# Hazardous Waste: Where to Put It?

*Lines at incinerators and federal actions affecting the handling of hazardous wastes point to disposal problems*

In February 1986 Representative Mike Synar (D–OK) warned participants at a hazardous waste management workshop in Tulsa, Oklahoma, that in the next decade the nation is "going to be buried under a mountain of hazardous waste." Whether in fact the nation faces a waste disposal crisis in the coming years is a question that haunts and confounds federal and state regulators.

The nation's infrastructure for treating and disposing of hazardous wastes is being stressed by a series of federal and state regulatory actions aimed at overhauling waste-management practices and at cleaning up waste sites. These actions stem largely from the Hazardous and Solid Waste Amendments Act,* which mandates the Environmental Protection Agency (EPA) to implement tough new standards designed to limit or ban the land disposal of hazardous wastes.

To protect water supplies and prevent further contamination of the environment from industrial wastes, Congress imposed a tight compliance schedule. By 1990, EPA must complete its staggered implementation of rules governing land disposal of hazardous wastes. In the Superfund Amendments and Reauthorization Act of 1986 Congress also requires states by 1990 to have lined up 20 years of waste disposal capacity. Until this is done they cannot obtain federal funds to clean up hazardous waste sites. But slow action by many states and industrial waste generators on opening new waste-treatment, land-disposal, and incineration plants may have foiled Congress' plan.

These delays also have set the stage for disruptions in the waste disposal system, but getting a fix on potential problems is hard. EPA data profiling the waste stream and disposal capacity are poor, even though Congress first instructed EPA to get tough on hazardous wastes in 1976 when it passed the Resource Conservation and Recovery Act (RCRA). Says the General Accounting Office in an analysis† completed in September, "there is little information on currently available management capacity and few forecasts of future volume and capacity have been undertaken."

On a national basis, EPA says 247 million metric tons of hazardous wastes subject to regulation under RCRA are generated annually. Most of it is generated and treated on site by large companies—chemical producers, petroleum refineries, and manufacturers. EPA estimates that commercial facilities—companies handling wastes generated by others—disposed of just 7 million metric tons in 1985.‡

No dramatic shift by industry away from self-management of wastes is foreseen. Thus, Synar may have overstated the dimensions of the anticipated shortfall. But as the energy crises of the 1970s proved, it takes only a small bottleneck to create a mess. And in the Northeast, Upper Midwest, Gulf, and West coasts it appears increasingly likely that some shortfalls in commercial and private industrial disposal capacity will occur.

In Massachusetts the future looks grim, says Joan Gardner, executive secretary of the state's Hazardous Waste Facility Site Safety Council. There is not one commercial incinerator or land-disposal facility in the state, even though Massachusetts has a lot of manufacturers that generate small quantities of hazardous wastes. They cannot justify treating and disposing of the waste themselves, so they ship their wastes to out-of-state facilities as far away as Alabama.

"We don't have a management plan in Massachusetts," says Gardner about the state's strategy. To date the state's long-term plan has been to react to proposals from commercial companies. Four schemes have been proposed in the past 6 years and all have died. As a result of the political gridlock in the state, "industry is taking a beating" as costs of disposing of hazardous wastes soar, says G. Montgomery Lovejoy of Associated Industries of Massachusetts, the state's largest business lobby.

More worrisome to Lovejoy and state officials is the prospect that Massachusetts' industry will someday be unable to ship its wastes to other states. Unless things change, he says, economic growth could be stifled. To get the state moving, the organization hopes to persuade Democratic Governor Michael Dukakis to back the establishment of an independent authority to select sites.

Even in New Jersey, where the population is well versed in the problems of hazardous wastes, siting disposal facilities of any kind is a slow process. The state has a well-defined plan but is just in the initial stages of reviewing four sites for incinerators and five land-disposal locations. "You can site a chemical plant in this state far easier than you can a disposal facility," says Richard Gimello, director of the Hazardous Waste Facilities Siting Commission. "There is no question," he adds, "that a chemical facility is inherently more hazardous."

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To get the public to recognize the relative risks of a high-performance incinerator or state-of-the-art land-disposal facility is hard. Take, for example, the town of Baldwin, Florida. Since December 1984 citizens there have refused to allow EPA to even bring in a mobile high-temperature incinerator to destroy thousands of gallons of transformer oil laden with polychlorinated biphenyls (PCBs) and more than 3000 yards of PCB-contaminated soil that is now covered with a tarpaulin. Ultimately, says Gimello, "some politicians are going to have to come out of the woodwork and say 'society or my state needs [waste disposal] facilities.' "

Pressure is building to break the waste-disposal deadlocks that exist in many states. The 1984 law is enforced by a set of total land-disposal bans for specified wastes, which automatically take effect if EPA fails to meet congressional milestones. The agency met the 7 November deadline for solvents and wastes containing dioxins. Other critical benchmarks still to come are:

■ 8 July 1987: Standards covering wastes containing cyanides, arsenic, an assortment

*Richard C. Fortuna and David J. Lennett, *Hazardous Waste Regulation: The New Era* (McGraw-Hill, New York, 1987).

†Uncirculated report prepared by GAO at the request of Representative Mike Synar (D–OK), chairman of the House Government Operation Committee's subcommittee on environment, energy, and natural resources, September 1986.

‡*1986 National Screening Survey of Hazardous Waste Treatment, Storage, Disposal and Recycling Facilities*, Center for Economics Research for the Office of Solid Waste, Environmental Protection Agency, December 1986.

of heavy metals, PCBs, corrosive acids, and halogenated organic compounds.

■ 8 August 1988: Disposal criteria for contaminated soil taken from the cleansing of hazardous waste dumps under the Superfund program, and other cleanup actions; and a decision on the continuation of disposal via deep well injection. Curtailment of the practice would affect the Gulf Coast and Southwest most.

■ 8 May 1990: Completion of review and rankings of all hazardous wastes.

As a result, many waste generators and commercial disposal operations will have to alter waste management practices. Waste reduction will be emphasized, and destruction by incineration is sure to increase in the wake of tighter land-disposal and waste-treatment practices.

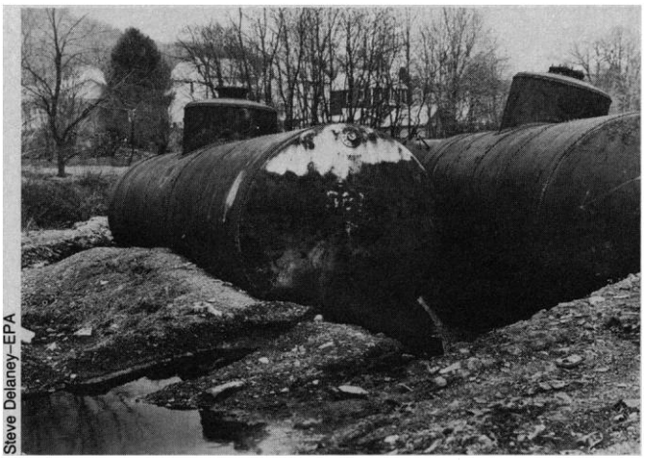
J. Winston Porter, EPA's assistant administrator for solid waste since August 1985, is scrambling to overhaul his office's database and to assess the effects of the amendments on waste disposal practices. It may be several years before analysts can discern the nation's future hazardous waste disposal needs. Even so, Porter says he does not foresee a crisis. "I don't think we are just going to wake up some morning frankly with this big capacity crunch."

EPA says most of the hazardous wastes volume generated yearly, some 185 million metric tons, is wastewater contaminated with solvents, corrosive acids, metals, and other toxic substances. Another 35 million tons of liquids and sludge are injected into deep underground wells; and 30 million tons of sludges go to land disposal units. What's left are about 4 million tons of concentrated toxic solvents, which are recycled or destroyed in industrial furnaces and boilers. EPA estimates that 3 million tons of wastes must be incinerated.

While the 1984 law was structured to discourage land disposal of hazardous wastes, it does not eliminate it. There are about 525 operating land-disposal facilities in the United States, 49 of them commercial operations. At current fill rates, existing commercial capacity is expected to last just 12 years. To maintain existing capacity and to meet state and regional needs new facilities must be built, but how many is unknown.

"We do need at least some land-disposal capacity, whether it is for residuals [from waste treatment operations], incinerator ash, or whatever," says EPA's Porter. The agency will permit disposal at facilities with pits fitted with at least two liners and leachate-collection systems designed to prevent ground-water contamination. But wastes taken to these facilities will have to meet new EPA treatment standards designed to reduce the toxicity and volume of hazardous waste destined for ground disposal.

**Old storage tanks** *sit amidst pools of mixed chemical wastes adjacent to the Bruin Lagoon, a 40-year-old hazardous waste dump in Bruin, Pennsylvania that is slated for cleanup.*



Steve Delaney–EPA

Large waste generators such as Monsanto, Eastman Kodak, and Exxon are rushing to recycle more and to alter manufacturing processes and plant operations to minimize the production of hazardous wastes. Because of potential future financial liability, larger companies also are seeking to manage more of their wastes at company sites rather than rely on commercial outfits. "Five years from now," says David D. Sigman of Exxon Chemical Americas, "I don't want any of our wastes managed offsite."

Such efforts, combined with EPA rules requiring better treatment and dewatering of wastes placed at disposal sites, suggest that waste volumes should decline. But industry officials and EPA consultants§ say volume reductions will be at least partially offset by: the stabilization of sludges containing inorganic material and solidification of liquid wastes—a process that can double the waste's actual volume; disposal of contaminated soil from 888 Superfund cleanup sites and from as many as 200,000 leaking underground petroleum and chemical storage tanks; and agency additions to its list of hazardous substances.

The status of incineration capacity is less confusing. There were 189 industrial incinerators operating in 1985 of which 13 were commercially operated. The need for additional incineration facilities is acute. Commercial facilities are operating at more than 90% of rated capacity, according to a survey conducted by ICF, Inc., for EPA. For example, at Chemical Waste Management, Inc.'s Sauget, Illinois, incinerator, companies must schedule shipments 6 months in advance. The company has a new unit starting up this winter, but all of its capacity is spoken for, says Patrick McEwan, vice president for sales and marketing. The West Coast and New England have the worst incineration shortfall, but a capacity crunch may soon be felt nationwide.

In the face of such evidence, EPA elected to delay by 2 years the implementation of final rules issued on 7 November governing the disposal of dioxins and solvents. The action means contaminated wastes can be stored until incineration capacity is in place. None exists now and EPA says that nearly 3 million pounds of dioxin wastes await destruction. The decision also means that liquid wastes containing solvents can continue to be shipped to land-disposal sites without prior treatment for 24 months.

The agency action has been criticized by Chemical Waste Management, which can comply with the law, because it "rewards others for doing nothing." McEwan argues that waste generators ought to be required to comply with the law. "It has been on the books for 2 years. It's no surprise." Litigation challenging EPA also has been brought by the Hazardous Waste Treatment Council and the Natural Resources Defense Council. They contend that the extension is too loosely constructed and violates the intent of Congress.

The fight over this extension may be the first of many. Despite EPA's schedule of deadlines, many states along the Atlantic seaboard, in the upper Midwest, and elsewhere may find it hard to move quickly to open new land-disposal and incineration facilities. Exxon's Sigman is hardly surprised. "It is a cultural change and it's not going to happen as fast as called for in the law," he observes.

New Jersey's Gimello admits that construction on new facilities in his state are unlikely to begin before 1990. As a consequence, industrialists, commercial waste executives, and state bureaucrats say some bottlenecks in the disposal of hazardous wastes are inevitable. ■

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§*1985 Survey of Selected Firms in the Commercial Hazardous Waste Management Industry*, ICF, Inc., for the Office of Policy Analysis, Environmental Protection Agency, 6 November 1986.