	31.9@2400	32.2	13.0	78.2@1550	35.6	9.3	
5KBXL02.2FCD	D1703-ES04	D1703-ES	29.4@2200	32.0	11.8	79.1@1600	36.0	9.7	
5KBXL02.2FCD	D1703-M-ES01	D1703-M-ES	36.5@2800	33.3	15.6	82.9@1600	38.5	10.3	
5KBXL02.2FCD	D1703-M-ES02	D1703-M-ES	36.7@2800	33.0	15.5	82.4@1700	37.9	10.8	
5KBXL02.2FCD	D1703-M-ES03	D1703-M-ES	34.7@2700	32.3	14.6	81.9@1500	37.7	9.5	
5KBXL02.2FCD	D1703-M-ES04	D1703-M-ES	29.4@2200	33.0	12.2	79.1@1600	36.3	9.7	
5KBXL02.2FCD	D1703-M-ES05	D1703-M-ES	32.9@2600	32.2	14.0	77.4@1700	36.1	10.3	
5KBXL02.2FCD	V2203-ES01	V2203-ES	48.4@2800	32.3	20.2	108.1@1700	37.0	14.1	
5KBXL02.2FCD	V2203-ES02	V2203-ES	43.9@2600	30.7	17.8	108.1@1500	37.1	12.4	
5KBXL02.2FCD	V2203-ES03	V2203-ES	42.5@2400	31.9	17.1	105.0@1500	35.6	11.9	
5KBXL02.2FCD	V2203-ES04	V2203-ES	42.5@2400	31.9	17.1	101.9@1700	33.9	12.9	
5KBXL02.2FCD	V2203-ES05	V2203-ES	42.5@2400	31.9	17.1	101.0@1700	33.4	12.7	
5KBXL02.2FCD	V2203-ES06	V2203-ES	41.7@2300	32.6	16.8	105.9@1600	36.1	12.9	
5KBXL02.2FCD	V2203-ES07	V2203-ES	38.9@2200	31.3	15.4	97.9@1600	31.9	11.4	
5KBXL02.2FCD	V2203-ES08	V2203-ES	38.9@2200	31.3	15.4	102.3@1600	34.3	12.3	
5KBXL02.2FCD	V2203-ES09	V2203-ES	37.3@2100	31.4	14.7	101.0@1500	33.4	11.2	
5KBXL02.2FCD	V2203-ES10	V2203-ES	48.4@2800	32.3	20.2	106.4@1600	36.0	12.9	
5KBXL02.2FCD	V2203-ES11	V2203-ES	45.6@2700	31.2	18.8	107.7@1500	37.0	12.4	
5KBXL02.2FCD	V2203-ES12	V2203-ES	43.9@2600	30.7	17.8	103.6@1700	35.0	13.3	
5KBXL02.2FCD	V2203-ES13	V2203-ES	46.9@2650	32.5	19.3	106.4@1700	36.0	13.7	
5KBXL02.2FCD	V2203-ES14	V2203-ES	34.9@2000	30.4	13.6	96.9@1600	32.1	11.5	
5KBXL02.2FCD	V2203-ES15	V2203-ES	44.0@2450	32.3	17.7	104.1@1600	35.2	12.6	
5KBXL02.2FCD	V2203-ES16	V2203-ES	36.9@2200	29.8	14.7	105.5@1500	35.8	12.0	
5KBXL02.2FCD	V2203-ES17	V2203-ES	36.2@1950	33.7	14.7	93.4@1300	32.2	9.4	
5KBXL02.2FCD	V2203-M-ES01	V2203-M-ES	48.8@2800	32.1	20.1	110.0@1700	37.3	14.2	
5KBXL02.2FCD	V2203-M-ES02	V2203-M-ES	38.2@2250	30.0	15.1	106.9@1600	36.4	13.0	

2 of 2
4-R-025-0196

[redacted]

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.E Devic
5KBXL02.2FCD	V2203-M-ES03	V2203-M-ES	44.3@2600	31.0	18.0	110.5@1500	37.9	12.7	IDI
5KBXL02.2FCD	V2203-M-ES04	V2203-M-ES	46.0@2700	30.9	18.7	110.5@1500	37.9	12.7	
5KBXL02.2FCD	V2203-M-ES05	V2203-M-ES	44.0@2450	32.3	17.7	104.1@1600	35.2	12.6	
5KBXL02.2FCD	V2203-M-ES06	V2203-M-ES	46.9@2650	32.5	19.3	106.4@1700	36.0	13.7	
5KBXL02.2FCD	V2203-M-ES07	V2203-M-ES	43.9@2600	30.7	17.8	108.1@1500	37.1	12.4	
5KBXL02.2FCD	V2203-M-ES08	V2203-M-ES	33.8@1800	34.5	13.9	98.6@1600	34.5	12.3	
5KBXL02.2FCD	V2203-M-ES08	V2203-M-ES	33.8@1800	34.5	13.9	98.6@1600	34.5	12.3	El
5KBXL02.2FCD	V2203-M-ES09	V2203-M-ES	42.5@2400	31.9	17.1	104.5@1600	35.0	12.5	
5KBXL02.2FCD	V2203-M-ES10	V2203-M-ES	48.0@2800	31.6	19.8	108.5@1700	36.8	14.0	
5KBXL02.2FCD	V2203-M-ES11	V2203-M-ES	41.7@2300	32.6	16.8	105.4@1600	35.3	12.6	
5KBXL02.2FCD	V2203-M-ES12	V2203-M-ES	40.2@2250	32.0	16.1	107.2@1700	37.1	14.1	