

Cetane Quantification Protocol

Mobile Source Technical
Subcommittee

December 3, 2003

Six Basic Steps

- Determine baseline NO_x inventory
- Determine baseline cetane number
- Determine cetane number post addition
- Determine gallons additized
- Calculate NO_x reduction potential
- Calculate mass of NO_x reductions

Baseline NOx

- Mobile 6
 - State SIP input files
 - State VMT data
 - Current year
 - Grams per gallon flag or federal fuel economy

Baseline Cetane

- Pipeline shipping data (actual cetane number, tracked batches)
- Direct sampling and testing
 - ASTM sampling procedures
 - Test with ASTM 613 or equivalent

Improved Cetane

- Direct sampling of treated fuel
 - ASTM procedures
- Laboratory Method
 - Add correct amount of cetane to actual fuel
- Test with ASTM 613 or equivalent

Additized Volumes

- Determine gallons treated at treatment rate
 - tank volumes
 - meters
 - pipeline
 - terminals
 - trucks

NO_x Reduction Potential

- Determine percent NO_x reduction
- Use formula from EPA Technical Report
- K-factor
 - from report
 - or
 - based on state/Mobile 6 data

Calculate NOx Reductions

- Grams per gallon
 - Step 1
- Times percent reduction
 - Step 5
- For each batch
- Sum