

Sustainable Liquid Fuels New Product Potential

Vic Turk

R.W. Beckett Corp.

ASTM Burner Fuels Section Chair

Why Ultra Low Sulfur Heating Oil / Biodiesel blend:

- Clean –
 - Deposit reduction
 - Heat exchanger efficiency improvements
- Green –
 - Reduced acid emissions
 - Reduced particulate emissions
 - More sustainable fuel

Deposit Reduction

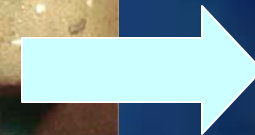
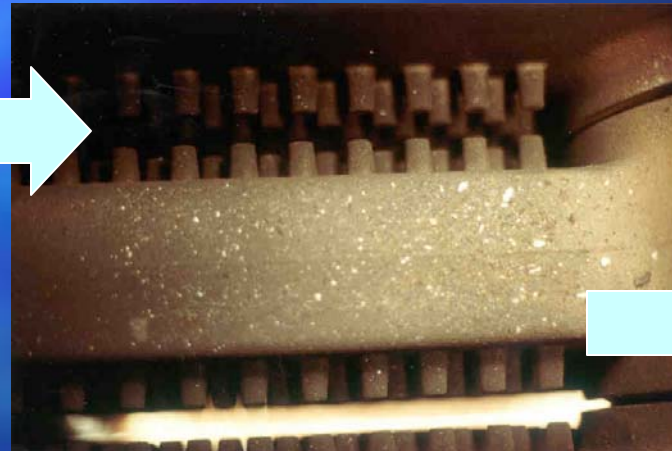
- Significant reduction in required service
- Heat transfer efficiency improvements



3400 ppm S



400 ppm S



ULS
15 ppm

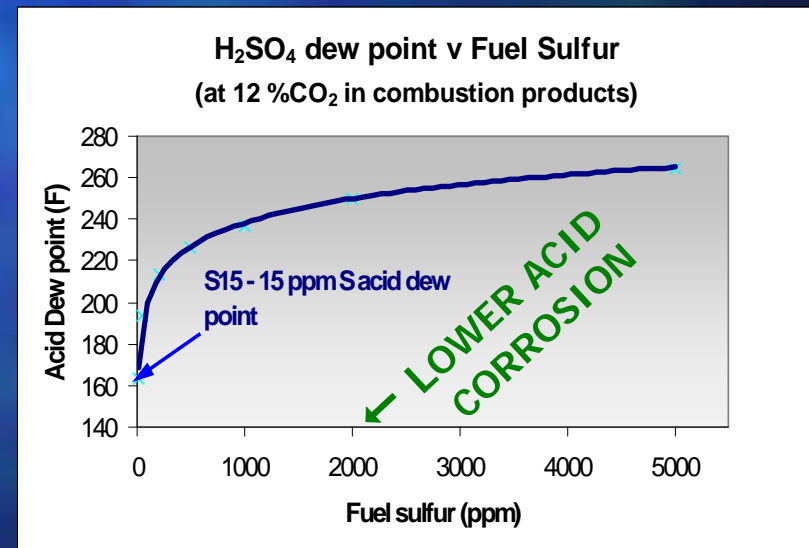
...

- ULS fuels offer even more ...

Heat exchanger efficiency improvements

- Lower acid dew point → less acid, corrosion
 - Compare - lower dew point, lower %RH, drier air
- Major heat exchanger design efficiency improvements
 - 82-88% → 95-98%

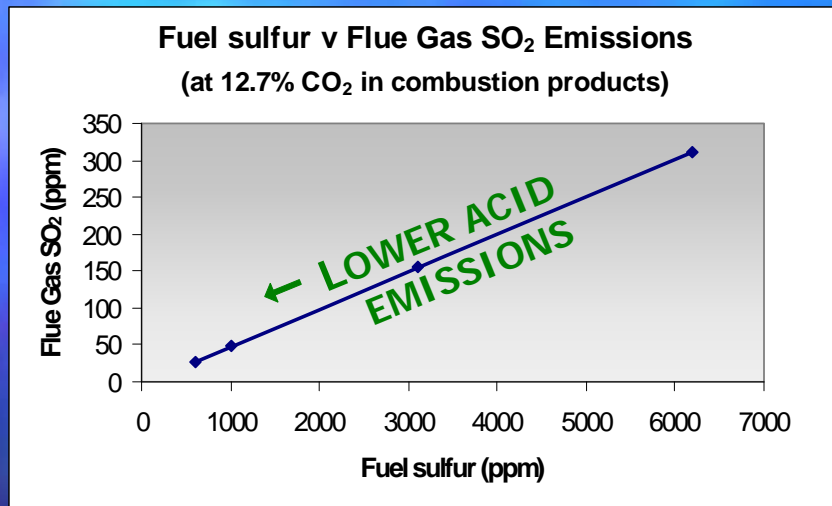
Condensing appliances
now
promising!



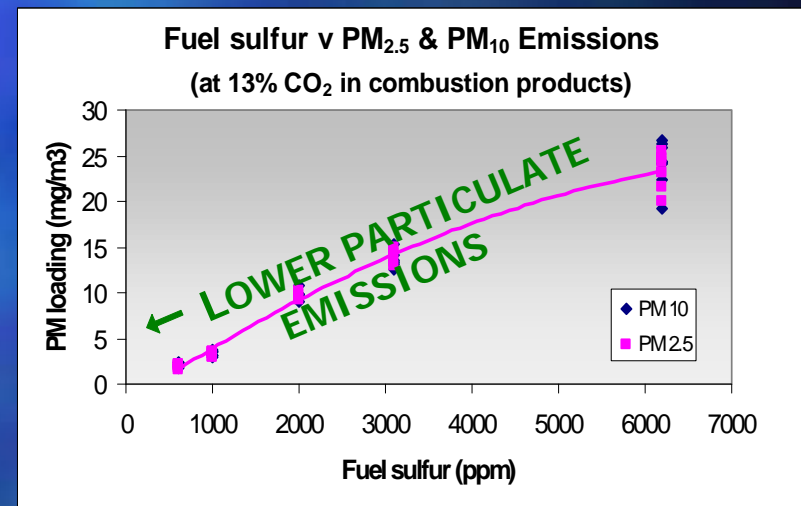
← LOWER SULFUR

Reduced emissions / sustainable

- Reduced acid emissions also means reduced particulates – PM 10, PM 2.5



← LOWER SULFUR



← LOWER SULFUR

- Biodiesel component is Renewable Fuel Standard (RFS2) qualified

Issues to resolve:

- Compatibility – primarily seals
- Handling, stability, storage – tank to fire
- Equipment “Legacy-Safe” level
- Testing protocols
- Standards issues – ASTM, UL, NFPA
- Bioheat[®] Technical Steering Committee actively pursuing