



Innovative Chemistry for Energy Efficiency

*Ability to Measure Ammonia, Acid Gases
and PM*

Hot Topic Hour, October 13, 2011

*From a stack testing company's
perspective*

Learn from our experiences

- Accurate gas flow measurements are critical
 - When, where and how to take measurements
- Follow the method
 - Minimizes bias

Ammonia Testing

- Change filters between test runs
- Collect field train blank
- Obtain audit samples (use in-field or send to lab)
- Keep samples cool in poly bottles
- Continuous NH_3 is available for trending purposes and mapping.

HCl

- Teflon filter holder (precondition)
- Filter media
- Probe/filter temps
- Wrong sampling location
- Recover impingers separately
- Audit samples
- MDL – 0.4ppm

SO₃

- Minimum Detection limit – 0.5ppm
- Change filters
- Condenser Temperatures
- Rinses
- Titration vs. IC
- Turnaround time between results

Expectations with Current Method

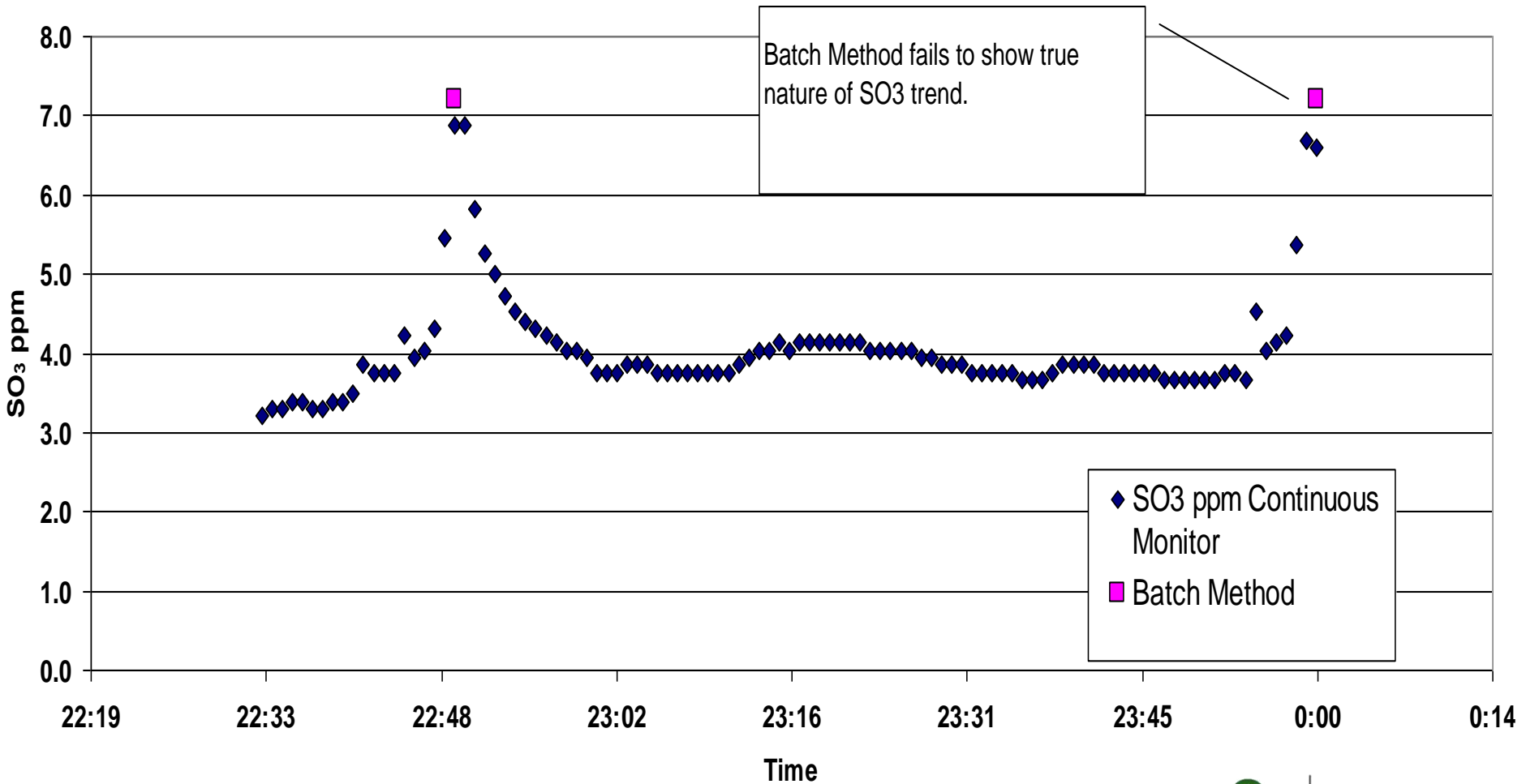
- Single point sampling
- Maximum SO_3 emitted
- Snap shot depiction

Pentol Continuous SO₃ Monitor



SO₃ Trending

Continuous Monitor Vs. Batch Method



PM Back Half Condensables

- Glassware prep critical
- Filter temps monitored on both sides
- Addition of coil condenser
- New filter temps set
- Impinger bucket – wet/dry compartments
- Use all glass (avoid Teflon jumpers)
- Filter media
- N₂ purging procedure critical
- Field blank train

Summary

- If the methods are done by the book the results will be consistent and accurate
- Base decision making on accurate measurements
- Continuous SO_3 and NH_3 monitors are tools for trending and mapping pollutants in the duct