California Environmental Protection Agency AIR RESOURCES BOARD	CATERPILLAR INC.	EXECUTIVE ORDER U-R-001-0375 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)
2010	ACPXL15.2ESX	15.2	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Direct Diesel Injection, Turbocharger, Charge Air Cooler, Engine Control Module	Loader, Tractor, Generator and 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
225 ≤ kW < 450	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	20	15	50
		FEL	N/A	N/A	N/A	N/A	0.18	N/A	N/A	N/A
		CERT	--	--	3.7	3.0	0.14	11	6	15

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 29th day of May 2009.

J. Lourenco

Annette Hebert, Chief
Mobile Source Operations Division

ATTACHMENT 1 OF 2 **Engine Model Summary Template** U-R-001-0375

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
ACPXL15.2ESX	Cert Test	C15	713@1800	401	242.7	NA	NA	NA	ECM, EM. DI. TC, CAC
ACPXL15.2ESX	1	C15	713@1800	397	240	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	2	C15	713@1800	397	240	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	3	C15	569@1800	332	201	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	4	C15	569@1800	332	201	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	5	C15	642@1800	373	226	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	6	C15	642@1800	363	171	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	7	C15	642@1800	365	220.7	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	8	C15	642@1800	365	220.7	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	9	C15	503@1500	344	173.6	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	10	C15	503@1500	344	173.6	NA	NA	NA	EM. DI. TC,
ACPXL15.2ESX	11	C15	433@1800	246	148.8	1516@1400	316	148.7	EM. DI. TC,
ACPXL15.2ESX	12	C15	447@1800	261	157.8	1305@1350	269	122	EM. DI. TC,
ACPXL15.2ESX	13	C15	430@1900	240	153.5	1322@1425	272	130.1	EM. DI. TC,
ACPXL15.2ESX	14	C15	457@1700	273	155.9	1779@1200	360	145.4	EM. DI. TC,
ACPXL15.2ESX	15	C15	469@1800	269	162.6	1779@1200	356	143.6	EM. DI. TC,
ACPXL15.2ESX	16	C15	436@1700	255	145.8	1692@1200	344	138.9	EM. DI. TC,
ACPXL15.2ESX	17	C15	413@1700	244	139.4	1606@1200	324	130.8	EM. DI. TC,
ACPXL15.2ESX	18	C15	540@2000	288	193.8	1736@1400	351	165.5	EM. DI. TC,
ACPXL15.2ESX	19	C15	401@1800	235	142	1387@1250	286	120.1	EM. DI. TC,
ACPXL15.2ESX	20	C15	375@1800	219	132.4	1354@1250	278	116.9	EM. DI. TC,
ACPXL15.2ESX	21	C15	409@1800	240	145.4	1561@1200	319	129	EM. DI. TC,
ACPXL15.2ESX	22	C15	500@1900	292	187	1743@1300	357	156	EM. DI. TC,
ACPXL15.2ESX	23	C15	460@1800	279	169	1537@1300	325	142	EM. DI. TC,
ACPXL15.2ESX	24	C15	511@1800	310	188	1711@1300	358	156	EM. DI. TC,
ACPXL15.2ESX	25	C15	436@1900	245	156	1538@1425	315	151	EM. DI. TC,
ACPXL15.2ESX	26	C15	436@1900	246	157	1538@1425	315	151	EM. DI. TC,
ACPXL15.2ESX	27	C15	413@1700	244	139.5	1606@1200	324	130.8	EM. DI. TC,

ATTACHMENT 2 OF 2 **Engine Model Summary Template** LL-R-001-0375

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
ACPXL15.2ESX	28	C15	512@1800	297	180	1631@1350	338	154	ECM EM. DI. TC, CAC
ACPXL15.2ESX	29	C15	433@1800	249	151	1516@1400	312	147	EM. DI. TC,
ACPXL15.2ESX	30	C15	436@1700	255	146	1692@1200	344	139	EM. DI. TC,
ACPXL15.2ESX	31	C15	362@1800	215	130	1283@1200	267	108	EM. DI. TC,
ACPXL15.2ESX	32	C15	469@1800	269	163	1779@1200	356	144	EM, DI, TC,
ACPXL15.2ESX	33	C15	457@1700	281	161	1779@1200	360	145	EM, DI, TC,
ACPXL15.2ESX	Data Set 2	C15	354@1800	202	122	1285@1200	262	106	EM, DI, TC,