

HIGHWAY ULTRA-LOW SULFUR DIESEL RULE



November 16, 2004

80/20 Rule (Temporary Compliance Option)

- A key component of the Highway program is the 80/20 rule -- the “Temporary Compliance Option“. On an annual basis, a refiner or an importer may produce or import up to 20 percent its total highway diesel fuel with a sulfur content of 500 ppm. The remaining 80 percent must meet the 15 ppm standard.
- This temporary rule expires in 2010 -- at which time, all production/imports of highway diesel fuel must the 15 ppm standard.



Impact on Terminals – How many fuels?



- The 80/20 rule is not applicable downstream of the refinery or import facility, but it results in the market having two highway fuels.
- **The burden of the rule rests very heavily with terminals.** Their key question for terminals is:
 - ♦ How many fuels a terminal should carry?
- Supply will be predominately 15 ppm highway fuel;
- Demand will be greater for 500 ppm because of the anticipated price differential.
- Price differential, coupled with available facility infrastructure, will dictate the answer at each terminal.

Impact on Terminals – How many fuels?



- **Accommodating Multiple Products**
 - ◆ Most terminals are limited by their infrastructure. They will find it extremely difficult to accommodate two highway fuels. In evaluating infrastructure availability, terminals must consider:
 - Capacity at the terminal (e.g. tankage, piping, arms at racks);
 - Contamination of the 15 ppm highway by the 500 ppm highway and more likely from other products with higher sulfur content (greater than 500 ppm) also held at the facility; and
 - Cost.

Terminal Options



- **Segregated Systems**
 - ◆ Limited space and capacity.
 - ◆ Would require separate hoses, piping, tanks, and arms at the loading rack.
 - ◆ Capital investment would not be justified because the segregated systems would not be needed after 2010.
 - ◆ Terminals may opt to carry only one highway diesel fuel.
 - ◆ Terminals usually are set up for grades they routinely handle. Difficult to accommodate an occasional batch of 500ppm.

Terminal Options



- **Separate Facilities**

- ♦ Chances of inadvertent contamination are greater at a facility that carries 15 ppm and higher sulfur products (products above 500 ppm).
- ♦ Terminals with several facilities may consider moving the nonroad, locomotive or marine fuels to one location and distributing highway fuel from another.
 - Such an approach may reduce possible contamination, but it may render the terminal selling the higher sulfur products (greater than 500 ppm) inefficient and under-utilized.
 - Demand at such a location may be sporadic because use of such fuels is seasonal and based on weather.

Terminal Options



- **System with one fuel**

- ♦ If a terminal opts for one highway fuel (15 ppm), it will have to take significant measures to minimize contamination and downgrading of product.
- ♦ Terminal will regularly have to flush its system, including hoses and piping;
- ♦ Terminal will have to search routinely for “dead legs,” valves and spots where small volumes of higher sulfur product may collect that can contaminate the 15 ppm fuel and make costly modifications to remove sources of potential contamination.
- ♦ Some may have to have barges washed every time fuel with different sulfur content is carried;
- ♦ All of these processes are very costly.



Further Consideration: 20 Percent Downgrade Rule

- The issue of contamination is further complicated by the Highway rule's 20 percent limitation on downgrading highway diesel fuel.
- Under that provision, a terminal may not downgrade more than 20 percent of its 15 ppm highway fuel to 500 ppm highway fuel. There is no limitation on downgrading to nonroad uses.
- When contaminated highway fuel exceeds the permitted 20 percent, storage and distribution issues arise for this unanticipated volume of nonroad fuel -- tankage availability or possible shipment to another location – if it is even available.

Planning/Testing



- Terminals should already be actively planning how will they allocate equipment and structure operations at each location;
- Terminals should focus on testing -- it will be key to ensuring compliance.
- When cuts are made from a pipeline, there is no obvious way to determine whether the product is not contaminated. Easy identification by color or gravity is not available.
- Testing must increase: when the product enters the terminal, when it flows through the terminal's system.
- No accurate on-site testing device is available today. Terminals will have to send many more samples to testing laboratories.
- Increased testing will be a significant cost factor.
- Testing will delay movement of the product to the rack.
- Terminals should begin lining up testing capability now.
- To ensure on-spec product, terminals will test product received, tanks and product at the rack.

Adjustment Period

- In 1993, when the industry originally converted from one to two diesel fuels, it took approximately one year for industry to adjust and make the systems work properly. A 500 ppm standard gave industry more flexibility than a 15 ppm standard.
- This time the transition will more difficult and complex. There is very little room for error. Accordingly, while industry will be working hard to comply, we hope that EPA will understand that a significant period of adjustment will be needed.

