California Environmental Protection Agency Air Resources Board	KOHLER COMPANY	EXECUTIVE ORDER U-R-060-0035 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-14-012;

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)
2016	GKHXL2.48TCR	1.861, 2.482	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Direct Injection, Turbocharger, Electronic Control Module, Exhaust Gas Recirculation, Diesel Oxidation Catalyst	Crane, Loaders, Tractor, 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
19 ≤ kW < 56	Tier 4 Final	STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		CERT	--	--	3.8	0.1	0.02	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has complied with the more stringent set of standards from the various power categories in conformance with Section 1039.230 (e) of the "California Exhaust Emission Standards and Test Procedures for 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C" adopted October 20, 2005.

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 9 day of October 2015.

Annette Hebert, Chief
Emissions Compliance, Automotive Regulations and Science Division

Attachment 1/1

Engine Model Summary Template

U-R-060-0035
9-30-2015

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
GKHXL2.48TCR	NA	KDI 1903TCR/22	48.3 @	2200	52.0	18.9	165.8 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/22A	51.0 @	2200	53.5	19.4	165.8 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/22B	55.0 @	2200	59.0	21.4	162.1 @ 1500	68.0	16.8	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/25	48.3 @	2500	48.0	19.8	165.8 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/25A	55.0 @	2500	53.5	22.1	165.8 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/26	48.3 @	2600	47.0	20.2	165.8 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/26A	40.2 @	2600	48.0	20.6	132.7 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/26B	56.3 @	2600	54.0	23.2	165.8 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/G18	40.2 @	1800	51.0	15.2	141.5 @ 1350	60.0	13.4	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/G18A	32.2 @	1800	41.0	12.2	93.6 @ 1800	41.0	12.2	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/G18B	44.3 @	1800	55.0	16.3	126.8 @ 1800	55.0	16.3	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/G18C	49.6 @	1800	63.0	18.7	144.5 @ 1800	63.0	18.7	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 1903TCR/G275	48.3 @	2750	46.0	20.9	165.8 @ 1500	68.5	17.0	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/22	64.4 @	2200	51.0	24.7	221.1 @ 1500	66.5	21.9	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/22A	73.8 @	2200	54.5	26.4	221.1 @ 1500	66.5	21.9	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/23	73.8 @	2300	56.5	28.6	221.1 @ 1500	66.5	21.9	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/25	61.7 @	2500	46.0	25.3	206.4 @ 1500	62.5	20.6	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/25A	73.8 @	2500	54.0	29.7	221.1 @ 1500	66.5	21.9	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/26	61.7 @	2600	44.0	25.2	206.4 @ 1500	62.5	20.6	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/26A	73.8 @	2600	52.5	30.0	221.1 @ 1500	66.5	21.9	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/G18	59.0 @	1800	54.0	21.4	171.7 @ 1800	54.0	21.4	DDI, ECM, DOC, EGR, TC
GKHXL2.48TCR	NA	KDI 2504TCR/G18A	63.0 @	1800	58.0	23.0	184.3 @ 1800	58.0	23.0	DDI, ECM, DOC, EGR, TC