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ENVIRONMENTAL HAZARDS ASSOCIATED WITH BURNING HAZARDOUS
WASTE IN CEMENT KILNS

OCT 8 1987

Mr. J. Patrick Nicholson, Director
National Kiln Dust Management Association
P.O. Box 68106
Toledo, Ohio 43636

Dear Mr. Nicholson:

Thank you for your letter of September 11, 1987, concerning cement kiln dust. The Environmental Protection Agency (EPA) has not conducted the study on cement kiln dust as described in the 1980 amendments to the Resource Conservation and Recovery Act (RCRA). We are aware, however, of the U.S. Bureau of Mines Finding that dust poses a relatively low hazard.

In response to your question regarding the environmental problems attributed to the burning of hazardous waste in cement kilns, I would like to describe the following studies we have conducted. In a June 3, 1987, report, "Hazardous Waste Combustion in Industrial Processes: Cement and Lime Kilns," EPA studied the burning of hazardous waste fuel (HWF) in cement kilns. Results show that as the metal content of HWF and the amount of HWF increase, the metal levels in kiln dust increase. The principal metal that exhibits this increase is lead. However, the highly oxidizing environment of cement kilns convert most metals to the oxide form, including lead to lead oxide (PbO). The very low solubility of PbO, coupled with the high concentrations of calcium compounds, result in a minimal leaching of lead from the kiln dust. Tests have shown that kiln dust generated during the use of HWF contains elevated lead levels, but the lead is not extracted to levels above the maximum permissible concentrations specified by the Extraction Procedure Toxicity test. (See 40 CFR 261.24.)

EPA has also studied the impact on air quality by lead emissions when HWF is used in cement kilns. From the above-referenced report, EPA concluded the following:

"Lead emissions and lead content of process dust

increase when hazardous waste, contaminated with significant quantities of lead, are burned. However, baseline emissions (no waste being burned) of lead are very low to begin with and, although emissions do increase with waste burning, more than 99 percent of the lead emissions entering the process is captured by the process materials, and the resulting emission rates are not significant."

Moreover, on May 6, 1987, EPA proposed a regulation to control emissions of toxic metals, organic compounds, and hydrogen chloride from cement kilns and other industrial furnaces and boilers that burn hazardous waste. The final rule is scheduled to be promulgated in Fall, 1988.

With respect to issuing guidance on cement kiln dust, we do not plan on issuing specific guidance because we still consider this substance as non-hazardous and, therefore, out of the purview of EPA hazardous waste regulations. However, we will refer your letter to the Bureau of Mines for possible assistance.

Thank you for your interest in cement kiln dust. If I can be of any further assistance, please let me know.

Sincerely

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J. Winston Porter
Assistant Administrator