

THE ASH PROBLEM: PART 1. Ash is the Achilles heel of the incinerator industry. They are in an unenviable position, since the better they get at protecting the air the more toxic the ash is going to become. This isn't rhetoric -it is basic chemistry- since the toxics of major concern such as lead, cadmium and other toxic metals, being elements, are indestructible. Thus, no matter what temperature one burns garbage, what goes in has to come out: either into the air or into the ash. The ash is about 25% by weight (more if you include the quench water) of the original garbage, thus for every four tons of garbage burned, you get at least one ton of ash. Many communities are finding out it doesn't make economic or environmental sense to convert four tons of garbage into one ton of hazardous ash that nobody wants, because if regular landfill space is difficult to find, a hazardous waste landfill is far more difficult, and far more costly. About 10% of this ash is fly ash (the ash trapped in the air pollution control devices) and about 90% is bottom ash (left on the grates in the furnace). There are four classifications for Hazardous Material in the U.S.: CORROSIVE, EXPLOSIVE, FLAMMABLE and TOXIC. It is the last category which is relevant for ash. To see if something is toxic the EPA has devised a test called the EXTRACTION PROCEDURE (EP) test, which attempts to simulate the leachate conditions of a landfill. Essentially a certain weight of the ash sample is treated for 24 hours with a dilute acid solution and the resulting solution is tested to see if it contains toxic metals or pesticide residues (at present the testing does not cover dioxins, furans, polyaromatics and many other pollutants known to be formed during combustion). If any of these toxics are found at levels one hundred times the safe drinking water standards, then the material is declared TOXIC and under RCRA law should be sent to a hazardous waste facility. This is hotly debated by the industry and some state agencies who say that since domestic and commercial waste is exempt from RCRA, then so should the ash product. This position bears little relation to the chemistry, since the burning process also generates NEW TOXICS like the dioxins, furans and other chlorinated species.

AN EXCELLENT REPORT BY DR. RICHARD DENISON presented on Jan 28, 1988 reported: "... the reduction in dioxin air emission through better combustion and stack controls may nevertheless yield an ash that poses a greater risk of dioxin exposure." A summary of data on ash from more than 30 U.S. incinerators reveal: "virtually every sample of fly ash tested exceeds federal standards defining a hazardous waste, usually for both lead and cadmium. Half of the combined fly and bottom ash samples tested also exceed the standards, typically for lead...not a single quantitative risk assessment of incinerator ash has ever been conducted for a proposed incinerator project." This report, "The Hazards of Municipal Incinerator Ash and Fundamental Objectives of Ash Management" is available from Dr. Denison, Environmental Defense Fund, 1616 P St, NW, Washington, DC 20036. Tel: 202-387-3500.

PHILADELPHIA ASH ODYSSEY. Philadelphia runs two incinerators, 750 tpd each, using COMBUSTION ENGINEERING stokers, with an ash residue of 200-300 tpd from each incinerator. On September 5, 1986, 15,000 tons of the ash was put aboard the Khian Sea cargo ship and since then "has been repulsed by the governments of the Bahamas, Dominican Republic, Honduras, Haiti, Bermuda and the West African nation of Guinea-Bissau. At its last stop, the vessel was accused of unloading up to 4,000 tons of its cargo on a Haitian beach before it was barred from Haiti on Feb 5, a day after another ship loaded with ash left Philadelphia on a similar mission...the city government has disavowed any responsibility for the waste, which has spotlighted Philadelphia's difficulty in disposing of an estimated 840,000 tons of trash a year." N.Y. Times, February 28, 1988.

"IN A RARE 'FLASH REPORT' (issued only a couple times a year), the EPA's inspector general warned that ash from Philadelphia's garbage incinerators contains high levels of dioxin that could increase the risk of human cancer...The report, sharply criticizing EPA Region III in Philadelphia for understating the dioxin content of the ash was ...dated Oct. 5... EPA's review reporting the higher dioxin levels was prepared by David Tanner, chief of the special review unit in the inspector general's office in Washington, DC...The report estimated dioxin levels in Philadelphia ash as high and perhaps higher than the contaminated soil at Times Beach, Mo, which caused the federal government to evacuate hundreds of families in 1983...The report's 'worst case' estimates for dioxin content in the Philadelphia ash was 217 ppb for fly ash emissions from the incinerator stack, 18ppb for bottom ash from inside the incinerator, and 25.2 ppb for combined ash. The 'better estimates' were respectively, 37.5 ppb, 3.0 ppb, and 4.7 ppb...the EPA Inspector General (John C. Martin) faulted the earlier Region III report for understating dioxin reports... The report concluded, based on the planned use of 250,000 tons of ash, 'that hundreds of thousands of pounds of metals and chemicals may be introduced into the Pamamanian wetlands, including as much as 1,800 pounds of arsenic, 16,700 pounds of chromium, 500 pounds of cyanide, 435,000 pounds of lead, and 200 pounds of mercury'...The report said the Philadelphia regional office, in reporting contamination of less than 90 parts per trillion of 2,3,7,8-TCDD in ash stored at Philadelphia's N.W. incinerator in Roxborough, ignored a later report by a private EPA contractor showing readings averaging 600 ppt...Philadelphia officials had cited the lower Region III dioxin figures as evidence to Panama that the ash was environmentally safe...Residents near the Roxborough incinerator in N.W. Philadelphia said their parked cars are frequently covered with fly ash from the incinerator stack and blowing ash from the pile of more than 100 tons of ash stored at the site. Another 30 tons of ash, stored at a South Philadelphia dock on the Delaware River for shipment for Panama, prompted complaints from nearby employers that blowing ash was making their employees ill ...Since cancellation of the Panama contract, Philadelphia has contracted with a private firm to truck some of the ash to landfills in Ohio and West Virginia for disposal." Environment Reporter, 10-30-87, p. 1623-1625. Philadelphia's Department of Sanitation has told us they conducted their own tests on the ash and concluded that the Philadelphia incinerator ash is not hazardous and that it contracts out the responsibility for ash disposal. The contracts have a confidentiality clause that informs the city's legal counsel where the contractor plans to dispose of the ash, but it is difficult to get the names of the towns it is sent to because of the "competitiveness" between contractors. As of April 11, 1988 the Khian Sea is still at port unable to discharge the ash. A two-alarm fire damaged the pier where it was to unload the ash. Joseph Paolino & Sons were contracted by the city to dispose of the Khian Sea ash. It was the Paolino transfer station at the pier that burned down. According to Paolino's lawyer the Khian Sea ash "would be removed bit by bit and taken to a landfill." Philadelphia Inquirer, 3-7-88.

Note: This is the last of the free copies of WASTE NOT our shoestring budget can afford.

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