State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER U-R-14-8

Relating to Certification of New Heavy-Duty Off-Road Equipment Engines

AB VOLVO PENTA

Pursuant to the authority vested in the Air Resources Board by Sections 43000.5, 43013 and 43018 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-45-9;

IT IS ORDERED AND RESOLVED: That the following AB Volvo Penta 1997 model-year engine, with rated power between 175 and 750 horsepower, and exhaust emission control systems are certified as described below for use in heavy-duty off-road equipment:

Typical Equipment Usage: Fork Lift, Straddle Carrier, Tug Master

Fuel Type: Diesel

Engine Family	Liters	(Cubic Inches)	Exhaust Emission Control Systems and Special Features
VVP5.5R6DARA (TWD630VE)	5.5	(334)	Turbocharger Smoke Puff Limiter Charge Air Cooler

Engine models and codes are listed on attachments. Production engines shall be in all material respects the same as those for which certification is granted.

The total hydrocarbons (THC), carbon monoxide (CO), nitrogen oxides (NOx), and particulate matter (PM) certification exhaust emission standards, in grams per brake horsepower-hour (g/bhp-hr), and the opacity of smoke emission standards, in percent (%), during acceleration (Accel), lugging (Lug), and peak (Peak) modes, for this engine family are (Title 13, California Code of Regulations, Section 2423):

Exhaust Emissions (g/bhp-hr)				Smoke Opacity (%)		
THC	CO	NOx	PM	Accel	Lug	Peak
1.0	8.5	6.9	0.4	20	15	50

The THC, CO, NOx and PM exhaust emission certification values, in g/bhp-hr, and the opacity of smoke emission certification values, in percent (%), for this engine family are:

Exhaust Emissions (g/bhp-hr)				Smoke Opacity (%)		
THC	CO	NOx	PM	Accel	Lug	Peak
0.4	0.6	5.5	0.2	13	7	22

BE IT FURTHER RESOLVED: That the listed engine models comply with the "Exhaust Emission Standards and Test Procedures--Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2423) for the aforementioned model year.

BE IT FURTHER RESOLVED: That the listed engine models also comply with the "Emission Control Labels--1996 and Later Heavy-Duty Off-Road Diesel Cycle Engines" (Title 13, California Code of Regulations, Section 2424) for the aforementioned model year.

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the materials to demonstrate certification compliance with the Board's emission control system warranty provisions (Title 13, California Code of Regulations, Section 2425 et seq.).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

Executed at El Monte, California this 26th day of February 1997.

R. B. Summerfield, Chief
Mobile Source Operations Division

Page is: satisfactory unsatisfactory Date: ARB Rep		Section, Family and Page **13.00.00.00 VP 3**
Issue Date:	Revision Number and Date: Rev: 1/	**Engine Family Name** **VVP.R6DARA**

E.O .# U-R-14-8

1997 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY OFF-ROAD DIESEL ENGINES

Manufacturer: **AB Volvo Penta**

Engine family: **VVP5.5R6DARA**

Displacement: **5.5/ 334** Liters/Cubic Inches

Engine config: **I-6**

All codes in Engine Fam: CA 49S 50S **XX**

Cert Test Procedures: ARB EPA **XX**

Valves /Ports per Cylinder: **2** Valves/ cylinder

Strokes per Combustion Cycle: **4 - Stroke**

Maximum Rated Power: **188** HP (**140** kW) at **2500** RPM

Ignition: Compression: **XX** Compression with Glow Plug: Spark:

Fuel Type: Dedicated **XX** Diesel **XX**

Diesel Cert Fuel: **40 CFR 89.330 - 96, Federal Spec.**

Primary Service Equipment: **Fork Lifts, Straddle Carriers, Tug Masters**

Exhaust ECS (e.g. MFI, TC, CAC): **SPL, TC, CAC**

Engine Model (Engine Code)	**Rated HP at rpm**	**Fuel Rate at Rated HP mm^3 / stroke**	**Fuel Pump & Injector Part No.**	**ECM/PCM Part No.**	**EGR Valve Part No.**	**PTOX/ Catalytic Converter Part No.**
TWD630VE (I)	188 at 2500	87,0	866 200/ 420 805	N/A	N/A	N/A

Date Issued:

Revisions: