

State of California
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-89

Relating to Certification of New Heavy-Duty Motor Vehicle Engines

CATERPILLAR, INC.

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102 and 43103 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-45-3;

IT IS ORDERED AND RESOLVED: That the following Caterpillar, Inc. 1995 model diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating (GVWR) over 14,000 pounds:

Fuel Type: Compressed Natural Gas (CNG only)

| <u>Engine Family</u> | <u>Liters (Cubic Inches)</u> | | <u>Exhaust Emission Control Systems and Special Features</u> |
|----------------------|------------------------------|-----|--|
| SCP638FZKAEK | 10.5 | 638 | Engine Control Module Turbocharger Charge Air Cooler Oxygen Sensor Three Way Catalytic Converter |

Engine models and codes are listed on attachments.

The following are the certification exhaust emission standards for this engine family in grams per brake-horsepower-hour:

| <u>Non-Methane Hydrocarbons</u> | <u>Carbon Monoxide</u> | <u>Nitrogen Oxides</u> | <u>Particulates</u> |
|---------------------------------|------------------------|------------------------|---------------------|
| 1.2 | 15.5 | 5.0 | 0.07 |

The following are the certification exhaust emission values for this engine family in grams per brake-horsepower-hour:

| <u>Engine Family</u> | <u>Non-Methane Hydrocarbons</u> | <u>Carbon Monoxide</u> | <u>Nitrogen Oxides</u> | <u>Particulates</u> |
|----------------------|---------------------------------|------------------------|------------------------|---------------------|
| SCP638FZKAEK | 0.7 | 6.3 | 0.7 | 0.02 |

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 2035 et seq.).

CATERPILLAR, INC.

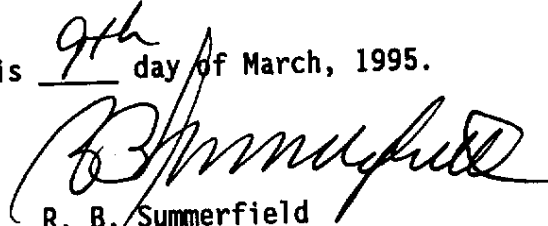
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BE IT FURTHER RESOLVED: That the listed engine family is certified for use in urban buses.

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

The Bureau of Automotive Repair will be notified by copy of this order and attachments.

Executed at El Monte, California this 9th day of March, 1995.



R. B. Summerfield
Assistant Division Chief
Mobile Source Division

1995 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET
HEAVY-DUTY DIESEL-STANDARD ENGINES

| | | | | | | |
|----------------------------------|-----------------------------------|-------------------------------|-----------------|-------------------------------|---------------------------------|--------------------|
| Manufacturer | <u>Caterpillar Inc.</u> | | Engine Family | <u>SCP638FZKAEK</u> | | |
| Displacement | <u>10.5</u> | <u>/</u> | Liters | <u>638</u> | <u>/</u> | Cubic Inches |
| Maximum Rated Power: | <u>250</u> | HP @ | <u>2100</u> | RPM | Engine Configuration: <u>16</u> | |
| Ignition: Compression | <u>Compression with Glow Plug</u> | | | | Spark | <u>X</u> |
| Fuel Type (s): | <u>Dedicated</u> | Flex-Fuel | <u> </u> | Dual-Fuel | <u> </u> | Diesel <u> </u> |
| | | CNG <u>X</u> | LNG <u> </u> | LPG <u> </u> | Other (specify) <u> </u> | |
| Diesel Cert Fuel: | <u>13CCR 2282</u> | 40 CFR 86.1313-90 <u> </u> | | 40 CFR 86.1313-94 <u> </u> | | |
| Primary Intended Service Class: | <u>LHD</u> | <u>MHD</u> | <u>HHD</u> | <u>Urban Bus</u> | <u>X</u> | |
| Exhaust ECS (incl. MFI, TC, CAC) | <u>CAC, TC, ECM,</u> | | <u>TWC, O2S</u> | | | |

(Use abbreviations per SAE J1930 SEP91)

| Engine Model (Eng. Code) | Rated HP @ RPM | Fuel Rate @ Rated HP (ft ³ /min) | Carburetor Part No. | ECM/PCM Part No. | EGR Valve Part No. | PTOX / Catalytic Converter Part No. |
|-----------------------------|-------------------|---|------------------------|---------------------|--------------------------|---|
| G3306 (A) | 250 @ 2100 | 34.5 | 101-6932 | 101-6939 | --- | 108-5436 108-5439 117-8857 (PRE-CAT) |

| | | | | | | | |
|-----------------|-----------|--|--|--|--|--|--|
| ISSUE DATE | 19 DEC 94 | | | | | | |
| REVISION NUMBER | | | | | | | |
| REVISION DATE | | | | | | | |