



## **Connecticut Department of Environmental Protection Fact Sheet on Diesel Fuel for Municipal Officials**

### **New Diesel Requirements**

EPA's Clean Air Highway Diesel Rule, which requires the production and distribution of Ultra-Low Sulfur Diesel (ULSD) fuel and cleaner heavy-duty diesel engines, is being phased in, beginning in the summer of 2006. The federal fuel regulations affect the fuels available for municipal fuel depots and necessitate sound planning. Connecticut's air pollution control regulations require all owners and operators of subject emergency engines to purchase and use fuel that meets the federal standard. Furthermore, the new diesel engines that will be manufactured for the 2007 model year and later will require the use of ULSD to maintain their warranties, so purchasing agents will have to consider the needs of newly purchased diesel vehicles when ordering fuels.

### **ULSD: Key to Clean Air and Maintaining Warranty Coverage**

In 2000, EPA passed the Clean Air Highway Diesel Rule which reduces diesel pollution in two ways: 1) by setting emissions standards for diesel engines beginning with the 2007 model year, and 2) by reducing the sulfur content of diesel fuel beginning in the summer of 2006. The ULSD fuel required by the rule reduces the sulfur content of highway diesel fuel from 500 parts per million (ppm) to 15 ppm.

Reducing the concentration of sulfur in fuel decreases the amount of sulfur oxides produced by a diesel engine. Sulfur oxides contribute to the formation of fine particulate matter, which can aggravate conditions such as asthma and has been linked to premature death from heart or lung disease.

Any diesel engine can operate using ULSD fuel, but the heavy-duty diesel trucks and buses produced for the 2007 model year and later must use ULSD fuel to maintain their warranties. Excess sulfur can ruin the emission control systems on these new engines; it can also destroy retrofit devices installed to reduce emissions on older vehicles.

### **Implications for Municipal Refueling**

While ULSD fuel can be used in any diesel engine, this fuel will be required for some equipment. More details on the specifications for new engines, retrofitted engines, non-road engines and emergency generators are outlined below. The same low sulfur fuel, when used in existing boilers to heat municipal buildings, can achieve additional pollution reductions, improve boiler efficiency, and will also be compatible with advanced control technologies that may be required for boilers in the future.

#### **Bus Retrofits and New Engines**

Communities planning to purchase model year 2007 diesel vehicles or to retrofit school or transit buses may have to provide ULSD fuel for those vehicles and to dedicate some tanks and pumps at

their fuel depots to ULSD fuel. A number of refills of a normally drawn down tank may be necessary to yield a blend with sufficiently low sulfur content to protect new engines without pumping out and cleaning the tanks. ULSD pumps must be clearly labeled to ensure that engines requiring that fuel are not fouled.

#### Construction Equipment and Non-road Engines

Construction and other vehicles that are classified as non-road vehicles have new emission control standards that will be phased in beginning with the 2010 model year. While any non-road diesel vehicle can operate using ULSD, the initial requirement, beginning in 2007, is that fuel sulfur levels for non-road diesel vehicles cannot exceed 500 ppm. The changeover to ULSD for these vehicles will be complete in 2010.

#### Emergency Generator Fuel and Multi-Use Tanks

Connecticut communities purchasing fuel for subject emergency generators after October 15, 2006 are required to procure fuel that has a sulfur content of 15 ppm or less. Because DEP anticipates that diesel fuel tanks dedicated to the support of emergency engines will not be drawn down at normal rates, DEP regulators will determine compliance for those tanks based on purchase records establishing that fuel meeting the federal highway standard has been used to top off the tank as needed. If fuel tanks that support subject emergency generators are also used for other purposes, such as heating oil for boilers, those tanks will also have to be topped off with fuel with a sulfur content of 15 ppm or less.

#### **Purchasing Issues**

During the ULSD phase-in period, between 2006 and 2010, federal rules allow the sale highway diesel fuel with two concentrations of sulfur: 500 ppm and 15 ppm. Refiners and importers must make ULSD available beginning October 15, 2006, but retailers may sell fuel with 500 ppm sulfur until December 1, 2010.

Because the EPA rule covers both engines and fuels, municipal purchasing agents will need to consider vehicle replacement and retrofit programs when ordering fuel. Beginning with the 2007 model year, on-road vehicles with heavy-duty diesel engines will require ULSD fuel to maintain their warranties. If a municipality is replacing heavy-duty diesel vehicles such as trucks, buses, waste collection vehicles, street sweepers or emergency vehicles, ULSD fuel will be required. ULSD may also be necessary for certain types of emission control units that may be included in retrofit projects for school or transit buses.

Although ULSD fuel will be the dominant highway diesel fuel produced, EPA does not require all service stations and truck stops to provide ULSD fuel until 2010 and EPA's rule has no standard for municipal fuel depots. Fuel selection for municipalities will be driven by the requirements of their diesel fleet (new and retrofits) and by the state regulation of their emergency generators. If such emergency generators have dedicated tanks of diesel fuel, purchasing records will have to be kept to establish compliance by showing that the tanks were topped off with fuel that has a sulfur content of 15 ppm or less. Similar compliance records will have to be maintained to document that fuel meeting the federal standard has been used to top off a multi-use tank that serves an emergency generator. Once retailers or municipal fuel depots dedicate their tanks to the 15 ppm ULSD, they will be limited in their ability to revert to the higher sulfur blends due to federal anti-downgrading regulations.

Any questions can be directed to the Engineer of the Day at (860) 424-4152.