

ABANDONED DUMPS: A CHEMICAL LEGACY

Only crystal-ball gazing can predict how effectively new efforts will plug a loophole in forthcoming hazardous-waste laws

BY JANET RALOFF

Photo of industrial-waste site, EPA

• Niagara Falls, N.Y. In March 1966 the Hartford Insurance Co. told the Hooker Chemical Co. that it ought to fence off its 102nd St. chemical dump. Children, with free access to it, were using it as a playground. A year later there still was no fence. That summer children were burned in explosions that went off with "fire-cracker bangs." Hooker investigators concluded that chlorates and phosphorous were to blame. Three years later the Army Corps of Engineers complained to Hooker that its 102nd St. dump was illegal.

According to a former Hooker official testifying at congressional hearings in Washington last month, the suspect chemicals were never removed although in 1974 or 1975 Hooker did get around to covering and fencing the property.

• Lowell, Mass. On 5.2 acres once owned by the now-bankrupt Silresim Chemical Corp., 20,000 rusted and leaking barrels — stacked 10 feet high in places — endanger city residents, some of whom live only hundreds of yards from the site. Noxious fumes hang in the air. The ground is contaminated — in places saturated — with chemicals such as chloroethylene. Anyone entering the site must wear protective clothing, special boots and a special breathing apparatus.

John Miserlis, a chemical engineer and former college professor who founded Silresim (his name spelled backward), accepted hazardous wastes from New England industries with the intention of salvaging, reprocessing or neutralizing them safely. But he went bankrupt in 1977. Later that year the state revoked his company's operating license, leaving more than a million gallons of dangerous chemicals — many in broken, damaged or unlabeled barrels. Cleanup will take months.

• Iberville Parish, La. On July 25, 1978, a 19-year-old truck driver was asphyxiated

by hydrogen sulfide fumes as he discharged hazardous wastes from his truck into an open chemical pool. The swampy site, surrounded by a river, bayou, canal and fishing lake, was licensed only for disposal of toxic wastes into *underground* injection wells; the fumes that caused Kirtley Jackson's death were produced by a reaction as the chemicals he dumped mixed with liquid wastes in one of four huge *surface* dumps.

Despite testimony of two eyewitnesses watching from the closed cab of another truck only yards away, state environmental officials told enraged citizens at a public meeting that they had little or no effective jurisdiction to respond to or remedy the matter. Local residents reacted by burning the bridge that afforded sole access to the site. Only with the forceful

intervention of federal officials were recalcitrant owners forced to begin site cleanup.

• Houston, Tex. Possible criminal indictments may be handed down in three to five weeks as a result of investigations by state and local agencies into the waste-disposal practices of Browning-Ferris Industries, the nation's largest handler of solid and chemical wastes. The firm is accused of mixing toxic wastes with used motor oil that was then handed over without charge to contractors as surfacing material for dirt roads.

At least five subdivisions in East Texas have had streets surfaced — since June of 1978 — with tainted road oil. Along one stretch of affected roadway in Corrigan, residents reported headaches, respiratory problems and livestock deaths shortly after the oil was put down. Samples elsewhere indicated the presence of nitrobenzene, an industrial solvent that can be lethal if inhaled in sufficiently large quantities, along with traces of cyanide. The company allegedly has admitted to illegally dumping the wastes on roads and is already paying for its removal and the resurfacing of affected roads.

The instances described are *symptoms* of a mammoth problem — the dimensions of which federal decisionmakers are only just coming to realize. The U.S. Environmental Protection Agency estimates that about 344 million metric tons of industrial wastes are produced annually, 10 to 15 percent of which are considered hazardous. Production of these wastes is expected to grow three percent annually.

Congress has defined hazardous wastes as any solid waste which because of its quantity, concentration, or physical, chemical or infectious characteristics may:

- cause an increase in deaths, serious



Workman prepares drum of Silresim's wastes at the Lowell site for reprocessing.

Cyanide from city landfill killed cattle kept downstream.



Unloading chemicals at Palos Verdes, Calif. landfill.

Photos: EPA/Scquest



Mixing chemicals indiscriminately can result in fires, explosions and injury.

irreversible illness or incapacitating ailments, or

- pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

EPA amplified this by defining as hazardous any waste that is ignitable, corrosive, reactive or toxic.

Responding to growing awareness that hazardous wastes are not always handled as safely as they could be, Congress passed the Resource Conservation and Recovery Act (RCRA) in 1976. Its provisions concerning hazardous wastes — expected to go into effect next year — are designed to stop the all too frequent practice of recklessly dumping hazardous chemicals without regard for environmental consequences.

But the rules apply only to current or future sites. Abandoned or inactive dump sites represent a gaping loophole. Unless additional legislation is passed to plug that hole — and several bills are being prepared that will seek to do just that — EPA's authority to clean up inactive sites or the product of anonymous and clandestine dumping is quite limited.

Under RCRA, for example, EPA can require the cleanup of an inactive site only if it can be established that the site is an imminent or substantial hazard to human health or the environment, and if there is an owner with sufficient funds. Many of the worst cases, however, involve dumps where the offending owner has died, gone bankrupt or is unknown.

For cases in which EPA can step in, though, a new program the agency announced last month promises to aggressively seek prosecutions. "We cannot wait until our regulatory program is in place to address serious hazards from either inactive, abandoned or mismanaged sites. We have already moved to deal with some," says Barbara Blum, EPA's deputy administrator; more than 100 are being actively monitored. She adds that more than a dozen others are under active investiga-

tion, with enforcement preparation on many underway.

In January of this year, for example, the Justice Department convicted three men of illegally dumping polychlorinated biphenyls (PCB's) — a toxic and persistent chemical — along 210 miles of North Carolina roads. The case had been developed by EPA. In February, the Justice Department, again acting on a case developed by EPA, filed suit against the owners of Kin-Buc, an Edison, N.J., landfill. And in March EPA filed suit against a warehouse operator in Youngstown, Ohio, for illegally storing PCB containers near water supplies.

In all, EPA hopes to begin tackling some 300 cases a year, referring as many as 50 a year to the Justice Department for prosecution. EPA says it will seek an additional \$130 million for fiscal year 1980 so that it can add 190 members to its solid-waste investigation and enforcement divisions.

Also unveiled last month were plans by the Carter administration, under EPA's initiation, to introduce a bill to Congress this month for creation of a \$6 billion superfund. It would pay for — among other things — cleanup of hazardous-waste dumps. The superfund bill, initially intended to focus on cleanup of oil and toxic-chemical spills, was reoriented to include chemical dumps because of EPA's attitude, expressed by the agency's assistant administrator, Thomas Jorling, that "hazardous substances and wastes are more insidious and are of greater potential harm than oil."

The superfund would be financed through a fee on owners and operators of oil refineries together with a btu-equivalent fee on natural-gas producers. The estimated 30,000 private firms that store and dispose of hazardous wastes would also be assessed a fee. Fees could bring in around \$400 million annually.

The bill would provide a national system for cleaning abandoned dumps or illegal dumps when responsible parties lack cleanup funds. It would also pay for cleanup of environmental emergencies — such as oil and chemical spills — and

would compensate individuals for property damage and loss of livelihood resulting from toxic-chemical exposure. But it ducks the whole issue of compensating individuals for health-related injury — precisely the type of damage that figures so prominently in and has brought national media attention to the Love Canal tragedy in Niagara Falls. Unless the chemical-dump owner is one's employer, there would be few if any federal mechanisms for petitioning redress of health injuries.

What are the chances the bill will pass? Slim and getting more so daily if oil-industry observers are to be believed. The administration had won provisional support among oil industries for the superfund bill this year when it focused primarily on oil-spill cleanup; now that support is dwindling. Although oil and gas companies provide the feedstock for many chemicals, they don't want to pay an "inequitable burden" for the sins of those who make chemicals or dump their wastes.

But a recent oil-industry challenge of RCRA itself may pose a more lethal obstacle to the hazardous-wastes cleanup issue. The American Petroleum Institute says that EPA's decision to term drilling muds, oil-production brines and crude-oil residues as hazardous wastes will incur regulation-compliance costs of \$45.5 billion annually. A May 9 Wall Street Journal editorial puts their complaint succinctly: "Regulation is like a tax, and, thanks to government, neither the oil industry nor the economy is robust enough to absorb \$45 billion annually in new taxes." Noting that the amount is two or three times the industry's after-tax profits, twice the industry's 1979 budget for drilling exploration and production of gas and oil, and \$6 billion more than our OPEC bill for 1978, the editorial concludes that "if these regs stick, one dollar a gallon gasoline will rapidly become 'the good old days.' ... Surely EPA's proposal is an expensive frivolity."

But until there are hazardous-waste regulations in place, there will be little incentive other than environmental philanthropy for the waste-storage and -disposal industries to change their practices.

What are those practices? Some companies appear to be model antipolluters. Manufacturers like the 3M Corp., Eastman Kodak Co. and Dow Chemical Co. destroy many dangerous wastes through high-temperature incineration. Some technologies already available and others under development — such as microwave plasma detoxification (SN: 6/17/78, p. 392) — offer a promise of disposing of even the most persistent and lethal wastes in an environmentally sound manner. Cost remains the primary obstacle to their rapid proliferation, however, and helps explain why 90 percent of all wastes are managed today in ways that will violate forthcoming regulations.

It costs far more to destroy wastes in a sophisticated, energy-intensive reactor

than to merely seal them in 55-gallon drums and cart them off to a landfill. It's less expensive still to dump wastes along the side of the road when no one's looking; as a result, "midnight dumping" has become big business in the industrialized Northeast where licensed, secure disposal sites are few and operating at capacity. Congressional hearings by Robert Eckhardt's (D-Tex.) Commerce subcommittee on oversight and investigations have even found signs that organized crime has entered the illegal hazardous-waste dumping business — a sign of its lucrative nature.

Compounding the problem is a growing reluctance by local communities to permit the siting of new waste-disposal sites or destruction plants "in their own backyard." This attitude is aggravating an already serious shortage in the capacity of available waste-disposal facilities to handle the growing volume of wastes.

A report by the General Accounting Office in December said that an estimated 1.7 million metric ton shortage in available disposal capacity — presumably among facilities managing wastes in an environmentally acceptable manner — is believed to be a minimum projection and could even seriously underestimate the problem. The report was based primarily on data for 12 industries and does not account for the burden remedial cleanup of illegal sites could add if the government begins prosecuting in earnest.

The figure also basically ignores wastes currently stored on a waste generator's own property — 70 to 80 percent of all that is produced. The GAO report says "onsite disposal generally has not been any better than offsite disposal. Based on EPA case studies, 63 percent of the damage incidents were attributable to onsite disposal."

Previous hearings by Eckhardt's subcommittee seem to bear out this charge. Confidential correspondence from Hooker Chemical Co.'s own files, released in hearings last month, documents contamination of groundwater and surface water at or near many of its sites. Surveys at its Taft, La., site, for example, confirmed migration of asbestos and chlorine into ground- and surface water. Other organic chemicals were found in groundwater there and at its Montague, Mich., site.

Investigating the Hooker situation — one not unique to its industry — the Washington Post found that the State of Michigan is suing Hooker over contamination from its Montague dump. (Hooker has committed \$11.2 million toward cleanup operations, but the State expects the entire bill will total more than \$200 million.) The Post also found that California officials are investigating what appear to be traces of pesticide residues migrating into well water from its Lathrop site. And the State of New York is considering a suit against Hooker for aiding in the development of the Love Canal episode — the

cleanup of which will cost taxpayers at least \$20 million; Hooker admitted recognizing as long as 20 years ago that the site posed a serious health hazard but never brought it to the attention of the State, the federal government or the affected residents.

There are signs that the states may be in a better position than EPA to crack down on questionable hazardous-waste disposal practices. Several critics within the Justice Department are concerned that RCRA's "imminent hazard" provision, under which EPA hopes to attack inactive sites, is so weakly worded that it may not stand up in the courts.

James W. Moorman, an assistant attorney general heading the Justice Department's land and natural resources division, announced last week that he has asked Attorney General Griffin Bell for a team of Federal Bureau of Investigation agents to be assigned to environmental problems. He said in hearings before Eckhardt's committee on May 16 that his agency was hobbled in its effective prosecution of serious hazardous-waste polluters by a chronic shortage of investigators trained to discover environmental crimes and by legal authority in many cases too weak to permit the subpoena of necessary chemical company records.

The problem of abandoned and inactive sites was not really anticipated in the writing of RCRA. Plugging the loophole they represent is made an even thornier problem because lawmakers charged with the task are without exception understaffed and underfunded. A January GAO report titled "Hazardous waste management programs will not be effective," documents the impact those shortages will probably have on implementation of RCRA and related legislation.

Neither state agencies nor EPA have completed the first steps needed to implement hazardous-waste requirements of RCRA, it says. Although individual states wishing to draft their own comparable legislation must make it at least as strong as RCRA, officials in all 10 of EPA's regional offices told GAO that they could not provide the technical assistance to states needed to initiate programs. Eight regional offices said they would be unable to provide assistance to either industry or the public on what the forthcoming federal laws will require. And six regional offices said they would be unable to review disposal sites in their region to verify whether they are environmentally sound.

To say that hazardous-wastes management is a difficult problem is a pathetic understatement. EPA estimates the cost of cleaning the nation's complement of silently ticking chemical time bombs at \$45 billion, roughly about what it cost to put a man on the moon. Defusing the bombs will take a tremendous national commitment, but people like Moorman find it hard to imagine a more serious problem facing the country. □

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THE CANCER REFERENCE BOOK: Direct and Clear Answers to Everyone's Questions — Paul M. Levitt et al — Paddington, 1979, 271 p., illus., \$10. This book is a nontechnical account, in question-and-answer format, of cancer. Includes a description of the 21 most common kinds of cancer, and discusses proven methods of treatment. Widespread cancer and terminal care are covered, unproven methods are presented and the future of research and treatment is explored.

DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS — N. Irving Sax — Van Nos Reinhold, 5th ed., 1979, 1118 p., illus., \$54.50. Hazard-analysis information for nearly 15,000 common industrial materials. Includes description, formula, physical constants, toxicity, flammability, explosiveness, disaster potential and explanations of countermeasures to reverse or mitigate possible effects.

A GUIDEBOOK TO NUCLEAR REACTORS — Anthony V. Nero, Jr. — U of Cal Pr, 1979, 289 p., illus., \$25, paper, \$9.95. Provides an introduction to nuclear power plants, describes types of reactors that are commercially available — their basic systems, safety design and operational characteristics — discusses questions that are basic to future development of nuclear power and describes advanced reactors.

HUMAN SEXUALITY — Herant A. Katchadourian, Donald T. Lunde and Robert J. Trotter — HR&V, brief ed., 1979, 343 p., illus., paper, \$9.95. Biological, psychological and social aspects of human sexuality are dealt with thoroughly and presented in the light of the most recent research findings in this briefer version of *Fundamentals of Human Sexuality*.

MASTERING YOUR MIGRAINE — Peter Evans, foreword by Paul Turner and Derek R. Mullis. — Dutton, 1979, 112 p., \$8.95, paper, \$3.95. Surveys the spectrum of present knowledge of this malady that affects peoples worldwide with the exception of those in tribal Africa and discusses current treatment in nontechnical language.

NATURE IS YOUR GUIDE: How to Find Your Way on Land and Sea — Harold Gatty — Penguin, 1979, 271 p., illus., paper, \$3.95. Shows how early explorers and primitive peoples found their way on long journeys by observing nature. Tells how you, too, can use nature through knowledge and observation of such things as birds, other animal life, weather, vegetation, snow field patterns and the position of the sun, moon and stars.

SCOLIOSIS AND OTHER SPINAL DEFORMITIES — John H. Moe et al — Saunders, 1978, 691 p., illus., \$37.50. A medical text covering the history, classification and treatment of spinal deformities (SN: 5/5/79, p. 298).