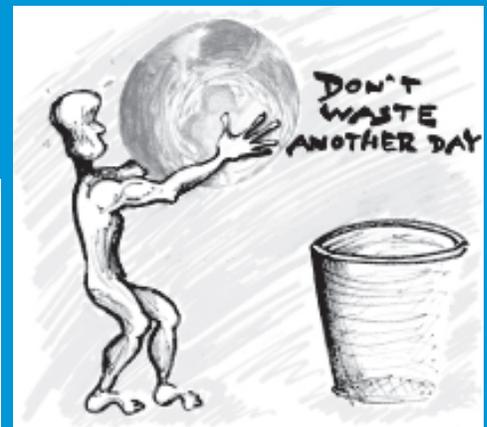


# 25 Years of RCRA: Building on Our Past To Protect Our Future



The artwork displayed on the cover was submitted to the Earth Day 2000 Contest sponsored by EPA's Office of Solid Waste. More than 10,000 entries were received from students in the United States and its territories.

The year 2001 was an important milestone in environmental protection: the 25<sup>th</sup> anniversary of the Resource Conservation and Recovery Act (RCRA). The RCRA statute, regulations, and programs were created at a time when we did not know how much waste was produced or what happened to it. What we knew for certain was that waste needed to be safely managed.

Since that time, we have witnessed a sea of change in pollution prevention, waste minimization, and cleanup. As a society, we have changed over time, and so have the types of wastes we produce and how we manage them. Businesses, individuals, and organizations have made a conscious effort to prevent or reduce the amount of waste they generate. As technology has advanced, we have also updated and improved our methods of safe waste management and cleanup. These sound waste practices and controls allow us to continue to protect human health and the environment from the risks of waste well into the future.

From the beginning, many dedicated people made—and continue to make—invaluable contributions to the RCRA program. Many have spent their lives working to safeguard our natural environment from waste pollution. I tip my hat to each and every one of these individuals for jobs well done. I especially want to single out Nicholas Humber, who served as Director of EPA's Resource Conservation and Recovery Division from 1973-1978. Humber died September 11, 2001 at the World Trade Center.

The events of September 11, 2001 showed us that our roles in environmental protection are ever-changing. We must anticipate potential harm and adapt to new ways of doing business. And, we must continue to work side-by-side with other federal agencies, states, tribes, industry, and the public to improve waste minimization, recycling, and waste management. In this endeavor, we must remember the importance of the message on this publication's cover, "Don't Waste Another Day." It is our responsibility to make environmentally sound decisions every day. It really does affect our children's future.

Marianne Lamont Horinko  
Assistant Administrator  
Office of Solid Waste and Emergency Response

# The Need for RCRA

*[Hazardous waste disposal is] one of the highest priority environmental problems confronting the Nation.*

—President Gerald Ford  
when signing RCRA into law

Waste. In 1969, the *New York Times* called waste “the third pollution.” It’s a bit more fitting to call it the first pollution. It’s the first pollution because left unchecked, waste pollutes the air, the water, and the land, and it changes the Earth’s climate. Look at 1960s America.

So widespread was pollution from waste that favorite “swimming holes” were no longer safe for swimming and town well water was no longer safe for drinking. Unsightly dumps marred the countryside and waterways. Dumps not only spoiled the land and the water, but they also were vectors for disease, providing safe habitats for rats, flies, mosquitoes, and other vermin. They frequently burned or caused extensive damage to surrounding areas.

Taking stock of all this environmental damage, Congress passed the Solid Waste Disposal Act (SWDA) in 1965. It formed the framework for states to better control the disposal of trash from all sources. SWDA set minimum safety requirements for local landfills. Even with SWDA in place, trash still overflowed from landfills and dumps. In the decade between 1950 and 1960, the amount of trash individuals created increased 60 percent. In 1969, the *New York Times* declared: “An avalanche of waste and waste disposal problems is building up around the nation’s major cities in an impending emergency that may parallel the existing crises in air and water.”

In the 1960s, America also discovered another dimension to waste—hazardous waste. In 1965, more than four million chemicals were being produced in the U.S., and synthetic chemical manufacturing was on the rise. Manufacturing these chemicals often created toxic by-products that needed to be disposed of, and that disposal went largely unregulated.

The formation of EPA in 1970 expanded the federal role in waste management. The Agency worked with the states and industry to collect and analyze information on resource recovery, and on waste types and volumes. It looked at the risks posed by waste and at the likelihood of harm to human health and the environment. By 1974, it was apparent that the Solid Waste Disposal Act was not strong enough to address the dangers posed by the increasing volume of solid and hazardous waste.

Waste management in the United States was fundamentally changed on October 21, 1976 when Congress passed the Resource Conservation and Recovery Act (RCRA). Although it actually amends

the Solid Waste Disposal Act, the legislation is so comprehensive, it is generally referred to simply as “RCRA,” without reference to the original Act.

Congress established RCRA’s goals, which are to:

- Ensure that wastes are managed in a manner that protects human health and the environment;
- Reduce or eliminate, as expeditiously as possible, the amount of waste generated, including hazardous waste; and
- Conserve energy and natural resources through waste recycling and recovery.

RCRA is a significant departure from the end-of-the-pipe pollution control statutes Congress previously passed. It is intended to be a pollution prevention measure. It also is intended to be a joint federal and state enterprise. The federal program provides basic requirements that give consistency to systems that states implement. States implement their own waste management programs, so that they can design programs that fit their needs, resources, and economies.

RCRA banned open dumping. It provided a comprehensive national program to encourage source reduction, recycling, and safe disposal of municipal wastes. What’s more, RCRA mandated strict requirements for treatment, storage, and disposal of hazardous waste to minimize present and future risks. This booklet looks at 25 years of RCRA.

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***In 1976, the House Committee on Interstate and Foreign Commerce summarized: Current estimates indicate that approximately 30-35 million tons of hazardous waste are literally dumped on the ground each year. Many of these substances can blind, cripple, or kill. They can defoliate the environment, contaminate drinking water supplies, and enter the food chain under present, largely unregulated disposal practices.***

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# 25 Years of Protection

*The new expansion of the hazardous waste management program which the President has signed presents a major challenge for EPA and the nation, but it is one which we cannot fail to meet if we are to protect our citizens' health and our country's environment from the dangers of uncontrolled hazardous waste disposal.*

—Former EPA Administrator  
William D. Ruckelshaus

## *The Early Years*

Tackling waste management on a national scale proved to be a formidable task. First, in 1979, the Agency laid out design and operating conditions for sanitary landfills receiving municipal waste and garbage. These conditions were the first step toward closing all open garbage dumps, and to ensure that disposal facilities posed no threats to human health and the environment. States had to incorporate these provisions into their solid waste management programs.

At the same time, EPA began the challenging task of creating hazardous waste regulations to achieve RCRA's goals. EPA had to overcome the fact that it had little or no data on or experience in such waste management. In 1980, EPA achieved a significant milestone in hazardous waste program development by publishing the "Hazardous Waste and Consolidated Permit Regulations," in the *Federal Register*.

The RCRA regulations are a cradle-to-grave management system that uses tracking and permitting to monitor and control hazardous waste. They define solid and hazardous waste, but also impose strict standards on anyone who generates, recycles, transports, treats, stores, or disposes of hazardous waste.

The universe of hazardous waste is large and diverse, as is the RCRA regulated community. Not only does it include typical "heavy" industry that we think of as hazardous waste producers, but also government facilities, local small businesses, hospitals, universities, and many other entities. Some common examples of hazardous waste are used solvents, battery acid, chemical wastes, and various pharmaceutical wastes.

After creating the basic regulations, EPA focused its energy on authorizing states to implement the RCRA hazardous waste program. EPA authorizes states to operate their own hazardous waste programs when those programs are at least equal to and consistent with federal standards. By March 1981, EPA had authorized the first 16 states to manage their own RCRA programs. Now, 48 states, one territory, and the District of Columbia are authorized to operate their own hazardous waste management programs covering gen-

## The Formative Years

- ✓ **Established protective “cradle-to-grave” hazardous waste structure**
- ✓ **Implemented permitting and tracking system**
- ✓ **Developed TSDFs design and performance standards**
- ✓ **Initiated state authorization program**

erators, transporters, and treatment, storage, and disposal facilities (TSDFs).

After 1980, the Agency continued to refine and develop the “base” hazardous waste regulations. On October 1, 1981, EPA issued the first RCRA hazardous waste permit—ensuring that the facility managed wastes according to RCRA technical standards and operating procedures. The Agency enhanced the design and performance requirements for hazardous waste TSDFs in 1982.

## Hazardous and Solid Waste Amendments (HSWA)

In November 1984, Congress significantly expanded and reinforced RCRA’s protective framework. The Amendments established over 70 statutory provisions requiring EPA action. Among other things, HSWA:

- Created RCRA’s Land Disposal Restrictions (LDR) program.
- Established the RCRA Corrective Action requirements.
- Specified permitting deadlines for hazardous waste facilities.
- Regulated businesses that generated even small amounts of hazardous waste.
- Required a nationwide look at the conditions of solid waste landfills.



## Cleanups Resurrect Communities

### RCRA Works for *Bethlehem Works*

In 1998, Bethlehem Steel Company (BCS) closed a steel-making plant that had been operating for more than 100 years. The former plant borders the Lehigh River and contained a coke production facility; a steel and iron-making, finishing, and forging operation; and a chemical plant. To revitalize the area in South Bethlehem, Pennsylvania, BCS designed an ambitious project called *Bethlehem Works*.

Because the soil and ground water on the 2000-acre site were contaminated by hazardous waste, the site is subject to RCRA corrective action. BCS, the Pennsylvania Department of Environmental Protection, and EPA formed a team to facilitate cleanups and remediation liability. Working together, the team devised and approved ways to clean up contaminants, address potential liabilities, and eliminate avenues of exposure. BCS also is working closely with the community to complete this \$400 million redevelopment project. *Bethlehem Works* will include the National Museum of Industrial History (in association with the Smithsonian Institution); an iron and steel showcase; a 250-room hotel and conference center; multiplex cinema; family fun center; swimming pool; ice skating center; and retail stores.

### Promoting Revitalization

EPA uses various tools in its continuous effort to promote and streamline cleanups of contaminated sites. A prospective purchaser agreement (PPA) is an agreement where EPA conditionally releases a buyer from liability for contamination that existed before the buyer began work on the site. In return, the buyer agrees to help EPA with its mission of protecting human health and the environment.

Such a PPA was used with a company in Virginia. This one centered around the exchange of land in Virginia, that had been marred by pollution left behind from 43 years of manufacturing. EPA determined the company's intended uses of the facility would not aggravate existing contamination or interfere with on-going cleanups. A PPA allowed the Virginia community to reap the benefits—which included new employment opportunities—of keeping the commercial property in productive use.

### RCRA Helps Restore Waterfront Property

Under the direction of EPA and state RCRA programs, a former waste facility cleaned up a 22-acre peninsula contaminated with chrome ore tailings and wastes from 140 years of chemical manufacturing. The site discharged 62 pounds a day of hexavalent chromium, a carcinogen, into nearby ground water.

The facility paid for the entire cleanup, estimated to be \$70 million, as part of one RCRA consent decree involving corrective action. The waterfront property is now being redeveloped.

## No More Land Disposal

In 1984, about 25 million tons of hazardous waste were land-disposed annually. To protect the nation's ground water and soil from hazardous waste contamination, HSWA established treatment requirements that must be met before waste can be disposed of in land units. All hazardous waste must be chemically or physically treated so that the toxicity or mobility of the waste is reduced. Between 1986 and 1998, the LDR program issued treatment standards specifying the method or level of treatment for all hazardous waste. As technology and industry advance, and as new hazardous wastes are identified, treatment standards continue to be developed.

The LDR program serves as an incentive for businesses to implement waste minimization plans. Some ways that hazardous waste generators minimize their waste is by reusing and recycling it—or by not creating it in the first place. RCRA's tough LDR requirements, coupled with its emphasis on sound waste minimization practices, have dramatically reduced both the number of hazardous waste generators and the amount of waste they generate.

In 1980, nearly 50,000 businesses generated hazardous waste, and about 30,000 businesses ran waste treatment, storage, or disposal facilities (TSDFs). In 1999, only 20,000 businesses produced hazardous waste, with about 2,000 TSDFs managing that waste. What's more, the amount of hazardous waste disposed of in landfills has gone from 3 million tons to less than half that amount—nearly a 60 percent reduction.

## More Cleanups

In 1980, nearly 60,000 businesses notified EPA that they treated, stored, or disposed of hazardous waste. Many of these facilities followed outdated practices, which caused contamination to areas within and around these businesses that needed to be cleaned up. The number of such sites needing cleanup was estimated to be more than three times the number of sites on the national Superfund list.

HSWA greatly expanded EPA's authority to require cleanups at TSDFs. It created EPA's Corrective Action Program. Under Corrective Action, cleanups are required for all waste leaking into the environment from any source at a hazardous waste facility.

## Stronger Permitting for Hazardous Waste Facilities

HSWA reestablished permitting deadlines for hazardous waste landfills, incinerators, and storage facilities. On November 8, 1985, hazardous waste landfills and surface impoundments that failed to comply with financial assurance and ground-water monitoring requirements were forced to close.

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***Since the start of the LDR program, a significant volume of hazardous waste has been directed away from land-based management. Landfilling decreased about 94 percent, and underground injection decreased about 70 percent.***

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## Corrective Action Provides Solutions

### Housatonic River Regains New Life

The Housatonic River in Massachusetts was once known primarily by local sportsmen. It was also a disposal system for a local transformer manufacturer. Over the years, the River became contaminated with polychlorinated biphenyls (PCBs) and other hazardous waste, creating a major risk to the health of local residents, and to the environment.

Thanks to a RCRA Corrective Action permit issued in 1991, over 10,000 cubic yards of contaminated sediments have been removed from the Housatonic River; more than 50 million gallons of ground water have been removed and treated; and another 1 million gallons of PCB-contaminated oil have been recovered. In addition, more than 100,000 cubic yards of contaminated sediment and bank soil will be removed over the next few years. This river and floodplain remediation, and \$50 million allocated toward redevelopment work, will not only protect commercial, industrial, undeveloped, recreational, and residential properties, but also allow the old transformer manufacturing plant to open for reuse.

### Major Tire Pile Cleaned Up

When a 1998 fire ignited a mountain of abandoned tires on the Gila River Indian Community Reservation in southern Arizona, the fire wasn't the only hot topic to resolve.

The abandoned tire pile that caught on fire and forced the evacuation of more than 300 residents contained waste tires from 13 Arizona counties. The counties had arranged for disposal with a private company that collected and temporarily stockpiled the tires on the Gila River Reservation before going to a disposal facility. When the company responsible for disposing of the tires breached its contract with the counties, the tires were left abandoned on the reservation.

EPA used a combination of RCRA enforcement procedures to get the site cleaned up. In September 2001, the counties completed the cleanup of both burned and unburned tires.

### RCRA Works with Community

When a community of Denver residents became aware of the indoor air risks associated with releases from a plume of contaminated ground water that migrated from a facility in their area, they took action.

As a result of RCRA Corrective Action, the community participated in a series of "Open Houses," and worked closely with EPA and the facility to get over 100 homes tested for possible contamination. Over 50 homes now have new ventilation systems. In addition, indoor air risks are within acceptable levels. The community is still working with EPA to test the remaining homes in the area.

The affected community is made up of more than 30 percent lower-to-middle income minority residents, which include Hispanic and East Asian Americans.

As a result of these requirements, virtually all operating hazardous waste landfills and incinerators came under state and EPA permits within a few years, and many were closed down. For example, industrial facilities managing waste in ponds, lagoons, and impoundments have gone from 1,000 to fewer than 50 over the last 25 years.

In all, RCRA's tough requirements for safe design and operating standards for hazardous waste facilities led industry to better management practices.

## A Closer Look at Solid Waste Landfills Leads to Better Municipal Solid Waste Management

HSWA required EPA to research and report on the environmental soundness of municipal solid waste landfills, and on amounts of waste being processed by them. In October 1988, the Agency reported that Americans generated 160 million tons of municipal solid waste (MSW) each year. Of that, 131 million tons were sent to 6,500 municipal solid waste landfills (MSWLFs). The Agency also found that these landfills inconsistently used environmental controls, and that they posed significant threats to ground and surface water resources.

Just a few months later, in February 1989, EPA published its *Agenda for Action*, which outlined goals and recommendations for municipal solid waste management. To make solid waste management more effective, federal, state, tribal, and local governments adopted an integrated approach to waste management. This approach combines complementary waste management techniques that include source reduction and recycling.

### Integrated Waste Management

- ✓ **Source reduction, which prevents waste generation in the first place, and encourages reuse**
- ✓ **Recycling and composting, which promotes recovery over disposal**
- ✓ **Landfilling and combustion, which provides safer disposal capacity and waste-to-energy**

EPA established a national goal for source reduction and recycling. The goal was to achieve 25 percent recycling and source reduction rates by 1992. Most states met or exceeded that rate by then. Today, nearly all states and many Native American communities practice integrated waste management, and average a 28 percent recycling rate nationally.

The Agency documented and measured the benefits

### HSWA

- ✓ **Established treatment standards to prevent the disposal of untreated wastes into and onto the land**
- ✓ **Led to permitting of more than 900 hazardous waste management facilities**
- ✓ **Established an enforcement presence in the field, including a strong criminal enforcement program**
- ✓ **Closed substandard landfills and incinerators**

***In 1988, 131 million tons of municipal solid waste went to 6,500 landfills. Today, fewer than 2,500 landfills remain open.***

from source reduction and recycling. For example, EPA has found that increasing the national recycling rate to 35 percent would reduce greenhouse gas emissions by an estimated 17 million metric tons. Such reduction roughly equals the carbon dioxide emissions from 12 million cars.

## 1990s

The Agency spent the final decade of the 20th century following up HSWA mandates, and looking at more and better ways to prevent risks from waste. Bringing more than half of all hazardous waste under regulatory controls, EPA added another dimension to the definition of hazardous waste, and devised a new and improved procedure to evaluate wastes that are likely to leach toxic constituents into ground water.

By refining and streamlining regulations, loopholes were closed while economic burdens were eased. Industry and waste management data continued to be collected and analyzed, and regulatory barriers to recycling were eliminated. A number of additional waste streams were identified for specific listing as hazardous waste. Specific wastes from petroleum refining, coke products, and some organic chemicals also were added to the hazardous waste list, marking more than 500 known hazardous wastes on this list.

### RCRA Implementation Study Sets Focus for the 1990s

- ✓ **Establish and communicate clear priorities**
- ✓ **Balance prevention and cleanup efforts**
- ✓ **Develop clear and concise regulations**
- ✓ **Emphasize waste minimization**
- ✓ **Support compliance and enforcement activities**
- ✓ **Develop better environmental management data**
- ✓ **Accelerate scientific and technological development**

### Safer Municipal Solid Waste Landfills

New federal standards were established for municipal solid waste landfills (MSWLFs) in October 1991. These regulations establish a protective, practical system for disposing of the nation's trash. They specify design, operating, and closure standards; restrict landfill locations; and require liners and ground-water monitoring. State and tribal regulatory agencies provide the primary oversight and issue permits, according to the federal criteria. Today, 40 states and one territory have approved MSWLF permit programs.

#### 1991 MSWLF Criteria

- ✓ **Maximize landfill life by encouraging source reduction and recycling**
- ✓ **Protect ground water from contamination**
- ✓ **Specify design and operating practices that protect human health**
- ✓ **Protect future generations with strict conditions for landfill closure**

## Recycling is Working

### Alternate Disposal Program Increases Recycling

EPA's Pay-As-You-Throw program (also known as unit pricing or variable-rate pricing) is a household trash disposal system that charges residents based on the amount of solid waste that they throw away. Residents in communities with Pay-As-You-Throw programs have direct economic incentives to produce less waste and recycle more.

Traditionally, residents pay for waste collection through property taxes or a fixed fee, regardless of how much (or how little) trash they generate. Pay-As-You-Throw breaks with tradition by treating trash services just like utilities. Households pay a variable rate depending on the amount of service they use.

Fort Collins, Colorado found that its Pay-As-You-Throw system significantly boosted household recycling efforts and helped the city reach its recycling goals. By July 1996, recycling had increased to 79 percent participation in single-family and duplex households, up from 53.5 percent the previous year. The program has been so successful that the residents of Fort Collins looked for opportunities to increase their recycling, by adding new materials to their recyclables.

### Partnerships Lead to Newspaper Reuse, New Jobs

In 1989, EPA joined the Northeast Recycling Council (NERC) in an effort to get the newsprint industry and newspaper publishers to recycle old newspapers. NERC worked with 10 northeastern states, newspaper publishers, and newsprint paper mills, and came up with an agreement to increase the production of recycled-content newsprint. Shortly after, the demand for old newspapers and magazines in the Northeast and throughout the United States increased. In fact, the average recycled content in newsprint more than doubled in the United States. Between 1990 and 1997, it jumped from 20 to 45 percent. Today, 27 states have agreements with newspaper publishers to invest in newsprint with recycled content.

Besides helping to preserve our natural resources, EPA's partnership with NERC is also an example of the Jobs Through Recycling (JTR) program, which benefits both the environment and the economy. Through JTR, EPA enhances business development, technical assistance, and financing efforts for recycling-related business in local communities. Since its inception, JTR has helped create more than 8,500 jobs, generated \$640.5 million in capital investment, created 15.3 millions tons of capacity, and used 13.9 million tons of recovered materials.

### Recycling Is Working Across America

Recycling offers widespread benefits to the U.S. economy. In 2001, the U.S. recycling and reuse industry supported more than 56,000 recycling and reuse establishments that grossed over \$236 billion in annual revenue. The industry employed over 1.1 million people with payrolls of nearly \$37 billion.

Besides being good for the economy, recycling obviously is good for the environment. When a recycled product is manufactured, less energy is used than when virgin or raw materials are used to make the same product. For example, annual energy savings from recycling aluminum cans are nearly 186 million BTUs per ton; plastics saves about 22 million BTUs per ton a year; and recycling steel cans, paper, and glass saves around 52 million BTUs per ton annually.

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## **Federal Procurement Guidelines**

**R***einforcing the federal role in resource recovery, EPA designated products containing recovered materials and made recommendations for buying these products. On October 20, 1993, a Presidential Executive Order called for an expedited process to increase the federal government's use of recycled-content products. Consequently, the Guidelines currently designate 54 products containing recycled content.*

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### **1994 Waste Minimization National Plan**

- ✓ **Aims to reduce by half, the most problematic chemicals in hazardous wastes by 2005**
- ✓ **Emphasizes source reduction and environmentally sound recycling over treatment and disposal**
- ✓ **Prevents transfers of chemical releases from one medium to another, such as air to water or land to water**

## **Creating More Partnerships**

A shift to fewer regulatory and more voluntary actions occurred in the 1990s. An outgrowth of this philosophy was EPA's **WasteWise** program, which was launched in 1994. WasteWise recruits and cultivates partners to reduce waste. Partners range from small businesses, tribes, governments, and universities, to Fortune 500 corporations. WasteWise now has nearly 1,200 partners who are committed to cutting costs and conserving resources by reducing waste.

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**W***asteWise partners eliminated 35 million tons of municipal solid waste*

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Throughout the decade, partnerships with Native American tribes were expanded, and other partnerships have enhanced tribes' capabilities to develop and implement their own hazardous and solid waste management programs. The Agency also is working closely with tribes to close open dumps in Indian country. EPA is providing technical and financial assistance not only to close those dumps, but also to establish and manage sustainable alternatives to them.

## **Industrial Waste Management**

The Agency increasingly turned its attention to the largest component of the U.S. waste stream—industrial waste. Industrial waste is mainly nonhazardous waste that comes from 12,000 manufacturing facilities that generate 7.6 billion tons of this waste a year.

EPA is collaborating with key stakeholders to design a safe and practical waste management system for industrial waste. The culmination of this effort is voluntary guidance designed to assist facility managers, state and tribal environmental managers, and the public to evaluate and choose protective practices for managing industrial waste. Currently, 30 states run industrial waste management programs.

## **Tight Hazardous Waste Combustion Standards**

Throughout the decade, EPA reinforced hazardous waste combustion standards and reinforced waste minimization objectives.

- Strict emission standards were imposed on boilers and industrial furnaces (BIFs) burning hazardous waste.
- In 1993, EPA released the Hazardous Waste Minimization and Combustion Strategy. The Strategy aimed to achieve greater reductions in hazardous waste generation and, to improve the safety and reliability of incinerators and BIFs.

## Environmental Commitments Make a Difference

### New Partnerships Encourage Faster Brownfields Cleanup

"Brownfields" are abandoned, idle, or underused industrial and commercial properties where expansion or redevelopment is complicated by real or perceived environmental contamination. About 600,000 brownfield sites are estimated to be around the country.

EPA launched several efforts to encourage and expedite the cleanup of brownfield sites and move these lands into productive use. Since March 2000, EPA has selected nine RCRA brownfield prevention pilot projects. The selected pilots proposed a variety of innovative solutions, ranging from increasing community involvement in future land-use decision-making to using legal authorities to deal with bankrupt sites.

The nine RCRA brownfield prevention pilot projects are: CBS/Viacom (Bridgeport, CT); Bethlehem Steel Corporation (Lackawanna, NY); PECO (Chester, PA); Blue Valley Redevelopment (Kansas City, MO); Pharmacia & Upjohn Company (North Haven, CT); Union Carbide Caribe (Guayanilla, Puerto Rico); Safety-Kleen (Muskegon Heights, MI); BP Refinery (Wood River, IL); and Milt Adams (Denver, CO).

### Doing It Right the First Time

In 1991, workers at the Ford Motor Company's plant in Ypsilanti, Michigan decided they wanted to help rid the environment of hazardous waste. Plant engineers accomplished this mission by replacing toxic cleaning and drawing chemicals with a water-based compound. The change eliminated 30,000 pounds of trichloroethylene (TCE) and 5,000 pounds of methylene chloride releases annually. The plant also stopped disposing of liquid hazardous wastes from the plant's dip tank. When commenting on their success, Ford officials stressed the importance of implementing waste prevention early in the process.

### Partnering to Reduce Waste

Seattle University was named EPA's WasteWise Partner of the Year 2001. In the university/college category, the award recognizes the efforts of the University's Environmental Services Office and the campus community to minimize waste (including recycling paper and plastic products and reusing products, such as furniture and office equipment) that may otherwise go into a landfill. The University recycled more than 500 tons of material, saving nearly \$25,000 in disposal costs.

## RCRA Reinvention Efforts

- ✓ **Risk-based regulations that match the levels of risk posed by specific hazardous wastes**
- ✓ **Regulations that are easily understood to facilitate compliance and foster community relations**
- ✓ **Identify and reduce record-keeping burdens**

## Reinventing the RCRA Program

EPA continually looks for ways to improve RCRA regulations. RCRA's regulatory process evolved and changed with the acquisition of new information and technological advances. The current RCRA philosophy is to provide flexibility in achieving desired regulatory results; to make sure information and decision-making are shared with everyone involved; to create environmentally sound incentives for achieving regulatory compliance; and to strive for a better interface with other environmental laws and regulations. Some examples of RCRA's reinvention efforts:

- encourage safe management and recycling of common products, such as batteries and pesticides, that are hazardous when they're discarded;
- make cleanups faster by tailoring regulations to site-specific situations;
- eliminate duplicate regulatory controls on radioactive hazardous waste; and
- change paperwork requirements from multiple notifications to a single notification.

## Public Involvement

The public plays a prominent and important role in the RCRA program. Few environmental issues are of more concern to the public than waste management in their communities. Therefore, EPA requires waste management facilities to involve the public and the local community throughout the RCRA permitting process. Any time during the process, the public can submit comments and request public hearings to clarify information or voice objections.



RCRA guarantees that the public has a role in facility clean-up processes. Under corrective action, for example, the local community can access a facility's inspection information, and participate in remedial decisions and processes.

Environmental justice is a priority in RCRA waste management. EPA's goal is to ensure that all Americans are protected from environmental pollution, and that minorities do not bear disproportionate effects of that pollution. RCRA requires full public participation in hazardous waste permits. EPA works cooperatively with tribes to control open dumps in Indian Country, and it works closely with minority communities to develop guidance in areas of special interest. EPA has issued guidance for the management of municipal waste transfer stations and for siting new hazardous waste facilities.

EPA's commitment to providing public access under RCRA is further evidenced through its outreach initiatives to tribal, Hispanic, and other minority communities, and through widespread distribution of products in print and on the Internet.

## Creating Clean-up Goals and Corrective Action Reforms

Facilities managing hazardous waste must clean up contamination resulting from past mismanagement. Cleanup requirements under RCRA are managed through the Corrective Action Program. Throughout the 1990s and today, EPA has focused on establishing priorities to accelerate cleanups. EPA is focusing corrective action resources on preventing human exposure to, and migration of, contaminated ground water at more than 1,700 facilities where early cleanup progress is appropriate. EPA also has launched corrective action reform efforts aimed at accelerating cleanups by promoting greater flexibility; making regulatory changes to remove disincentives to cleanups; focusing on near-term goals for cleanups; and stressing results-based approaches, instead of process-based systems. As a result of these reforms, EPA and the states now have brought hundreds of RCRA facilities under control. Nearly 40 percent of the RCRA corrective action facilities have either completed or made significant progress in their cleanups.

### RCRA Cleanup Reforms Focus on Results

- ✓ **Conduct faster, more focused, flexible cleanups**
- ✓ **Pilot innovative approaches to cleanups**
- ✓ **Connect communities and capitalize on redevelopment potentials**

## *At 25...*

Since RCRA was enacted in 1976, great strides have been made in keeping our environment safe from the waste we produce. A broad range of hazardous waste streams have been identified; treatment standards have been developed and refined as new technology is developed. Systems and processes have been polished and streamlined to keep requirements flexible, but safe. Hazardous waste generation has been reduced from nearly 300 million tons to around 40 million tons. All but two states are authorized to operate their own hazardous waste programs, and more than 1,000 facilities are in the RCRA operating permit baseline. Nationwide recycling and solid waste reduction efforts have kept about 62 million tons of trash a year from being disposed of—keeping that material in use and out of landfills. These waste reduction efforts resulted in a national recycling rate of 28 percent.

RCRA works—and it has worked for 25 years—to protect human health and the environment by reducing risk from waste. It remains effective because it is intricately connected to our American way of life, with our heavy reliance on industry and technology. Hazardous and solid waste management standards are continually being refined and updated in response to local needs, new research, and new technologies. For 25 years, RCRA has responded to environmental challenges on all fronts—air, water, and land—by pursuing and promoting partnerships with states, tribes, industry, and the public.



# The Challenge Ahead

*We have numerous environmental challenges ahead of us. Each provides an opportunity to renew our commitment to increased cooperation, and the chance to provide our children and grandchildren with a cleaner and safer place to raise a family. I...am confident that together we can raise the bar of environmental achievement- and clear it by a wide margin.*

—EPA Administrator Christine Todd Whitman

In these relatively short 25 years, EPA has made significant progress in safe waste management. The result: a cleaner environment. Looking ahead to the next decade and beyond, America will still need to manage wastes, but probably differently.

EPA's role in implementing the RCRA

program is expected to change. While strong oversight of regulatory provisions will continue, EPA wants to champion voluntary pollution prevention activities that go beyond compliance. The Agency will continue to explore more proactive tools, including partnerships with industry and government, to set goals for pollution prevention, as well as to help the nation to move toward these goals.

The next decade will require much-needed cooperation between EPA and its partners. The Agency must continue to work side-by-side with other federal agencies, states, tribes, industry, and the public in achieving safe waste management. The challenges facing the RCRA program in the new millennium are great. Technological changes, population growth, economic expansion, and national security concerns are just a few.

At the same time, there is plenty of room to refine, improve, and build on the success already achieved. Better protection of human health and the environment is guaranteed by partnering with states, tribes, industry, and the public in waste prevention, safe waste management, and cleanups.

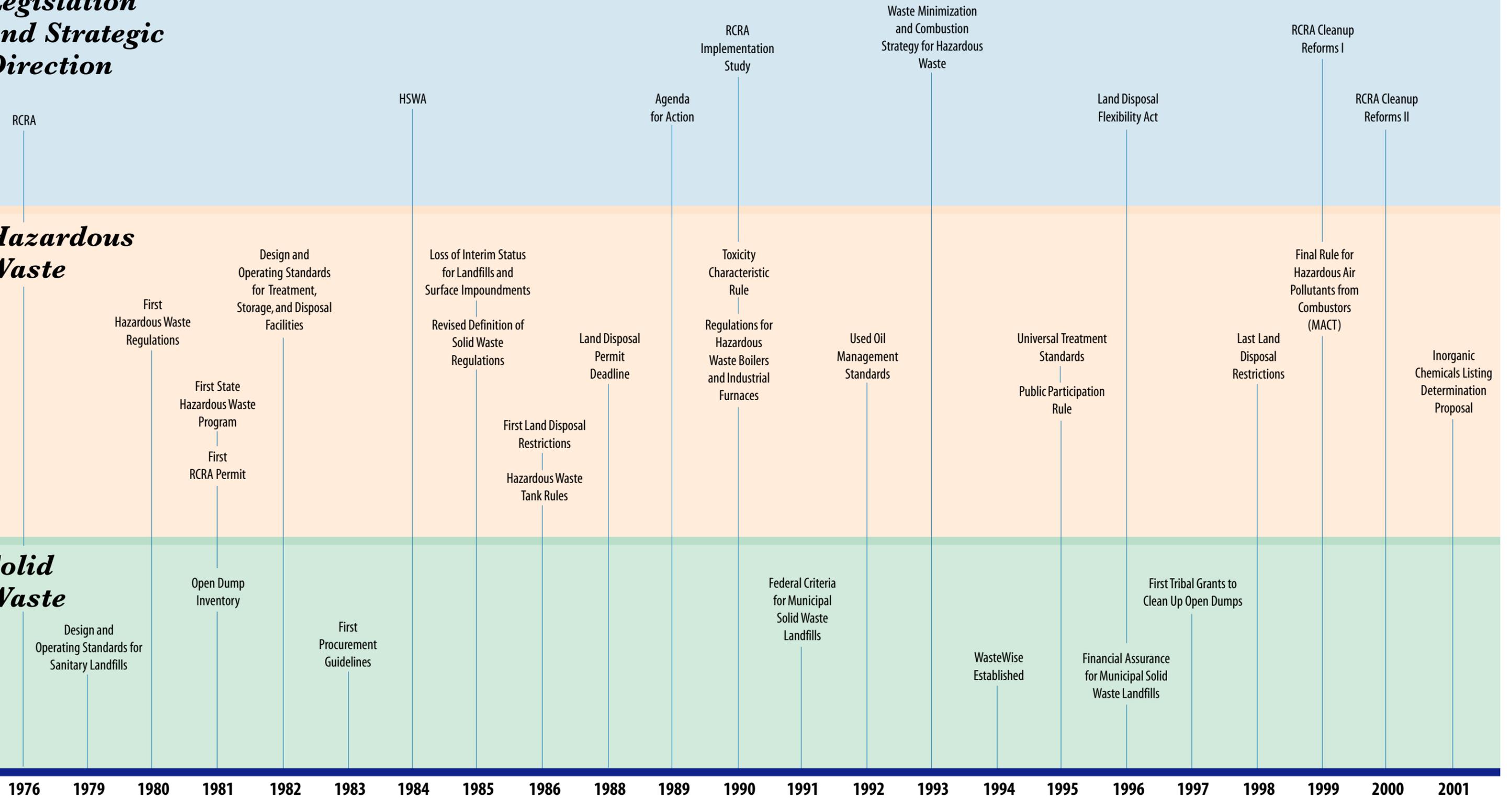


# 25 Years: Preserving, Preventing, Protecting

## Legislation and Strategic Direction

## Hazardous Waste

## Solid Waste



Solid Waste and Emergency Response  
(5305W)

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