

Ash Grove Cement Company
&
Lehigh Cement Company

Need for Achievable PC NESHAP
Mercury Standard

July 29, 2010

About Our Companies

- Ash Grove Cement Company
 - 9 cement manufacturing plants in the US
 - Durkee, Oregon plant is a “mercury outlier”
- Lehigh Cement Company
 - 11 cement manufacturing plants in the US
 - Tehachapi, California plant is a “mercury outlier”
- Both plants have much higher mercury limestone than any other known plant
- Both plants would require higher control than currently possible to achieve standard with no subcategory

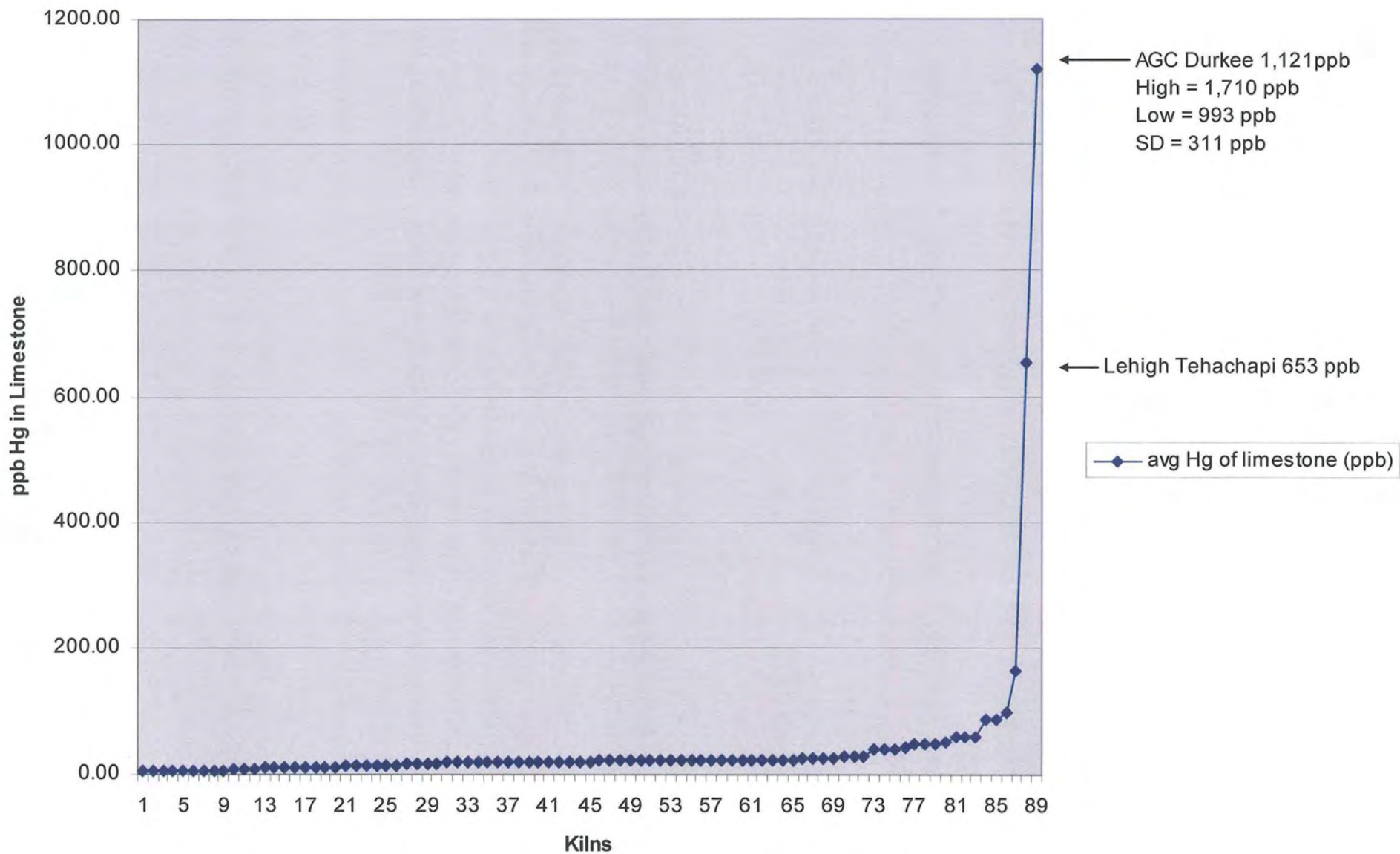
Our Purpose Today

- Ensure that OMB directs EPA to issue the final PC MACT rule that includes a subcategory for Ash Grove's Durkee plant and Lehigh's Tehachapi plant.

Kiln Specifics

- Both Durkee and Techachapi are among the industry's most modern, efficient kilns
- Each plant represents replacement cost of ~\$1B at greenfield locations

Average Hg of limestone (ppb)



Sources of Mercury at Outliers

- 99% of Hg at these two plants comes from on-site quarried raw material
- Less than 1% of Hg comes from the fuels
- Neither plant utilizes fly ash
- Neither plant could achieve a standard established using the lowest emitting, uncontrolled kilns without a subcategory

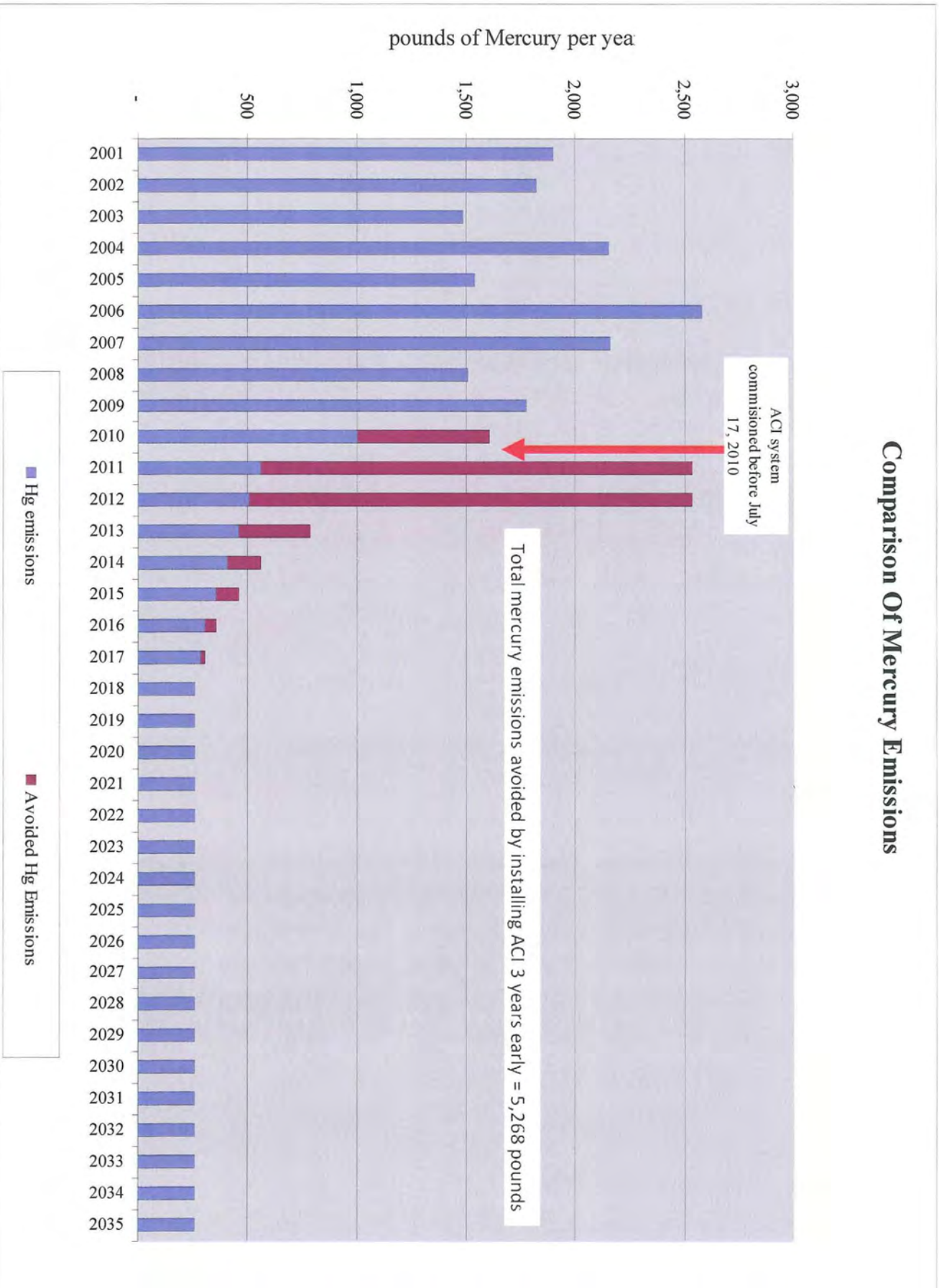
Ash Grove's Proactive Steps

- Worked with Oregon DEQ and a broad group of Oregon stakeholders to develop a voluntary agreement to indentify and install the best known control technology
- Final agreement signed in July 2008
- \$20MM Activated Carbon System installed and operation as of July 2010, capable of 85% control
- Activated Carbon and “dust shuttling” combined will likely achieve ~90% control
- No known technology or combination of technology can achieve proposed standard

Other Control Options Considered

- Activated Carbon Injection Ash Grove installed is clearly the best control technology known to exist
 - EPA specifically noted this in the proposed rule
- Many other control options were evaluated, including:
 - Selective Quarrying (impossible due to geology)
 - Limestone Scrubbing (infeasible)
 - Oxidizing Techniques (ineffective)
 - Importing Limestone (infeasible)
 - Scrubbers (ineffective & infeasible for arid climates)
 - CKD Treatment/FLSmidth Limestone Roaster (ineffective)
 - Dust Shuttling (some added control , but highly variable)

Comparison Of Mercury Emissions



Subcategorization Accords With Clean Air Act

- Congress clearly stated that EPA should not require substitution of mined feedstocks in setting NESHAP standards [Conf. Comm. Report]:

“the substitution of cleaner ore stocks was not, in any event, a feasible basis on which to set emission standards...[where] metallic impurity levels are variable and unpredictable both from mine to mine and within specific ore deposits.”

– This quote sums up limestone quarries

MACT is NOT Intended to Shut Down Sources

Congress' intent in relation to subcategorization is similarly made clear in the House Report associated with the 1990 Amendments. The House Report states that:

“ The Committee expects MACT to be meaningful, so that MACT will require substantial reductions in emissions from uncontrolled levels. **However, MACT is not intended to require unsafe control measures, or to drive sources to the brink of shut down.**” House Rep. No. 101-490, Part 1 at 328 (May 17, 1990) (emphasis added).

Solution: >250 ppb Subcategory

- Clean Air Act allows EPA to create subcategories with different standards:
 - “The Administrator may distinguish among classes, types, and sizes of sources within a category or subcategory in establishing such standards...” Clean Air Act § 112(d)(1)
 - “The concurring opinion in *Brick MACT* supports *subcategorization in situations involving sources’ dependence on high-HAP raw materials to avoid situations where a level of performance achieved by some sources proves unachievable by other sources even after application of best technological controls, viewing such sources as of a different type than others in the source category.*” EPA Preamble to Proposed Rule (p.21148)

Subcategorization Accords With Common Sense

- *Brick MACT* decision:
“one legitimate basis for creating additional subcategories must be the interest in keeping the relation between ‘achieved’ and ‘achievable’ in accord with common sense and the reasonable meaning of the statute.”

Subcategory Supported by Science

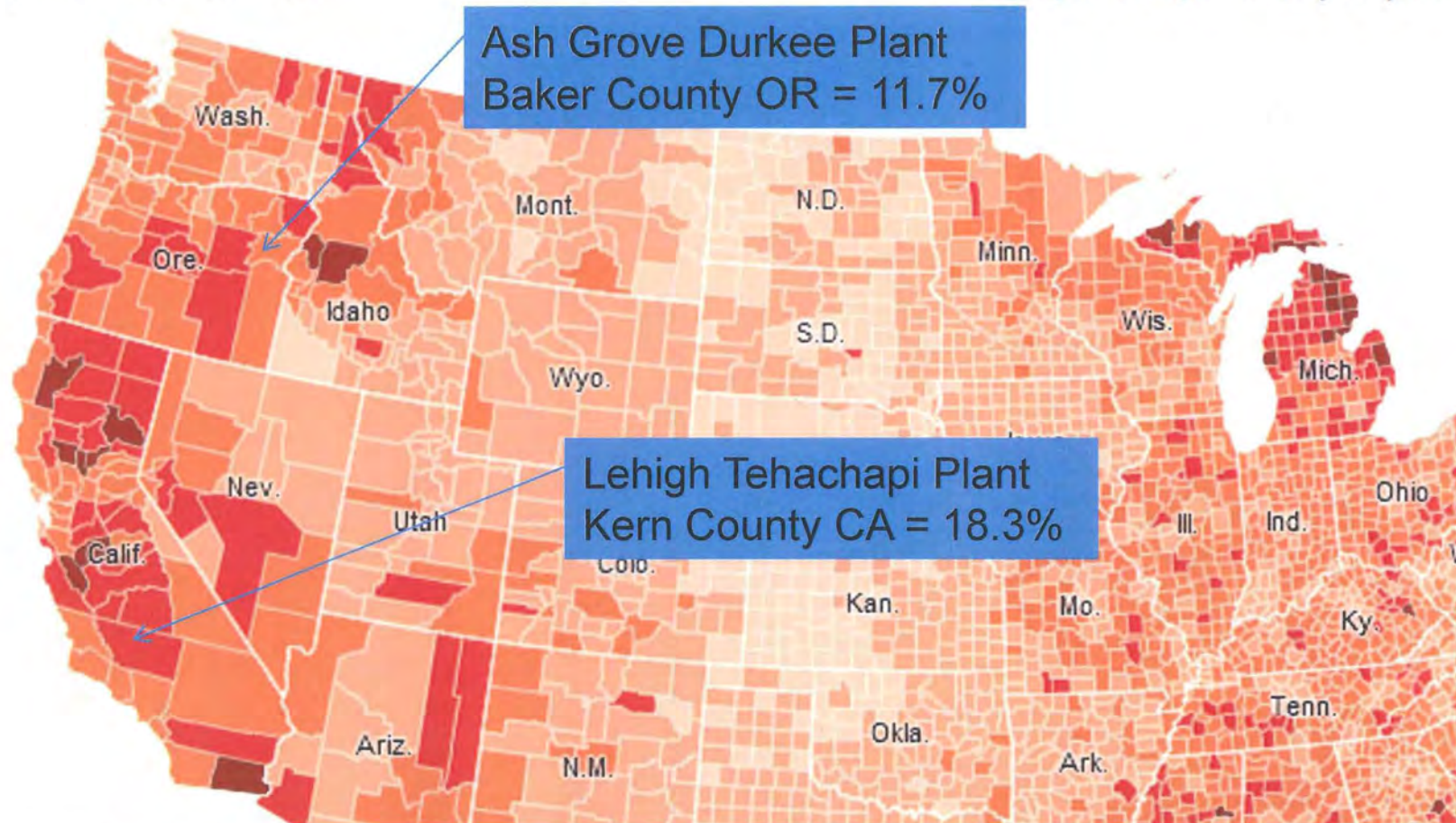
- Subcategory for sources with >250 ppb limestone
- Floor based on current, uncontrolled emissions from the two plants in subcategory
- Then impose a “beyond the floor” standard
 - Technology based limit = 85% control
 - Work practices in addition to technology
- Total reductions at Durkee will be substantial and could reach as high as 90%
- Risk assessment at Durkee showed no risk with uncontrolled emissions
- Residual risk could be used for future evaluation

Plant Closures Exacerbate Recession



March '10 unemployment rate: **10.2%**

One-year change: +1.2 pct. pts.



Source: http://www.nytimes.com/interactive/2009/03/03/us/20090303_LEONHARDT.html?ref=economy

Economic Impact of Plants

Durkee Plant

- **116 Regularly Benefited Employees**
 - Family wage jobs
 - 5 labor Unions Represented (IBEW, IAM, Teamsters, Operating Engineers, Laborers)
 - Annual Payroll of nearly \$10,000,000
 - Direct pay totals \$6,400,000
 - Benefits total \$3,500,000
- **Plant Annual Operating Budget of \$40,000,000**
 - Local Vendors/ Distributors/Supply houses
 - Idaho Powers Largest Customer in Baker County
- **Normal Annual Capital Budget of \$3,000,000**

Tehachapi Plant

- **115 Regularly Benefited Employees**
 - Family wage jobs
 - Union plant (Steelworkers local #12-52)
 - Annual Payroll of nearly \$9,000,000
 - Direct pay totals \$6,300,000
 - Benefits total \$2,600,000
- **Plant Annual Operating Budget of \$37,000,000**
 - Local Vendors/ Distributors/Supply houses
- **Normal Annual Capital Budget of \$2,000,000+**
- **Contribute \$25,000 annually to local charities**
- **~\$3,000,000 annual property taxes**

Baker Co. Economic Impact

- **National Association of Manufacturers**
 - **1 manufacturing job supports 6 other private sector jobs**
 - **116 Durkee jobs = support of 696 private sector jobs in the area**
- **Oregon Employment Division**
 - **1 rural Oregon job = 125 jobs in the Portland Metro Area.**
 - **Shutdown of Durkee plant is equivalent to the loss of 14,500 jobs in the Portland Metro Area**
 - **This represents a number equivalent to all the jobs lost in the State of Oregon during 2008, the worst economic slowdown in 25 years**

Baker Co. Economic Impact

- **Tax Base**

- **Ash Grove Cement Company is the largest taxpayer in Baker County**

- **Payments totaled \$813,759 in 2008 and \$791,915 in 2009**

- **Represents between 10 - 20% of the annual property taxes paid in Baker County**

- **Community Contributions**

- **Over \$100,000 during the past decade**

- **Many employees volunteer for a variety of community organizations**

What OMB Can Do to Help

- There is no technical, legal or environmental reason to prevent a subcategory for high mercury limestone kilns
- Congress provided EPA authority to create subcategories to address this circumstance
- Require EPA to create standard based on level of control actually achieved in practice
- OMB should push this rule back to EPA requiring full consideration of a subcategory and control technology; there is no deadline

Recognize Proactive Reductions

- Ash Grove proactively installed the best control known to exist, costing \$20MM
 - Activated carbon cost \$1MM per year
- System operational July 2010, more than 3 years in advance of requirements
- We are not trying to avoid control, only seeking a subcategory that would allow continued operation
- No subcategory discourages R&D of new technology and early compliance efforts

Disastrous Consequences

- EPA's proposal presumed that "outlier" plants would be forced to shut down
- Best known control only expected to achieve 85% reduction
- Work practices may achieve total control of 90%
- EPA's proposed rule would require 99% control
 - No known control device exists; unachievable
- These plants would be forced to close
 - At least 230 family wage jobs (and benefits) will be lost

Questions?

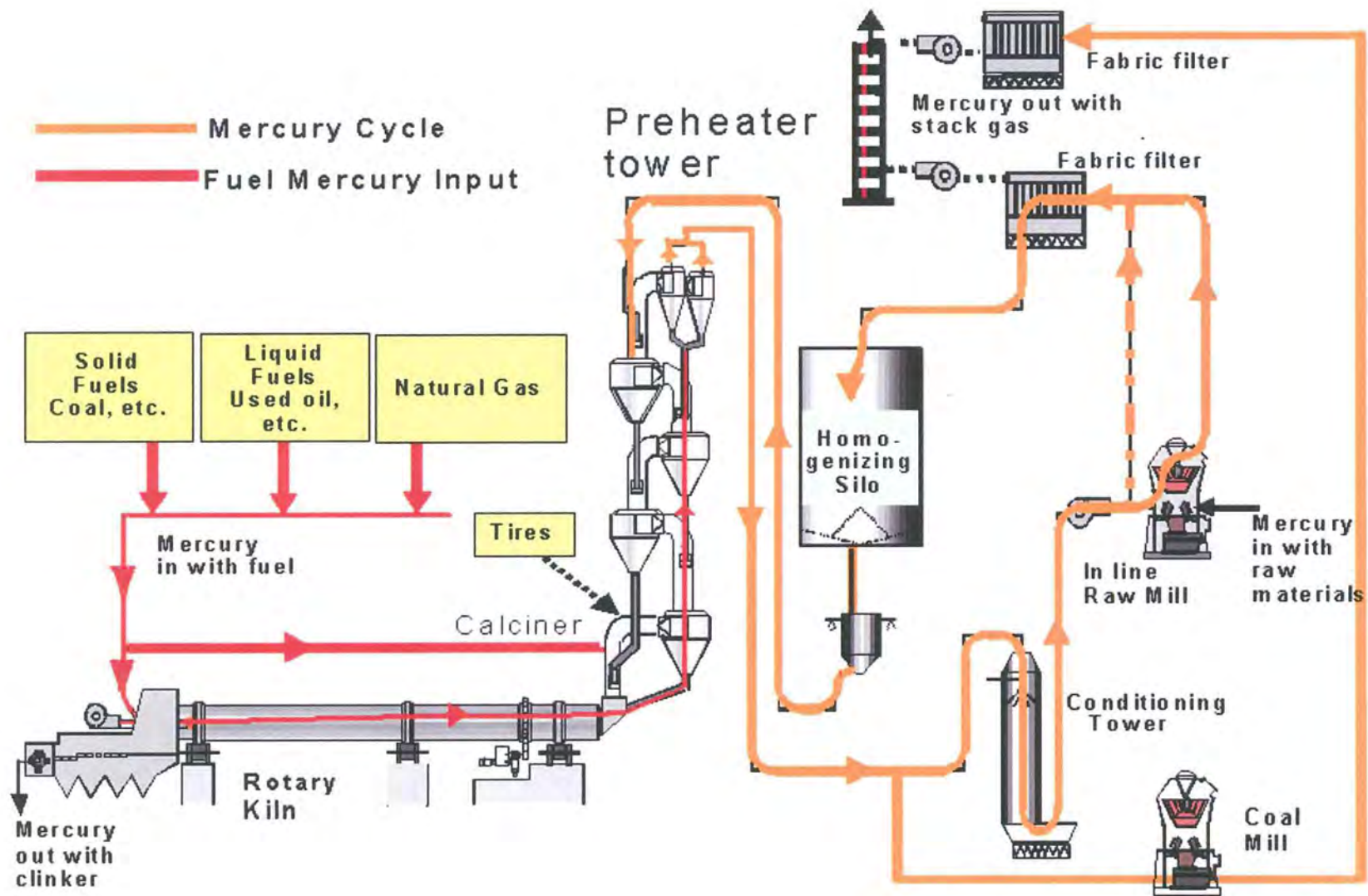
Appendix

Ash Grove Durkee Plant &
Main Limestone Quarry

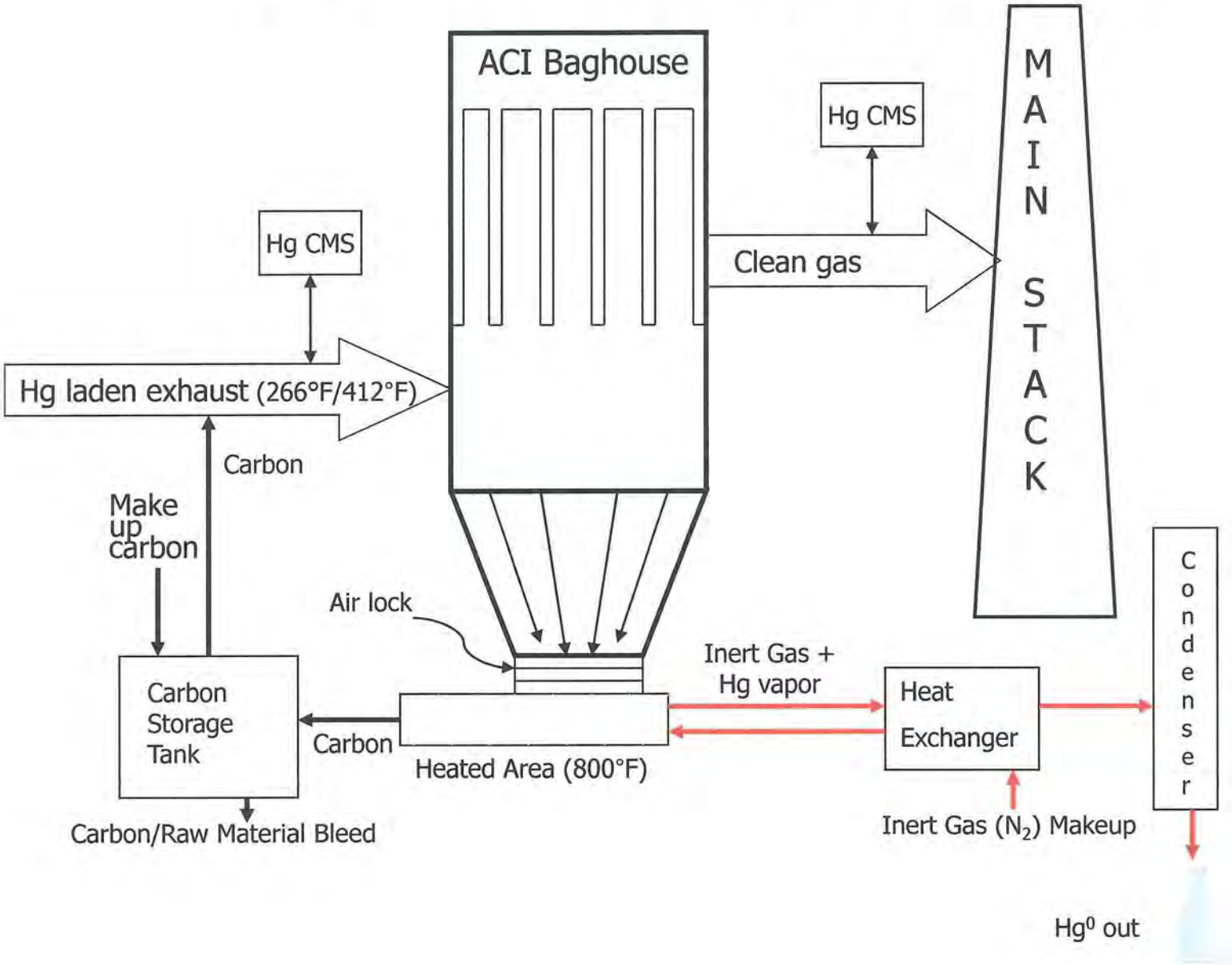


Lehigh Southwest Cement
Tehachapi, CA plant

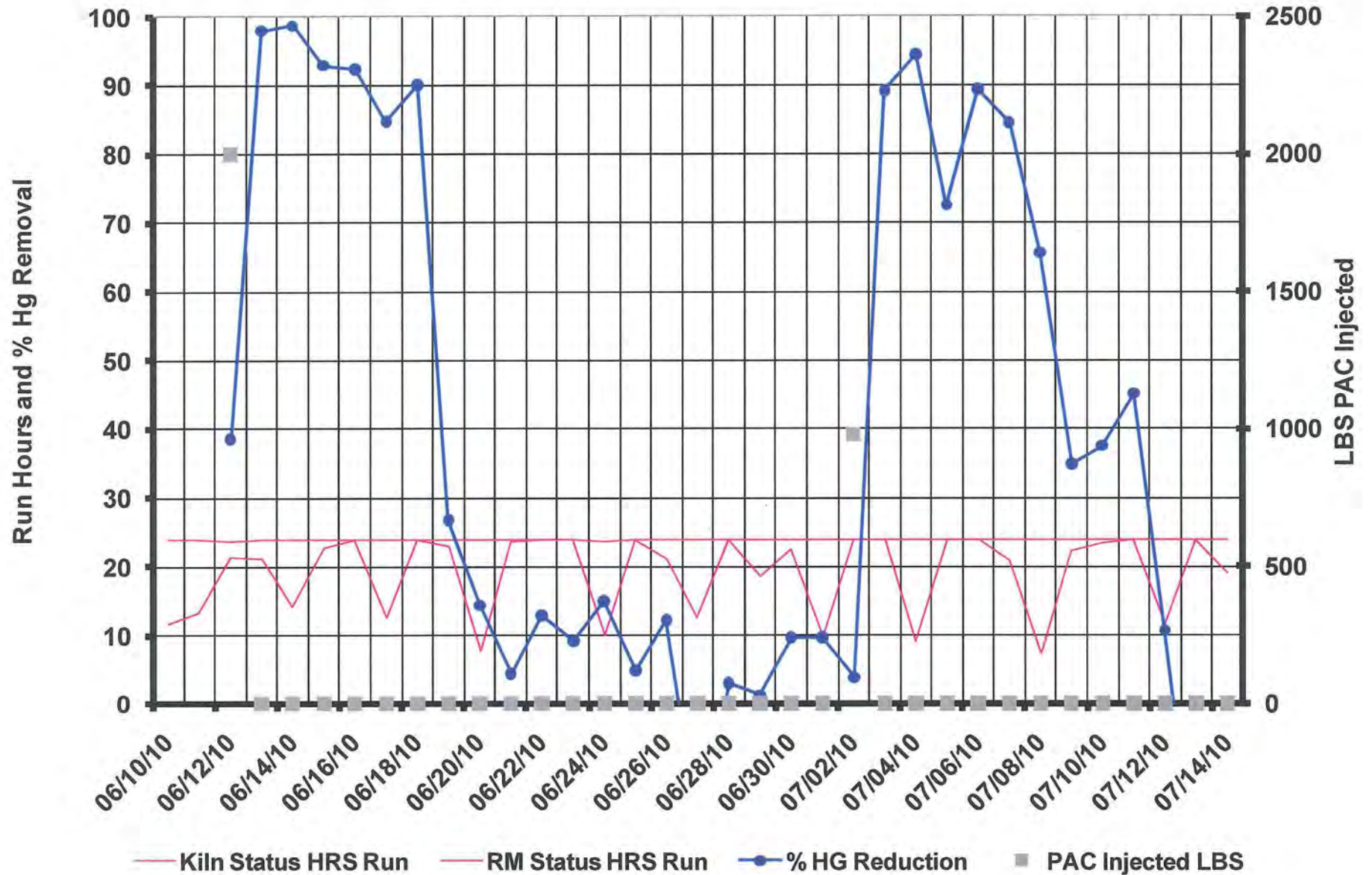




Enhanced ACI Recirculation System



Durkee Plant - Pulverized Activated Carbon Injection



Imported Cement Results in Greater Emissions

- Environ study found that cement imported from China to California has ~50% greater CO₂ emissions than domestic cement
 - Study assumed that Chinese and U.S. cement plants are equally efficient and equally well controlled
 - These may not be rational assumptions
 - Difference in emissions attributable solely to electricity usage and moving cement from Chinese plant to U.S. port

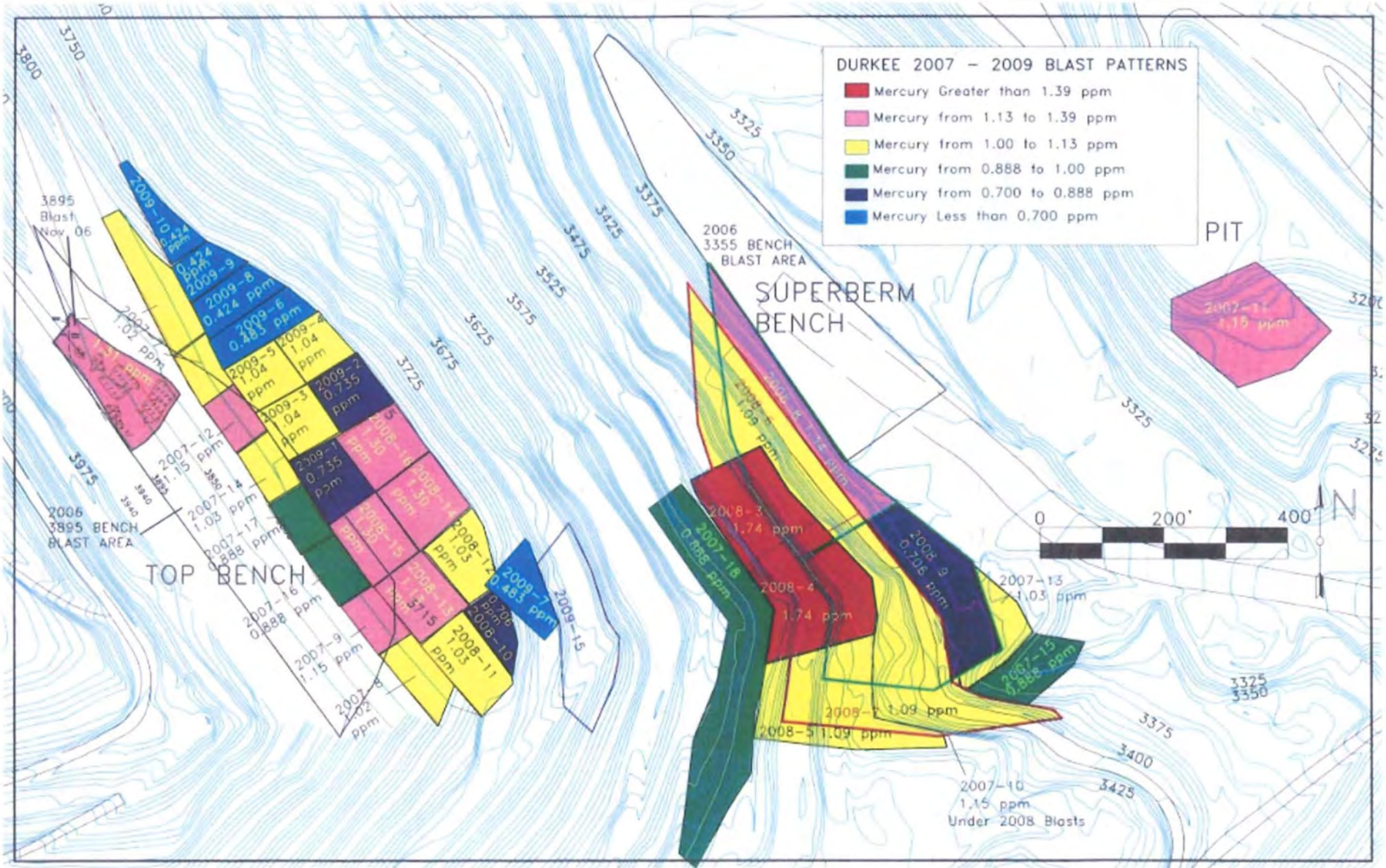
Emissions From Cement Imports

- Emissions of pollutants such as SO_2 , $\text{PM}_{2.5}$ and NO_x also higher for imported cement
 - Ships bringing cement from Pacific Rim countries burn bunker fuel with up to 5% sulfur
 - Average sulfur content in cargo ship fuel = 27,000 ppm
 - U.S. trucks cannot use diesel with more than 15 ppm sulfur
 - Ships burn fuel with over 1,800 times more sulfur per gallon than allowed in fuel used by a U.S. truck
- Ship fuel has much higher nitrogen content resulting in more NO_x emissions
- SO_2 and NO_x result in more $\text{PM}_{2.5}$ emissions

Control Options Considered

- Selective Quarrying
- Limestone Scrubbing
- Oxidizing Techniques (SCR, Halogenated Carbon)
- Importing Limestone
- Scrubbers
- CKD Treatment/FLSmidth Limestone Roaster
- ACI
- Dust Shuttling

Mercury Distribution With Blast Layouts



Best Beyond the Floor Package (1 of 4)

- >250 ppb subcategory must install ACI
 - 85% minimum SRE
 - Implement *Control Enhancement Action Plan* to maximize benefits of ACI
 - Require all reasonable measures to maximize performance
 - Recurring assessment of whether SRE exceeds 85%
 - Duty to reassess injection rates and other reasonable measures

Best Beyond the Floor Package (2 of 4)

- Reduce Hg entering cycle from offsite materials
 - Require *Mercury Minimization Plan*
 - Prohibit use of fly ash in raw feed
 - Evaluate and minimize Hg in other imported materials
- Require dust shuttling up to maximum level achievable without impacting product quality
 - Require site specific evaluation:
 - Document maximization of shuttling
 - Document optimal timing of dust bleed

Best Beyond the Floor Package (3 of 4)

- Could result in 90%+ SRE
 - Until optimized at individual plant, not clear what combination can achieve
 - This approach puts emphasis on optimum possible Hg reduction at each plant

Best Beyond the Floor Package (4 of 4)

- This approach enables Ash Grove & Lehigh to:
 - Employ “the best control technology currently available so far as is known”
 - Employ the only control technology known to be effective on all forms of Hg
 - Keep jobs in the U.S.
 - Avoid emissions associated with imported cement