

 CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BOARD	CATERPILLAR, INC.	EXECUTIVE ORDER U-R-001-0261 New Off-Road Compression-Ignition Engines
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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 December 15, 1998 Settlement Agreement between the Air Resources Board and the manufacturer, and any modifications thereof to the Settlement Agreement;

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)
2005	5CPXL15.2ESK	15.2	Diesel	8000
SPECIAL FEATURES & EMISSION CONTROL SYSTEMS			TYPICAL EQUIPMENT APPLICATION	
Direct Diesel Injection, Turbocharger, Charge Air Cooler and Engine Control Module			Generator	

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 (NO_x), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NO_x), 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):

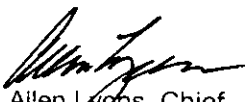
RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			HC	NO _x	NMHC+NO _x	CO	PM	ACCEL	LUG	PEAK
450 ≤ KW < 560	Tier 3	STD	N/A	N/A	4.0	3.5	0.20	N/A	N/A	N/A
		CERT	--	--	3.4	3.4	0.15	--	--	--

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 13TH day of July 2004.


 Allen Lyons, Chief
 Mobile Source Operations Division

Engine Model Summary Form

ATTACHMENT 1 OF 1

U-R-001-0261

Manufacturer: CATERPILLAR INC.
Engine category: Nonroad Over 50 Hp
EPA Engine Family: 5CPXL15.2ESK
Mfr Family Name: NA
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
Note: Peak HP 1 Cert Engine	C15	fuel rates are 717@1800	nominal values. 399	Due to product- ion engine avgs. 241.7	ion engine avgs. NA	these fuel rates NA	may change. NA	EM,DI,TC,ECM,CAC EM,DI,TC,ECM,CAC

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **5CPXL15.2ESK**
 Mfr Family Name:
 Process Code: **Running Change - 13**

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
53	C15	394@1800	231	140	1498@1200	308	124	EM, DI, TC, ECM,

Engine Mode

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **5CPXL15.2ESK**
 Mfr Family Name:
 Process Code: **Running Change-4**

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
27	c15	347@1850	207	128.7	1449@1300	297	130.0	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **5CPXL15.2ESK**
 Mfr Family Name:
 Process Code: **Running Change - 5**

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
28	C15	409@1800	240	145.4	1561@1200	319	129.0	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **5CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 1**

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
2	C15	412@2100	222	156.5	1465@1400	292	137.7	EM,DI,TC,ECM,CA
3	C15	361@2100	194	137.0	1283@1400	259	122.1	EM,DI,TC,ECM,CA
4	C15	347@1850	197	122.8	1449@1300	296	129.4	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **5CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 1**

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
2	C15	412@2100	222	156.5	1465@1400	292	137.7	EM,DI,TC,ECM,CA
3	C15	361@2100	194	137.0	1283@1400	259	122.1	EM,DI,TC,ECM,CA
4	C15	347@1850	197	122.8	1449@1300	296	129.4	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: CATERPILLAR INC.
Engine category: Nonroad Over 50 Hp
EPA Engine Family: 5CPXL15.2ESK
Mfr Family Name:
Process Code: Running Change - 2

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
6	C15	433@1800	246	148.8	1516@1400	316	148.7	EM,DI,TC,ECM,CA
7	C15	447@1800	261	157.8	1305@1350	269	122.0	EM,DI,TC,ECM,CA
8	C15	430@1800	254	153.5	1322@1425	272	130.1	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: CATERPILLAR INC.
Engine category: Nonroad Over 50 Hp
EPA Engine Family: 5CPXL15.2ESK
Mfr Family Name:
Process Code: Running Change - 3

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
5	C15	475@2100	248	175.1	1601@1400	327	154.1	EM,DI,TC,ECM,CA
9	C15	457@1700	273	155.8	1779@1200	360	145.4	EM,DI,TC,ECM,CA
10	C15	469@1800	269	162.6	1779@1200	356	143.6	EM,DI,TC,ECM,CA
11	C15	436@1700	255	145.8	1692@1200	344	138.9	EM,DI,TC,ECM,CA
12	C15	413@1700	244	139.4	1606@1200	324	130.8	EM,DI,TC,ECM,CA
13	C15	540@2000	288	193.8	1736@1400	351	165.5	EM,DI,TC,ECM,CA
14	C15	540@2100	280	198.0	1817@1400	364	171.2	EM,DI,TC,ECM,CA
15	C15	580@2100	309	218.3	1954@1400	389	183.1	EM,DI,TC,ECM,CA
16	C15	595@2100	318	224.3	2005@1400	398	187.3	EM,DI,TC,ECM,CA
17	C15	401@1800	235	142.0	1387@1250	286	120.1	EM,DI,TC,ECM,CA
18	C15	375@1800	219	132.4	1354@1250	278	116.9	EM,DI,TC,ECM,CA
19	C15	401@1900	218	139.0	1438@1200	296	119.4	EM,DI,TC,ECM,CA
20	C15	408@1700	244	139.4	1589@1200	326	131.7	EM,DI,TC,ECM,CA
21	C15	389@1700	232	132.9	1512@1200	311	125.7	EM,DI,TC,ECM,CA
22	C15	369@1700	221	126.4	1435@1200	299	120.6	EM,DI,TC,ECM,CA
23	C15	394@1800	231	139.7	1498@1200	308	124.2	EM,DI,TC,ECM,CA
24	C15	359@1800	210	127.0	1286@1200	266	107.4	EM,DI,TC,ECM,CA
25	C15	354@1800	205	123.8	1285@1200	268	108.2	EM,DI,TC,ECM,CA
26	C15	331@1800	193	117.1	1232@1200	258	104.2	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **5CPXL15.2ESK**
 Mfr Family Name:
 Process Code: **Running Change - 6**

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
29	C15	440@2100	231	162.8	1482@1200	301	141.9	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **5CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 7**

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
30	C15	474@2100	244	172.8	1685@1400	342	161.2	EM,DI,TC,ECM,CA

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **5CPXL15.2ESK**
 Mtr Family Name:
 Process Code: **Running Change - 8**

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
31	C15	530@2100	281	198.2	1850@1400	374	175.9	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**
 Engine category: **Nonroad Over 50 Hp**
 EPA Engine Family: **5CPXL15.2ESK**
 Mir Family Name:
 Process Code: **Running Change - 9**

1.Engine Code	2.Engine Model	3.BHP@RPM (SAE Gross)	4.Fuel Rate: mmi/stroke @ peak HP (for diesel only)	5.Fuel Rate: (lbs/hr) @ peak HP (for diesels only)	6.Torque @ RPM (SEA Gross)	7.Fuel Rate: mmi/stroke@peak torque	8.Fuel Rate: (lbs/hr)@peak torque	9.Emission Control Device Per SAE J1930
32	C15	347@1850	200	124.5	1449@1300	297	129.8	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **5CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 10**

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
33	C15	569@1800	329	199.1	NA	NA	NA	EM, DI, TC, ECM,
34	C15	569@1800	329	199.1	NA	NA	NA	EM, DI, TC, ECM,
35	C15	642@1800	407	171.6	NA	NA	NA	EM, DI, TC, ECM,
36	C15	642@1800	407	171.6	NA	NA	NA	EM, DI, TC, ECM,
37	C15	713@1800	453	213.4	NA	NA	NA	EM, DI, TC, ECM,
38	C15	713@1800	453	213.4	NA	NA	NA	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: CATERPILLAR INC.
Engine category: Nonroad Over 50 Hp
EPA Engine Family: 5CPXL15.2ESK
Mr Family Name:
Process Code: Running Change - 11

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
39	C15	500@1900	292	186.9	1743@1300	357	156.0	EM, DI, TC, ECM,
40	C15	460@1800	279	168.8	1537@1300	325	142.2	EM, DI, TC, ECM,
41	C15	511@1800	310	187.8	1711@1300	358	156.1	EM, DI, TC, ECM,
42	C15	478@1800	280	169.7	1591@1300	322	141.0	EM, DI, TC, ECM,
43	C15	437@1800	258	156.2	1452@1300	295	129.0	EM, DI, TC, ECM,

Engine Model Summary Form

Manufacturer: **CATERPILLAR INC.**

Engine category: **Nonroad Over 50 Hp**

EPA Engine Family: **5CPXL15.2ESK**

Mfr Family Name:

Process Code: **Running Change - 12**

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
44	C15	540@2100	281	198.2	1817@1400	362	170.3	EM, DI, TC, ECM,
45	C15	478@1800	280	169.7	1591@1300	322	141.0	EM, DI, TC, ECM,
46	C15	437@1800	258	156.2	1451@1300	295	129.0	EM, DI, TC, ECM,