California Environmental Protection Agency AIR RESOURCES BOARD	DETROIT DIESEL CORPORATION AND MTU	EXECUTIVE ORDER U-R-007-0102 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)
2005	5DDXL35.8GRP	23.9, 31.8 and 35.8	Diesel	8000

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

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for hydrocarbons (HC), oxides of nitrogen (NOx), or non-methane hydrocarbons 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	N/A	N/A	N/A
		CERT	0.3	7.4	--	1.0	0.08	--	--	--

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 9TH day of December 2004.

Allen Lyons, Chief
Mobile Source Operations Division

Engine Model Summary Form

ATTACHMENT 1 OF 4
EO # U-R-007-0102

Manufacturer: **Detroit Diesel Corporation and MTU**

Engine category: **Nonroad CI**

EPA Engine Family: **5DDXL35.8GRP**

Mfr Family Name:

Process Code: **New Sub - continued**

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
5284 S	18V-2000 A/A	1676 @ 1800	327	587	Constant speed (all ratings)	NA (all ratings)	NA (all ratings)	EC, TAW or TAA (all ratings)
5283 P	|	1394 @ 1800	276	496				DDI, ECM, TC, CAC
5282 C	V	1206 @ 1800	238	427				
5295 S	18V-2000 SCCC	1676 @ 1800	326	585				
5294 P	|	1394 @ 1800	274	492				
5293 C	V	1206 @ 1800	237	426				

S - standby
P - prime
C - continuous

Engine Model Summary Form

ATTACHMENT 2 OF 4
EO# U-R-007-0102

Manufacturer: **Detroit Diesel Corporation and MTU**

Engine category: **Nonroad CI**

EPA Engine Family: **5DDXL35.8GRP**

Mfr Family Name: **SERIES 2000 MDEC**

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
5274 S	12V-2000 A/A	985 @ 1800	285	341	Constant speed (all ratings)	NA (all ratings)	NA (all ratings)	EC, TAW or TAA (all ratings)
5276 P	|	932 @1800	269	322				
5366 P	|	896 @ 1800	270	323				DDI, ECM, TC, CAC
5275 C	|	838 @ 1800	246	295				
5367 C	|	752 @ 1800	230	275				
5368 P	|	1020 @ 1800	294	352				
5277 S	V	1120 @ 1800	323	387				
5285 S	12V-2000 SCCC	985 @ 1800	284	340				
5287 P	|	932 @ 1800	269	322				
5369 P	|	896 @ 1800	270	323				
5286 C	|	838 @ 1800	244	292				
5370 C	|	752 @ 1800	231	277				
5371 P	|	1020 @ 1800	293	351				
5288 S	V	1120 @ 1800	322	385				
5372 S	12V-2000 A/A switchable	838 @ 1500	288	287				
		928 @ 1800	274	328				
	|							
5373 P	|	758 @ 1500	262	261				
	|	831 @ 1800	248	297				
	|							
5374 S	|	912 @ 1500	313	312				
	|	1020 @ 1800	297	356				
	|							
5375 P	|	838 @ 1500	288	287				
	V	928 @ 1800	274	328				

Engine Model Summary Form

Manufacturer: **Detroit Diesel Corporation and MTU**

Engine category: **Nonroad CI**

EPA Engine Family: **5DDXL35.8GRP**

Mfr Family Name: **SERIES 2000 MDEC**

Process Code: **New Sub - continued**

ATTACHMENT 3 OF 4
EO # U-R-007-0102

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
5376 S	12V-2000 SCCC	838 @ 1500	287	286	Constant speed	NA	NA	EC, TAW or TAA
	switchable	928 @ 1800	274	328	(all ratings)	(all ratings)	(all ratings)	(all ratings)
	|							
5377 P	|	758 @ 1500	260	259				DDI, ECM, TC, CAC
	|	831 @ 1800	248	297				
	|							
5378 S	|	912 @ 1500	311	310				
	|	1020 @ 1800	297	356				
	|							
5379 P	|	838 @ 1500	287	286				
	V	928 @ 1800	274	328				
5380 S	16V-2000 A/A	1350 @ 1800	304	485				
5381 P	|	1227 @ 1800	280	447				
5382 C	|	996 @ 1800	231	369				
5281 S	|	1495 @ 1800	329	525				
5383 P	|	1358 @ 1800	304	485				
5279 C	|	1120 @ 1800	252	402				
5278 S	|	1340 @ 1800	297	474				
5280 P	V	1240 @ 1800	276	441				
5384 S	16V-2000 SCCC	1350 @ 1800	302	482				
5385 P	|	1227 @ 1800	278	444				
5386 C	|	996 @ 1800	230	367				
5292 S	|	1495 @ 1800	330	527				
5387 P	|	1358 @ 1800	303	484				
5290 C	|	1120 @ 1800	253	404				
5289 S	|	1340 @ 1800	298	476				
5291 P	|	1240 @ 1800	277	442				
5495 S	V	1200 @ 1800	261	416				

Engine Model Summary Form

Manufacturer: **Detroit Diesel Corporation and MTU**

Engine category: **Nonroad CI**

EPA Engine Family: **5DDXL35.8GRP**

Mfr Family Name:

Process Code: **New Sub - continued**

ATTACHMENT 4 OF 4
EO# U-R-007-0102

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
5388 S	16V-2000 A/A switchable	1080 @ 1500 1226 @ 1800	274 275	364 439	Constant speed (all ratings)	NA (all ratings)	NA (all ratings)	EC, TAW or TAA (all ratings) DDI, ECM, TC, CAC
5389 P		966 @ 1500 1113 @ 1800	245 250	326 399				
5390 S		1200 @ 1500 1350 @ 1800	307 304	408 485				
5391 P		1080 @ 1500 1226 @ 1800	274 275	364 439				
5392 C		878 @ 1500 992 @ 1800	231 225	307 359				
5393 S	16V-2000 SCCC switchable	1080 @ 1500 1226 @ 1800	273 274	363 437				
5394 P		966 @ 1500 1113 @ 1800	243 250	323 399				
5395 S		1200 @ 1500 1350 @ 1800	304 301	404 480				
5396 P		1080 @ 1500 1226 @ 1800	273 274	363 437				
5397 C		878 @ 1500 992 @ 1800	228 224	303 358				