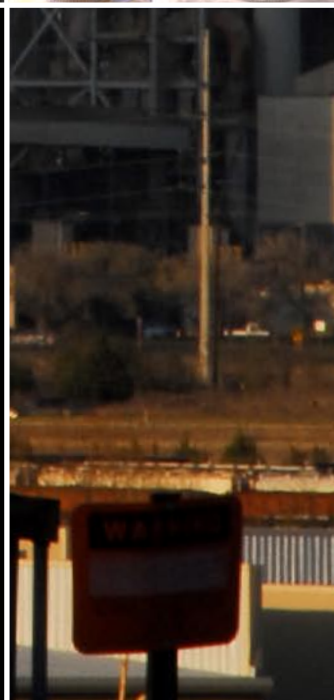
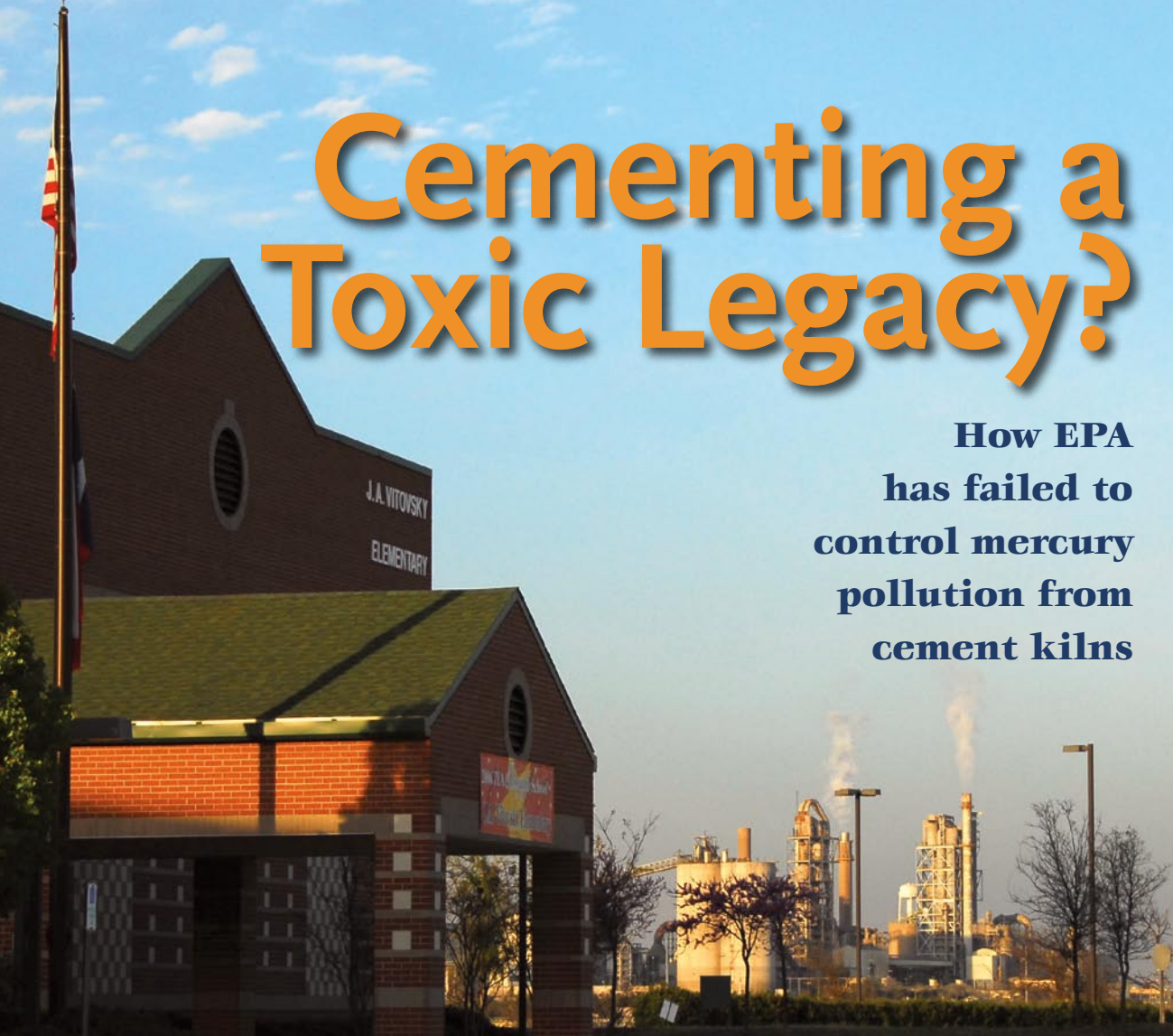


# Cementing a Toxic Legacy?

**How EPA  
has failed to  
control mercury  
pollution from  
cement kilns**



# Cementing a Toxic Legacy?

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from cement kilns**

**Earthjustice  
Environmental Integrity Project**

JULY 2008

## **EARTHJUSTICE**

Earthjustice is a non-profit public interest law firm dedicated to protecting the magnificent places, natural resources, and wildlife of this earth, and to defending the right of all people to a healthy environment. We bring about far-reaching change by enforcing and strengthening environmental laws on behalf of hundreds of organizations, coalitions and communities. We've provided legal representation at no cost to more than 700 clients. For more information, visit [www.earthjustice.org](http://www.earthjustice.org).

## **ENVIRONMENTAL INTEGRITY PROJECT (EIP)**

The Environmental Integrity Project is a nonpartisan, nonprofit organization dedicated to more effective enforcement of anti-pollution laws. EIP's research and reports shed light on how environmental laws affect public health. EIP works closely with communities seeking to enforce these laws. For more information, visit [www.environmentalintegrity.org](http://www.environmentalintegrity.org).

## **PHOTO CREDITS**

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For more information, please visit [www.earthjustice.org/cement](http://www.earthjustice.org/cement)

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# Contents

<b>1</b>	<b>Overview</b>
2	<i>Key Findings</i>
3	<i>Recommendations and Opportunities</i>
<b>5</b>	<b>The Mercury Data</b>
6	<i>Findings</i>
10	<i>Data Sources</i>
<b>11</b>	<b>Ignored: Mercury Pollution from Cement Kilns</b>
11	<i>Where do the mercury emissions come from?</i>
13	<i>Fly Ash</i>
<b>15</b>	<b>Why Mercury Emissions Matter</b>
18	<i>Alexandra Allred –A Mother’s Story</i>
<b>19</b>	<b>EPA’s Failure to Regulate Mercury Pollution</b>
19	<i>An overview of the federal regulations</i>
20	<i>Years of EPA delay</i>
<b>23</b>	<b>Recommendations and Opportunities</b>
<b>24</b>	<b>Notes</b>
<b>27</b>	<b>Appendix A. Kiln Data Analysis</b>
<b>33</b>	<b>Appendix B. Kiln Data Analysis Methodology</b>
<b>35</b>	<b>Appendix C. Normalized Mercury Emissions for Existing and New Cement Kilns</b>

## LIST OF TABLES

6	<i>Table 1. 10 Highest Self-Reported Mercury Polluting Cement Kilns</i>
7	<i>Table 2. Mercury Accounting Gaps</i>
8	<i>Table 3. Major Kilns Ignored by EPA</i>
16	<i>Table 4. Concentration of Capacity</i>

## LIST OF FIGURES

11	<i>Figure 1. Concrete Composition</i>
12	<i>Figure 2. Mercury Emissions from Cement Production</i>
15	<i>Figure 3. Bioaccumulation of Mercury</i>





Cement kilns are poisoning our air, water and food with mercury pollution. For more than a decade, the U.S. Environmental Protection Agency (EPA) has neglected this health threat. Directly defying federal law and multiple court orders, EPA has refused to set standards that will control cement kilns' mercury pollution. Now, new data from EPA itself show that the American public is paying a steep price for the agency's recalcitrance with poisoned fish, polluted air and waters, and increased risks to our health and our children's health. Mercury emissions from cement kilns are almost twice as high as the agency has previously acknowledged, and, in many states, kilns are among the worst mercury polluters.

Thanks to EPA's neglect, the cement industry's mercury emissions have not only gone uncontrolled, but have largely escaped public scrutiny. Having decided in the 1990s that it did not wish to control mercury from cement kilns, EPA has,

until now, never attempted to tally mercury emissions from this industry. EPA now estimates that cement kilns emit nearly 23,000 pounds of mercury each year, far more than the Agency's 2006 estimate of 11,995 pounds.<sup>1</sup> Industry-wide emissions may be as high as 27,500 pounds per year.<sup>2</sup>

The process for making cement often relies on fuels and raw materials that are high in mercury content. While the large quantity of mercury emissions from cement kilns is not widely known, it is hardly surprising. Just over 150 cement kilns operate in the United States and, each year, they "cook" thousands of tons of rock — primarily limestone — at more than 2,600 degrees Fahrenheit. To fuel

***Mercury emissions from cement kilns are almost twice as high as EPA has previously acknowledged, and, in many states, kilns are among the worst polluters.***



this cooking process, cement kilns burn primarily coal. Both the rock and the coal contain mercury, a highly volatile metal that evaporates at room temperature. Virtually all the mercury in the coal and limestone is vaporized in the cement production process, and the vast majority of that mercury enters our air through the kilns' smokestacks.

Mercury, an element, does not decompose or otherwise exit the environment once it has been released into the air. Instead it is deposited back to earth where it persists in soil and water and, through the bioaccumulation process, concentrates in fish and wildlife. Only 1/70<sup>th</sup> of a teaspoon of mercury, or 0.0024 ounces, can contaminate a twenty-acre lake and render the fish in that lake unsafe to eat.<sup>3</sup>

People are exposed to mercury primarily through eating fish. Women of childbearing age are often warned to limit their consumption of certain fish contaminated with mercury. The Centers for Disease Control and Prevention reported in 2000 that eight percent of women aged 16–49 had mercury levels in their blood that exceeded EPA's own safe levels for unborn children.<sup>4</sup> Because mercury is a potent neurotoxin, babies and children are especially at risk for birth defects, loss of IQ, learning disabilities, and developmental problems.

The purposes of this report are to release the results of EPA's data summary to the public, to highlight the health and

environmental threats posed by specific kilns that appear to have especially high mercury emission levels, to expose what appears to be gross under-reporting of mercury emissions from cement kilns, and to call for EPA to act swiftly to set appropriate standards for this toxic pollutant.<sup>5</sup> The Clean Air Act required EPA to set mercury standards for cement kilns more than a decade ago. A federal court ordered EPA to issue those standards more than seven years ago. Still, we wait.

## Key Findings

- EPA has estimated that cement kilns operating in America emit approximately 22,914 pounds of mercury into the air each year.<sup>6</sup> Because this data reflects only non-hazardous waste burning kilns, overall mercury emissions from the cement industry are higher than EPA's estimate of nearly 23,000 pounds.
- EPA sampling shows that large amounts of mercury pass through cement kilns, with some kilns reporting astonishingly high amounts. Absent emission monitoring and emission controls, most of that mercury will be released into the environment.
- A relatively small number of cement plants that use extremely dirty raw materials and fuels are among the worst mercury polluters in their states and, in some cases, in the country. For example, some cement kilns release as much or more mercury than coal-fired power plants.
- Since 1974, cement production has increased 15 percent, but the total number of cement kilns has shrunk from 432 to 178 in 2006. Today, cement production is concentrated in the hands of a relatively small number of large multinational companies. These

companies operate larger cement kilns that produce more cement.<sup>7</sup> Rapidly increasing levels of cement production in the U.S. mean that the cement industry's mercury pollution levels will continue to rise if left unregulated.

- Without proper regulation from the federal government, specifically from the EPA, mercury pollution from cement kilns will continue and increase, adding to a growing public health problem in the United States.

### Recommendations and Opportunities

- EPA must swiftly follow through on its commitments to propose and adopt a mercury standard for cement kilns.
- State regulatory agencies should regularly test cement kiln emissions for mercury.
- Continuous Emissions Monitoring Systems (CEMS) should be installed to measure mercury emissions at every kiln.
- State regulatory agencies should require cement kilns to install mercury pollution control devices.

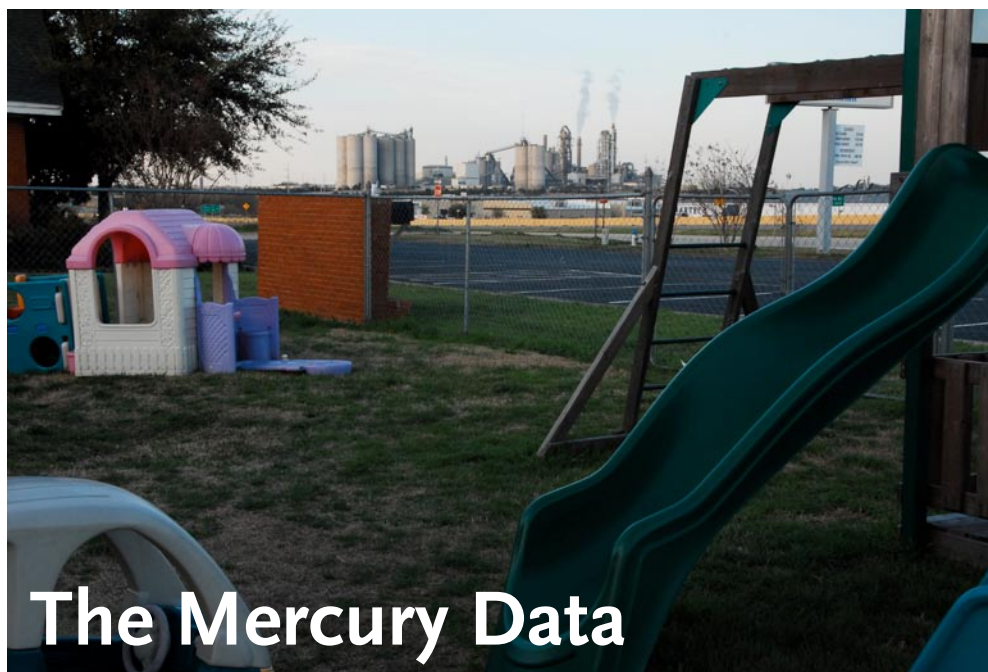
For over a decade, Earthjustice has been a leader in fighting weak and insufficient regulations that failed to clean up mercury and other toxic air pollutants



from industrial and mobile sources nationwide. Our work continues to yield results in cleaning up mercury pollution from some of the nation's biggest industrial sources, including cement kilns, power plants and incinerators. Along with our partners at the Environmental Integrity Project, we have compiled this report in an effort to emphasize the need for strong regulations that satisfy the long-standing but long-ignored federal mandate to control pollution from the cement manufacturing industry. Earthjustice, on behalf of many national and local non-profit public health and environmental organizations, has filed dozens of legal challenges in federal court and won numerous legal claims resulting in stronger clean air protections. In coordination with groups like the Environmental Integrity Project, we remain committed to fighting toxic air pollution and making our air, water, and lands safer and cleaner for future generations.

To learn more about mercury pollution and the cement industry, please visit [www.earthjustice.org/cement](http://www.earthjustice.org/cement).





## The Mercury Data

Ten years after EPA was required to set standards for cement kilns, EPA requested basic information related to mercury emissions from nine of the major cement kiln companies operating in the U.S.<sup>8</sup> EPA claims that it will use this information to finally propose mercury standards for cement kilns sometime in the summer or fall of 2008. After a review of EPA's data, industry self-reporting to EPA's annual Toxic Release Inventory (TRI), and the data from the Portland Cement Association, it is clear that EPA must act to regulate an industry that is emitting more mercury pollution than previously reported and continues to spew harmful mercury emissions into our air and water.

EPA collected data from nine companies and ultimately released data for 51 non-hazardous waste burning kilns currently operating in the United States. EPA released data for all the kilns for which it has data except those owned by CEMEX, which has claimed that the

information EPA requested — information directly related to the amount of mercury it releases into our air and waters — is confidential business information. All of the data considered were self-reported by the kiln companies. For a complete discussion of the data sources considered and methodology, please see Appendix B. The 2007 EPA collection requests were sent to the following companies:

- **Ash Grove Cement**
- **CEMEX**
- **California Portland Cement Company**
- **Essroc Cement Corp.**
- **Holcim (US) Inc.**
- **LaFarge North America, Inc.**
- **Lehigh Cement Company**
- **Lonestar/Buzzi Unicem**
- **Texas Industries, Inc.**

***EPA currently estimates cement kilns in the United States emit almost 23,000 pounds of mercury each year.***