



NACAA Enforcement Webinar  
September 2010  
EPA Air Enforcement Initiatives  
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# EPA Administrator's Budget

- Taking Action on Climate Change
- Cleaning Up Our Communities
- Improving Air Quality
- Expanding the Conversation on Environmentalism and Working for Environmental Justice
- Protecting America's Waters
- Building Strong State and Tribal Partnerships
- Assuring the Safety of Chemicals

# Fiscal Year 2011-2013 National Enforcement Initiatives

- Keeping raw sewage and contaminated stormwater runoff out of our waters
- Cutting animal waste to protect surface and ground waters
- Reducing widespread air pollution from the largest sources, especially the coal-fired utility, cement, glass, and acid sectors
- Cutting toxic air pollution that affects communities' health
- Assuring energy extraction sector compliance with environmental laws
- Reducing pollution from mineral processing operations





# New Source Review Initiative

- National NSR Areas
  - Coal-fired Utilities
  - Acid Manufacturing
  - Glass
  - Cement

# Coal-Fired Utilities





## Coal-Fired Utilities: Current Litigation

- Alabama Power Company
- Cinergy (now Duke Energy Indiana and Duke Energy Ohio)
- Duke Energy Corporation
- Louisiana Generating – Big Cajun 2 (filed February 2009)
- Midwest Generation (filed August 2009)



# Midwest Generation

- Illinois fleet (6 plants, 13 units)
- Motion to Dismiss granted March 9, 2010, as to:
  - liability for alleged modifications of prior owner
  - penalty claims for the one alleged modification performed by Midwest Generation
- U.S. has amended its complaint (June 1, 2010)
  - Names Prior owner (Com Ed)
  - Alleges that MWG is a successor in interest.
- MGW response currently due: Sept 17<sup>th</sup>.





# Duke Wabash River

- On appeal to the Seventh Circuit
- Issues appealed:
  - Statute of Limitations
  - Expert witness testimony
  - Jury instructions/emissions test
- Oral Argument set for September 20<sup>th</sup>.





## Coal-Fired Utilities: Other Litigation

- Otter Tail Citizen Suit (Big Stone)
  - Eighth Circuit ruling upheld Dist Ct.
    - Statute of Limitations and Collateral Attack
    - United States filed amicus brief and participated at oral argument
  
- TVA Citizen Suit (Bull Run)
  - Routine Maintenance Decision (March 2010)
  - On appeal to 6<sup>th</sup> Circuit.



# Coal-Fired Utilities: Results

- 20 Settlements
  - > 2 million tpy of reductions of SO<sub>2</sub> and NO<sub>x</sub> (upon full implementation)
  - > \$11.9 billion – injunctive relief
  - > \$66.9 million – civil penalties
  - > \$259 million – mitigation projects
- Most Recent Settlements
  - AMP and Hoosier

# Acid Manufacturing Sector





# Acid Sector Enforcement

## ■ Notices of Violations- 13

- Agrifos, Pasadena, TX
- Big River Zinc, Sauget, IL (NSPS)
- Chemtrade, Cairo, OH
- DuPont, James River, VA
- DuPont, North Bend, OH
- Dyno Nobel, Donora, PA
- Lucite, Belle, WV
- Marsulex, Toledo, OH
- PCS Nitrogen, Geismar, LA
- PVS Chemical, Chicago, IL (NSPS)
- Royster-Clark, North Bend, OH
- J.R. Simplot, Pocatello, ID
- PCS Nitrogen, Geismar, LA





# Acid Sector - Results to Date

## Six Settlements Covering 25 Acid Plants

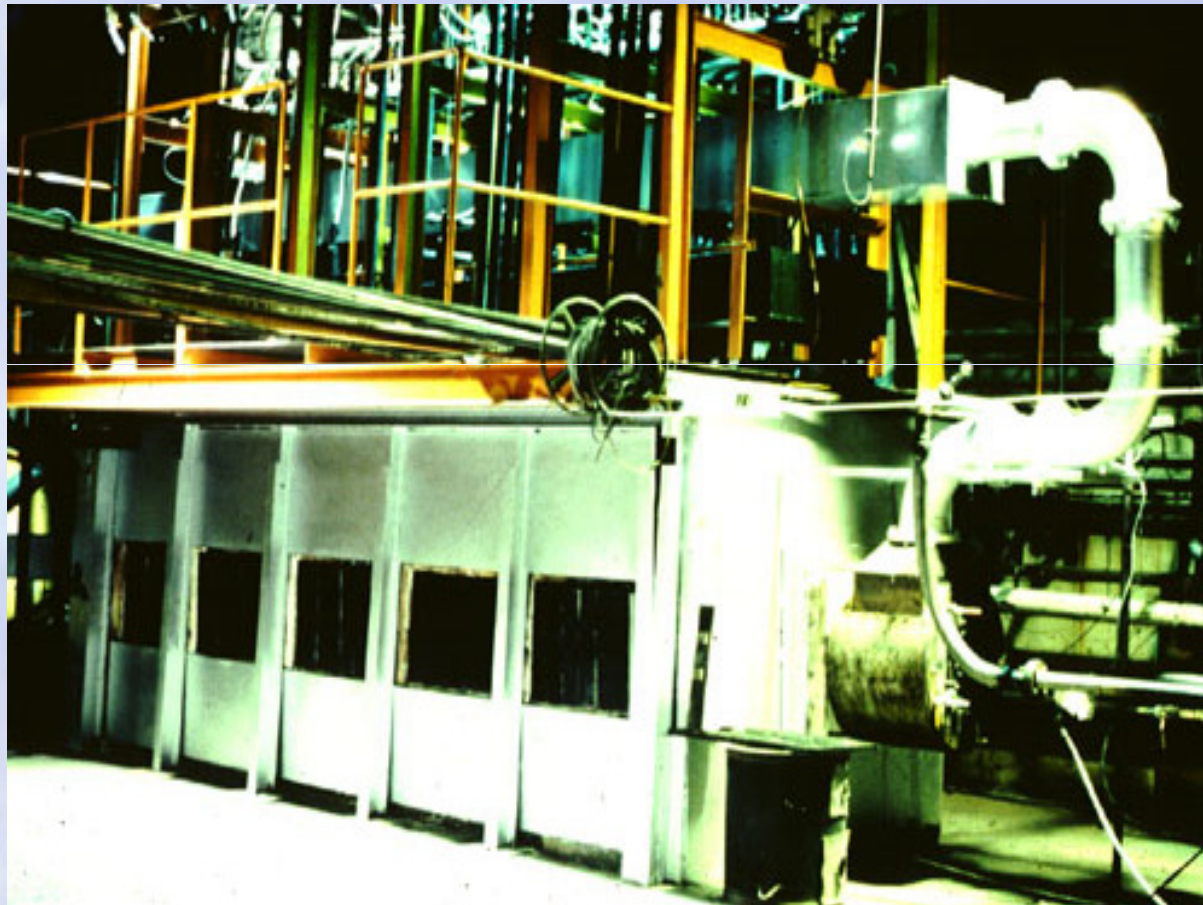
- Agrium/Royster Clark
  - single facility nitric acid settlement (Feb '07)
- Rhodia Inc.
  - eight plant global sulfuric acid settlement (Apr '07)
- DuPont
  - four plant global sulfuric acid settlement (July '07)
- Chemtrade/Marsulex
  - eight plant global sulfuric acid settlement (Jan '09)
- DuPont/Lucite
  - single facility sulfuric acid settlement (April '09)
- Mosaic
  - single facility sulfuric acid settlement (Oct '09)



## Acid Sector - Results to Date (con't)

- Nationwide in 9 States
  - California, Indiana, Kentucky, Louisiana, Ohio, Oklahoma, Texas, Virginia, and Wyoming
- Emission Reduction
  - SO<sub>2</sub> > 44,340 tpy
  - NO<sub>x</sub>, acid mist, VOC, CO and PM > 610 tpy
- Injunctive Relief – “Set the Bar” on Rates
  - Sulfuric acid: 1.0-2.5 lb/ton (from 3.5 lb/ton)
  - Nitric acid: 0.6 lb/ton (down from 3.0 lb/ton)
  - \$224 million in control technologies
- \$11.775 Million Civil Penalties
- \$48,000 in Supplemental Environmental Projects

# Glass Manufacturing Sector







# Glass Sector

- Notices of Violation (8)
  - Saint Gobain Containers Inc., global, (2009)
  - Durand Glass, Millville, NJ (2007)
  - Owens Brockway, Clarion, PA (2008)
  - Owens Brockway, Crenshaw, PA (2008)
  - Owens Brockway, Waco, TX (2009)
  - Owens Brockway, Muskogee, OK (2009)
  - AFG Industries, Church Hill, TN (2008)
  - Saint Gobain, Madera, CA (2003)
- Federal Complaints (2)
  - Saint Gobain, Madera, CA (2005)
  - Saint Gobain, Global (2010)





# Glass Sector - Results to Date

## Case Results

- Saint Gobain; single facility, Madera, CA (Apr 2005)
- Saint Gobain Containers, Inc., global, 15 plants (January 2010)

## Emissions Reductions

- NO<sub>x</sub> reduced by 4,388 tpy
- SO<sub>2</sub> reduced by 1,533 tpy
- PM reduced by 397 tpy



# Saint-Gobain Containers, Inc.

- Global Settlement Covers
  - 15 glass-manufacturing facilities in 13 states
  - 31 total furnaces
- The first SCR at a glass furnace in the U.S.
- All furnaces will install controls for NO<sub>x</sub>, SO<sub>2</sub> and PM emissions
  - NO<sub>x</sub> controls are oxyfuel, SCRs and oxygen-enriched air staging
  - SO<sub>2</sub> controls are scrubbers (dry and wet and also cloud chamber scrubbers)
  - PM controls are electrostatic precipitators and cloud chamber scrubbers
- Injunctive Relief -- \$112 million



## Saint-Gobain Containers, Contd.

All furnaces will accept enforceable emissions limits:

- **NO<sub>x</sub>**: 1.3 pounds per ton of glass produced for furnaces getting top-tier controls, and 3.8 pounds per ton for units getting second-tier controls
- **SO<sub>2</sub>**: approximately 0.8 pounds per ton for top-tier controls; second-tier units will be controlled to approximately 2.25 pounds per ton.
- **PM**: the CD includes limits for both filterable particulates and total particulates



## Saint-Gobain Containers, Contd.

- The settlement will result in the following emissions reductions, once all injunctive relief is fully implemented:
  - NO<sub>x</sub>: 4,162 tons per year (tpy)
  - SO<sub>2</sub>: 1,386 tpy
  - Particulate Matter: 364 tpy
- Saint-Gobain is paying a \$2.25 million civil penalty, with \$1.15 million to the United States and \$1.1 million to the 10 states and two local regulatory agencies that are co-plaintiffs in the case





## Saint-Gobain Containers, Contd.

- Participating States
  - Illinois, Indiana, Louisiana, Commonwealth of Massachusetts, Missouri, North Carolina, Oklahoma, Commonwealth of Pennsylvania, Washington, and Wisconsin, as well as the Puget Sound Clean Air Agency and the San Joaquin Valley Unified Air Pollution Control District



## Saint-Gobain Containers, Contd.

- Saint-Gobain will perform two SEPs as part of the settlement, one federal and one state
  - The federal SEP will require Saint-Gobain to surrender permanently, and request that New Jersey retire, all remaining  $\text{NO}_x$ ,  $\text{SO}_2$  and PM credits at the closed SG glass plant in Millville, New Jersey
  - The state SEP will require Saint-Gobain to pay \$250,000 into a fund established by the Oklahoma Department of Environmental Quality for the purpose of reducing  $\text{NO}_x$  emissions in the Tulsa air shed, which is adjacent to the company's Sapulpa, Oklahoma facility

# Cement Manufacturing Sector





# Cement Sector

## ■ Notices of Violation (12)

- California Portland Cement, Rillito, AZ
- Capitol Cement, San Antonio, TX
- Cemex, Victorville, CA\*
- Cemex, Lyons, CO
- Cemex, Fairborn, OH
- Cemex, Knoxville, TN
- Cemex, Ponce, PR
- Dragon Products, Thomaston ME
- Essroc, Bessemer, PA
- Holcim, Hagerstown, MD
- St. Mary's Cement, Dixon, IL\*
- California Portland Cement, Mojave, CA

## ■ Federal Complaints (2)

- Cemex, Victorville, CA (2007)\*
- Cemex, Lyons, CO (2009)

\* Resolved via consent decree





# Cement Sector - Results to Date

- Three Settlements for 15 Cement Plants
  - St Mary's Cement (Sept '08)
  - CEMEX Victorville California (Jan '09)
  - Lafarge Global (Jan '10)
- Fourteen States
  - CA, AL, MI, GA, IA, IL, KS, SC, OH, NY, WA, MO, OK, PA
- Emissions Reduction
  - NO<sub>x</sub> - 14,490 tons/yr
  - SO<sub>2</sub> - 26,000 tons/yr
- Civil Penalties - \$7.875 million



# Lafarge

## Lafarge Injunctive Relief

- install and implement control technologies at an expected cost of up to \$170 million to reduce emissions of NO<sub>x</sub> by more than 9,000 tons each year and SO<sub>2</sub> by more than 26,000 tons per year at their cement plants.
- In addition, as part of the settlement, Lafarge has agreed to pay a \$5 million civil penalty to resolve alleged violations of the Clean Air Act's new source review regulations.
- Of the \$5 million civil penalty, Lafarge will pay \$3.4 million to the United States and \$1.7 million to the 13 participating states and agencies.



# Lafarge

## Lafarge Injunctive Relief (con't)

- Install and operate a selective catalytic reduction (SCR) system at Joppa Kiln 1;
- Install and operate selective non-catalytic reduction (SNCR) systems to control NO<sub>x</sub> on 17 of their 23 kilns;
- Install and operate wet gas scrubbers (WGS) to control SO<sub>2</sub> at 4 of their 23 kilns;
- Install and operate dry absorbent addition (DAA) systems to control SO<sub>2</sub> at 13 of the 23 kilns; and
- Operate continuous emission monitors (CEMs) on all U.S. operating kilns.



# Lafarge

## Participating States and Agencies

- Alabama, Illinois, Iowa, Kansas, Michigan, Missouri, New York, Ohio, Pennsylvania, South Carolina, Washington, Oklahoma and the Puget Sound Clean Air Agency





# 2008-2010 Air Toxics Initiative

- Focus areas
  - LDAR
  - Flares
  - Surface Coating (HQ recommended Regions disinvest in 2010)
  - Toxics Around Schools (added in 2010)



# 2008-2010 Air Toxics Initiative

## LDAR

- Regions have conducted 80 compliance evaluations at facilities subject to 5 MACT standards (HON, MON, Oil and Gas, Pharmaceutical, Misc Coating Manufacturing)
- For 2008-2009, LDAR cases achieved ~ 309,000 lbs (155 TPY) of HAP emission reductions
- For FY 2010, EPA projects ~ 2000 TPY of HAP emission reductions from LDAR cases
- Approximately 90 LDAR investigations underway



# 2008-2010 Air Toxics Initiative

## Flares

- Regions conducted 54 compliance evaluations at facilities subject to 3 MACT standards (HON, MON, Polymers and Resins)
- In FY 2010, Federal flare cases are expected to lead to ~ 3000 TPY of HAP emission reductions

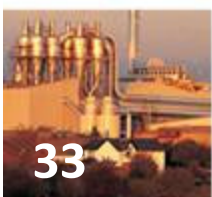


# 2008-2010 Air Toxics Initiative

## Surface Coating

- Regions have conducted ~ 83 compliance evaluations at facilities subject to 4 Surface Coating MACT standards (Misc Metal Parts, Fabric, Plastic Parts, Can)
  - 13 facilities found to be in non-compliance, primarily recordkeeping violations
  - Emissions violations found only in Region 1, ~ 8730 lbs of HAPs
- Majority of regions disinvested in 2010 per HQ recommendation





# 2008-2010 Air Toxics Initiative

## Air Toxics Around Schools Initiative

- Monitoring conducted at 63 schools
  - Over 30,000 data points processed in the last year
  - Analysis of data for all schools underway
  - 1 school (Cupertino, Calif.) will monitor for one year
- Decisions whether additional monitoring is needed will be made when analysis complete
- Enforcement will be conducted where appropriate



# 2008-2010 Air Toxics Initiative

- Schools project has yielded several lessons
  - Focusing solely on schools may miss other toxics problems in the community
  - Improved emission inventories are key to better model predictions for targeting at risk areas
  - Communicating air toxics is complicated and single data points can lead to misinterpretations



# Air Toxics Initiative for 2011-2013

The three focus areas are expected to be:

- LDAR: EPA continues to find widespread noncompliance and significant emission reductions; will continue to focus on compliance evaluations utilizing Method 21
- Flares: Over steaming and combustion of gases with low Btu continue to be a problem; potential for very large emission reductions
- Excess Emissions: EPA monitoring efforts have shown facilities emitting more HAPs than reported; excesses often due to abuse of SSM provisions and poor operation and maintenance

# Air Toxics Initiative for 2011-2013

- Within the three focus areas, emphasis will be on:
  - facilities adversely and disproportionately impacting communities
  - use of fence-line monitoring technologies (i.e., UV-DOAS, PIDs, and FLIR cameras) to target and prioritize facilities and processes







# State/Local Agency Involvement

- LDAR/Flares

- EPA plans to continue to develop State/Local agency capacity in both these areas through training, technical assistance documents, participation in compliance evaluations, and enforcement actions



## State/Local Agency Involvement (continued)

- Excess Emissions
  - Identifying excess emissions can help improve accuracy of State/Local emission inventories
  - Improved data provides an opportunity for State/Local agencies to enhance their budgets through Title V fees based on emissions
  - States/Local agencies may have data bases or other resources to help EPA target facilities with HAP excess emissions



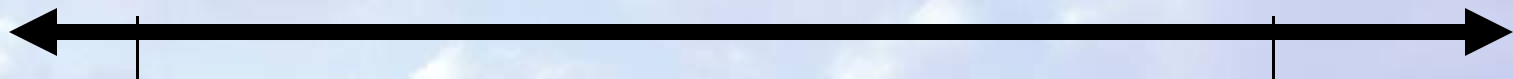
# Lessons Learned Flares

- Parts 60 and 63 (“General Provisions”)
  - Flares that are control devices must combust gases with heat content of  $\leq 300$  Btu; and
  - Meet flare design specifications
  - Good Air Pollution Control Practices
- Flares -- Two major problems:
  - Combustion of gases with low Btu content, and/or
  - Over-steaming
- Causing --
  - Incomplete combustion
  - Significant HAP emissions



# Steam Use

Good Combustion:  
Turbulent, Hot Flame



Insufficient Steam:  
Smoke due to poor mixing-  
Not enough oxygen

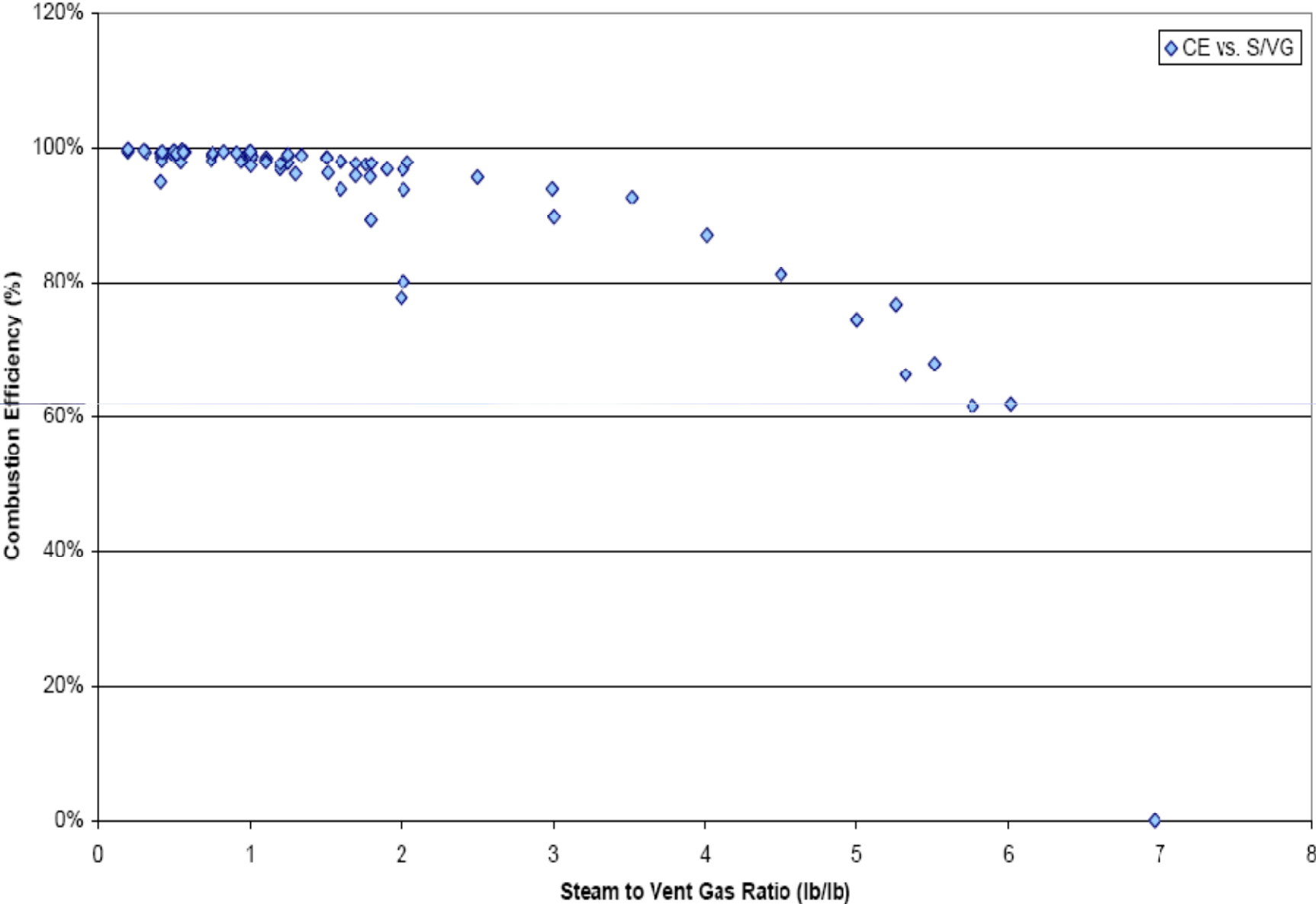
Excess Steam:  
Dilution and  
Cooling of Flame



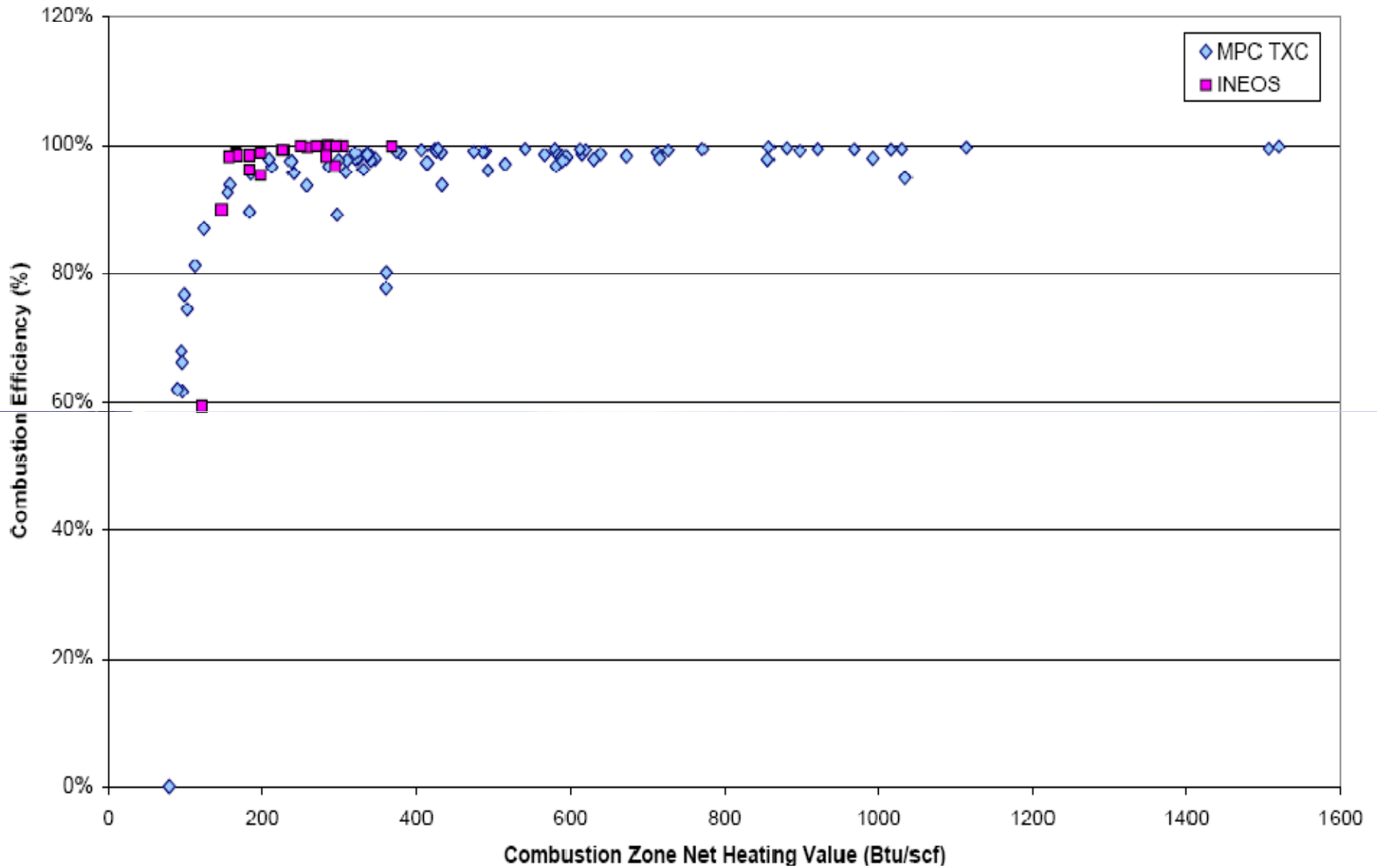
# Rationale for Steam/Vent Gas Multiple

Report Comparing Steam/Vent Gas Ratio to Efficiency	Compound Tested	API 521 Recommended Ratio for the Compounds Tested	Highest Steam/Gas Ratio while Maintaining High Efficiency	Multiple of Recommended Ratio
		Column A	Column B	Column B/A
Mellqvist	Ethylene	0.45	2	4.4
1983 CMA/EPA	Propylene	0.55	3.5	6.4
Castineira	Methane	0.1	0.47	4.7
Pohl	Propane	0.275	1	3.7
Marathon Tests	Various	0.3 - 0.56	1 - 2	2 to 4

Marathon Petroleum Company - Texas City Main Flare  
Combustion Efficiency vs. Steam to Vent Gas Ratio

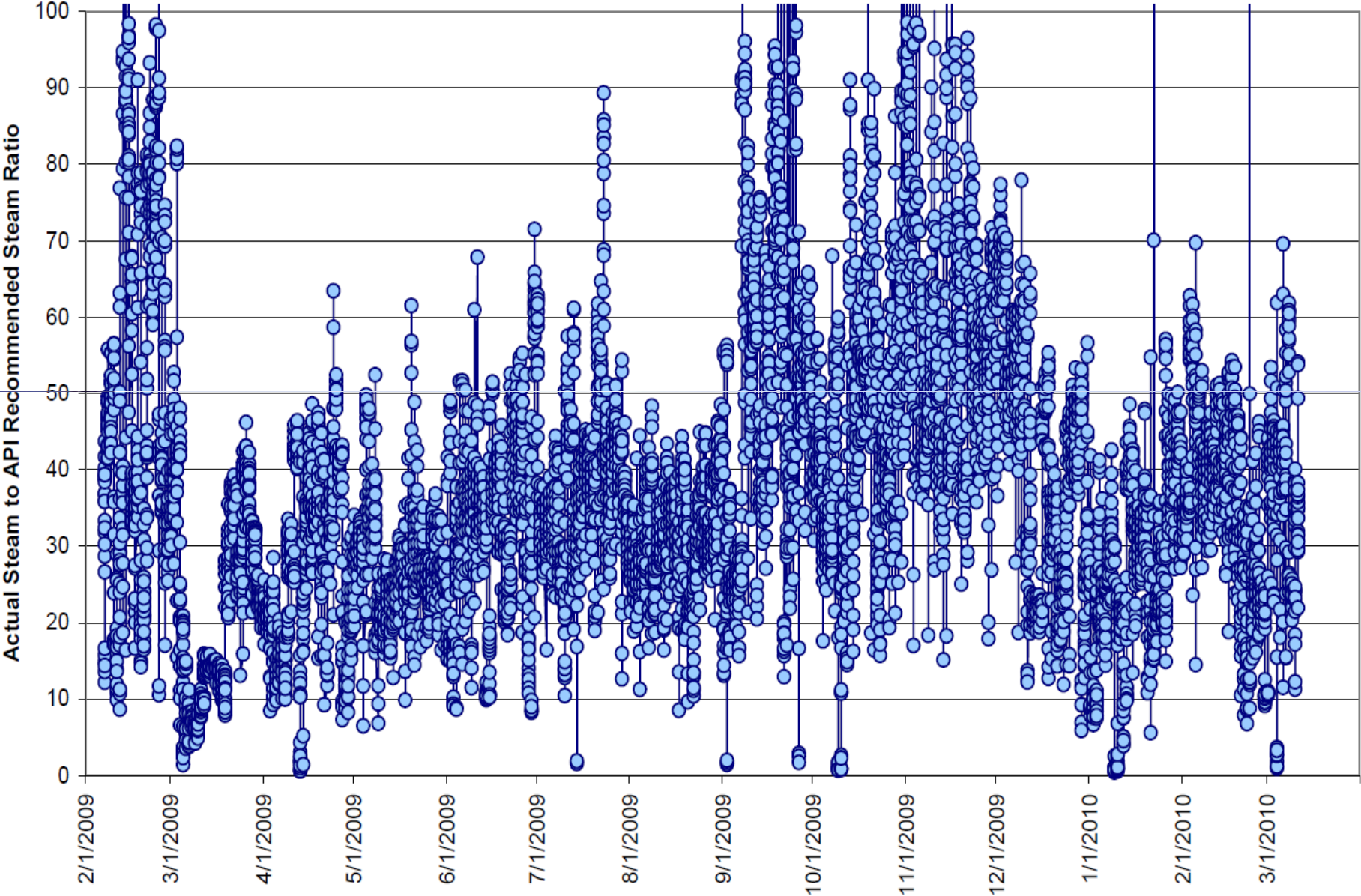


Combustion Efficiency vs. Combustion Zone Net Heating Value  
Marathon Petroleum Company (Texas City), and Ineos (Addyson, OH)



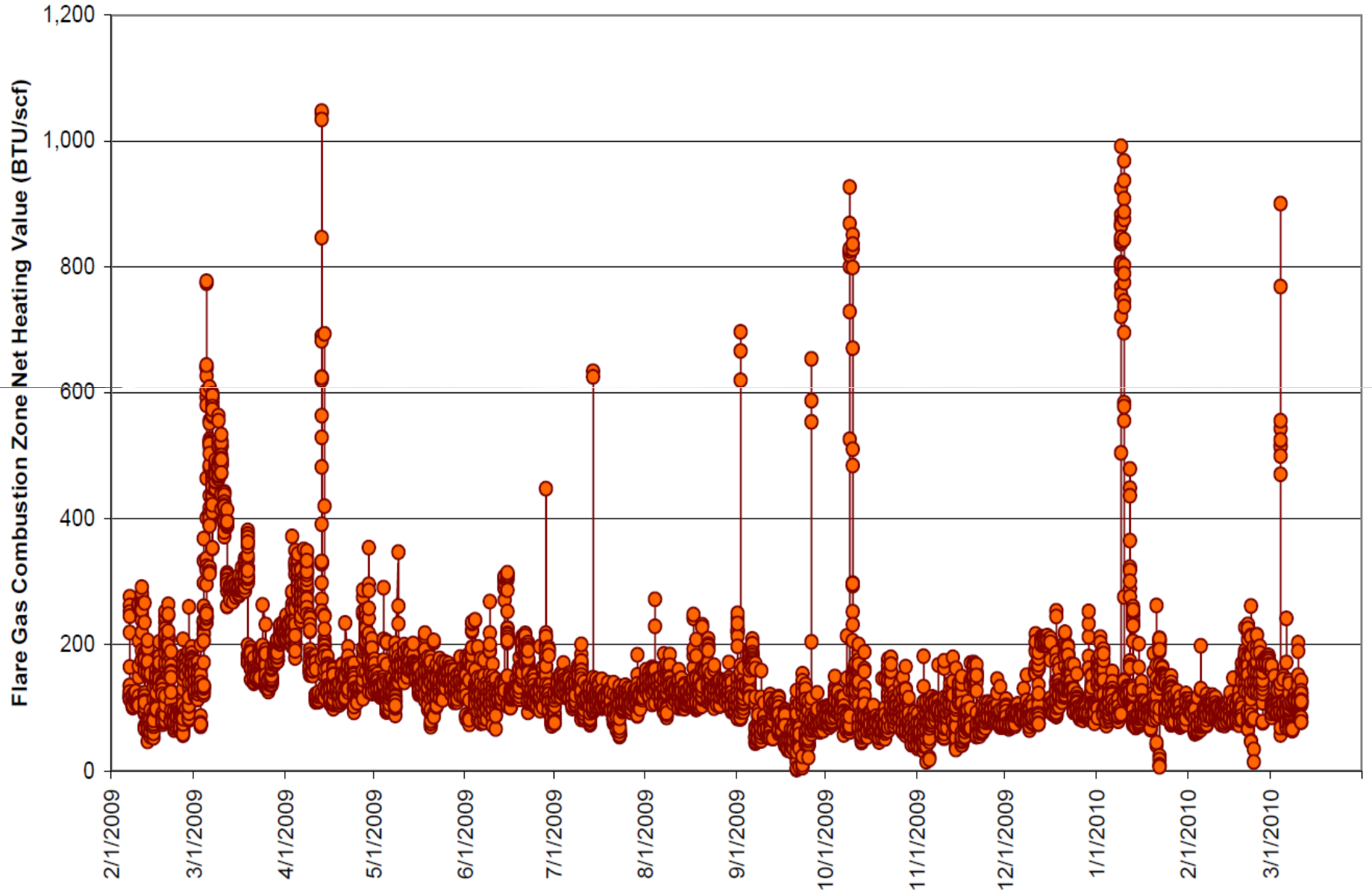
# Flare Actual Steam to API Recommended Steam Ratio

## Company X





# Flare Gas Combustion Zone Net Heating Value Company X





# INEOS / Lanxess Facility





# INEOS / Lanxess Settlement

- The Meredith Hitchens Elementary School is located across the street from the Lanxess/INEOS facility.
  - Monitoring: Ohio initiated ambient air monitoring on the school's roof after malfunctions in late 2004 and early 2005 caused releases of BD and AN.
  - School's Temporary Closure: Due in part to concerns about children's exposure to the facility's emissions, the elementary school closed and its 370 students were moved.
  - Impact of Settlement: This settlement results in the reduction of air toxics at a facility whose emissions were previously identified as a potential risk to school children.





# INEOS / Lanxess Settlement

## Injunctive Relief

- Flare Injunctive Relief
  - meet a steam-to-total gas ratio of 3.6:1 in the combustion zone
  - meet 200 BTU after steam addition after the flame
  - meet 385 BTU/scf in the waste gas prior to steam addition before the flame
  - monitor the flare's operating parameters
  - perform Passive Fourier Transform Infra Red spectroscopy (PFTIR)





# INEOS / Lanxess Settlement

## Injunctive Relief (cont'd)

- Enhanced Leak Detection and Repair Relief
- Install a biofilter system at the wastewater treatment facility to capture and control AN emissions.
- Install a scrubber and route the emissions from the scrubber to the facility's existing thermal oxidizer, if a process line currently shut down reopens.
- Implement CERCLA/EPCRA relief to prevent future reporting violations

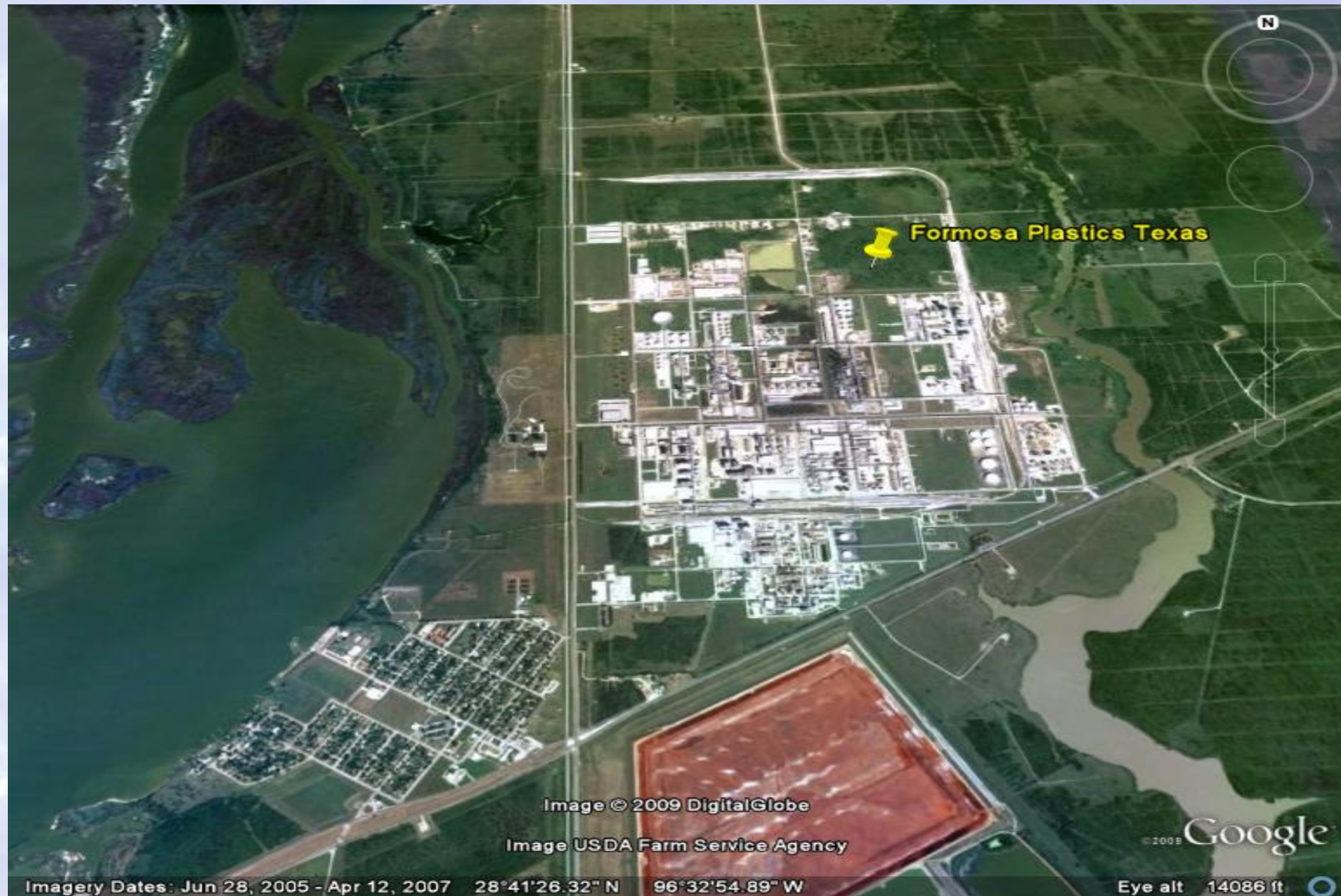


# INEOS / Lanxess Settlement

- Reductions
  - 360 TPY of BD reductions from the flare controls
  - ~1.1 TPY of AN reductions from the Biofilter Project
  - ~ 59.6 TPY of HAP reductions from the enhanced LDAR relief
- Penalty: \$3.1 million dollars
- State Partner: Ohio



# Formosa Plastics (PVC) Point Comfort, Texas







# Formosa Plastics (PVC) E. Baton Rouge







# Formosa Consent Decree (Lodged September 30, 2009)

- Comprehensive Enhanced LDAR Program corrective actions, including
  - Employee training
  - 3<sup>rd</sup> party LDAR audits
  - Lower leak definition for initiating repair
  - Reduced “delay of repair” listing
  - Replace leaking equipment with newer technology
  - Include 160,000 connectors in LDAR program
- Annual emissions reduced: 6,570,000 lbs of VOCs, including HAPs such as vinyl chloride
- Civil Penalty \$2,800,000

# Vertellus, IN Consent Decree (August 2009)

- Resolves EPA allegations that Vertellus failed to comply with leak detection and repair requirements of the national emission standards for hazardous air pollutants.
- \$425,000 penalty.
- \$705,000 environmental project.
- new incinerator to control hydrogen cyanide and benzene emissions.
- include an innovative program to replace valves with new low-leak valve technology and to monitor and repair equipment that is leaking at a lower rate than is required by regulations to further reduce fugitive hazardous air pollutant emissions.

# Questions

