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EPA

Pollution Prevention News

Inside:

2 Reports from EPA

3 1990 Success Stories

4 Aiming for Zero

5 Legislation

6 Surveys; Looking Ahead

7 1991 Calendar

8 Small Business Awards

To be added to our mailing list, please write:
Pollution Prevention News
U.S. EPA
401 M Street SW (PM-219)
Washington, DC 20460

Editorial Staff:
Priscilla Flattery, Editor
Gilah Langner
Suzanne Harris
Judith K. Rosenthal

Pollution Prevention Legislation Passed

Late in October, Congress passed the Pollution Prevention Act of 1990, calling pollution prevention a "national objective" and declaring that "source reduction is fundamentally different and more desirable than waste management and pollution control." The Act establishes the pollution prevention hierarchy as national policy, stating that pollution should be prevented or reduced at the source wherever feasible, while pollution that cannot be prevented should be recycled in an environmentally safe manner. In the absence of feasible prevention or recycling opportunities, pollution should be treated; disposal or other release into the environment should be used as the last resort.

Among other provisions, the Pollution Prevention Act directs EPA to facilitate the adoption of source reduction techniques by businesses and other federal agencies, to establish standard methods of measurement for source reduction, to review regulations to determine their effect on source reduction, and to investigate opportunities to use federal procurement to encourage source reduction. The Act also establishes an $8 million state grant program to promote source reduction by businesses, with a 50 percent state match requirement.

Source reduction is defined in the law to mean any practice which reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment or disposal; and

continued on page 5

Editor's Corner

Where We've Been, What's Ahead

John Atcheson
Office of Pollution Prevention,
U.S. EPA

Twenty years ago, as the nation set about establishing the Environmental Protection Agency, there was widespread agreement on what the environmental agenda should be. There was a suite of obvious and acute problems that needed to be addressed, including discharges of untreated municipal and industrial wastes, releases of millions of tons of particulates and sulfur into the atmosphere unconstrained by any treatment, and automobiles that emitted ten times more pollution per mile of travel than today's cars.

A decade later, EPA had programs in place which were beginning to deal with these obvious threats. At the same time, improved methods of detection and better toxicological capabilities were showing toxics to be very nearly ubiquitous. Each new scientific and technological advancement seemed only to lengthen the environmental agenda. Although subtle or invisible, the concerns of the 1980s were no less serious than the visible threats of the 1970s. Risk assessment and risk management were developed as tools to help allocate resources to respond to the many threats and needs for attention.

What lies ahead? The next twenty years are likely to present environmental challenges radically different from the last twenty, for several reasons. First, we are

continued on page 8

Reports from EPA

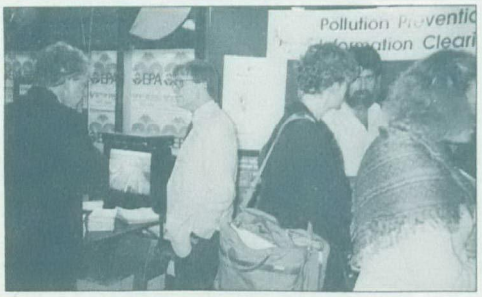
Three Model Communities Planned

As part of a cooperative agreement between EPA and the Department of Defense signed last April to promote the environmental cleanup of military facilities along the Chesapeake Bay, three facilities in the Norfolk, VA area have been selected to participate in a joint initiative to develop a multi-media pollution prevention "model community" plan. Langley Air Force Base, Fort Eustis (Army), and Norfolk Naval Base will participate in the three to five-year project that will address all wastes that enter the air, land, and water.

The plan will include all sectors of the base community — from using alternative fuels in fleet vehicles to enhancing existing recycling programs. The project will give EPA and DOD the opportunity to work together as federal agencies to identify and implement multi-media prevention possibilities, and to transfer them to other federal facilities as well as states and local communities.

The project is intended to complement DOD's Pollution Prevention Directive of July 1989, which directed the full incorporation of pollution prevention concepts into DOD activities. The project also forms part of a larger EPA initiative to fund pollution prevention approaches for other model community programs, including university-based programs at the Tufts University Center of Environmental Management and the Center for Hazardous Materials Research at University of Pittsburgh; and regional programs for the Great Lakes and the Milwaukee River Basin.

For more information, contact Jim Edward at EPA, 202-245-4164.



Displays and presentations at EPA's 20th Anniversary Open House

ORD Guidance Manuals Completed

EPA's Risk Reduction Engineering Laboratory and the Center for Environmental Research Information have published seven pollution prevention guidance manuals, developed in cooperation with the California Department of Health Services. The manuals review operational technologies, identify techniques that facilitate waste reduction, and provide a set of self-audit checklists to assist in setting up a waste reduction program. The manuals supplement EPA's generic waste reduction manual, *Waste Minimization Opportunity Assessment Manual.*

To order any of the following manuals, call the Pollution Prevention Information Clearinghouse at 800-242-9346 or 202-382-3000.

- Pesticide Formulating Industry (EPA/625/7-90/004)
- Paint Manufacturing Industry (EPA/625/7-90/005)
- Fabricated Metal Products Industry (EPA/625/7-90/006)
- Printed Circuit Board Manufacturing Industry (EPA/625/7-90/007)
- Commercial Printing Industry (EPA/625/7-90/008)
- Selected Hospital Waste Streams (EPA/625/7-90/009)
- Research and Educational Institutions (EPA/625/7-90/010).

Another 11 manuals are scheduled for publication in 1991 on the following topics: photographic laboratories; fiberglass reinforced and composite plastics; marine maintenance and repair; pharmaceutical preparation; auto body repair; automotive shops and repair; thermal metal working; building construction and trade; non-agricultural pesticide use; precious metal reclamation; and mechanical equipment repair.

EPA Administrators, past and present, participate in a panel discussion on EPA's 20th Anniversary, December 3, 1990. From left to right, William Reilly, Lee Thomas, Gus Speth, Julie Belaga, Russell Train and William Ruckelshaus.

Green Lights

As a first step in encourging energy productivity and pollution prevention, EPA has initiated the "Green Lights" program, an aggressive, non-regulatory effort to reach corporate decision-makers with credible information on new lighting system technologies and the economic and environmental benefits of efficient lighting. Current projections indicate that improved technologies already on the market can slash the electricity used for lighting by more than half. "Green lighting" costs less over its life-cycle, offers better quality lighting, and makes a significant dent in pollution and global warming.

During the fall, EPA made over 100 presentations on Green Lights to corporate audiences and found substantial willingness on the part of industry to commit to investments in cost-effective lighting technology. In 1991, EPA will be extending its presentations to over 200 additional corporations and will begin "mass marketing" Green Lights to businesses, institutions, and consumers via paid advertising, major media events, and consumer education.

As part of the program, EPA also will be establishing a product testing and verification procedure, compiling a database of qualified contractors, and conducting other activities to assist in retrofitting and planning for efficient lighting. For further information, contact Bob Kwartin, Global Change Division, 202-382-4992.

1990 Success Stories

Dow Chemical's WRAP Winners

Each year Dow Chemical Company recognizes outstanding waste reduction projects at each of its U.S. divisions under the WRAP program (Waste Reduction Always Pays). This year's six Outstanding Achievement Awards represent about $7 million of capital investment. Two award winners are described here:

Dow's **Louisiana Division in Plaquemine**, LA recently installed a barge vent recovery system that captures hydrocarbon vapors released when liquid hydrocarbon products are loaded into low pressure barges. The hydrocarbons are separated from nitrogen vapors and returned to the production process for reuse. The vapor recovery unit operates at a recovery rate greater than 98 percent, translating into more than 100,000 pounds of annual hydrocarbon emissions that no longer go into the atmosphere and a lowered potential personnel exposure to the hydrocarbon vapors.

Employees at the **Chlorinated Ethane Products Department in Texas** modified the plant's production process to eliminate the use of excess ethylene, which contaminated a hydrogen chloride stream during production. Through the use of some idle equipment, the plant used the pure hydrogen chloride to produce a high quality hydrochloric acid for other Dow facilities to use. The plant also improved the separation of a by-product vinylidene chloride. The combined waste reduction efforts resulted in $2.6 million in annual savings. Contact: Dan Fellner at 517-636-5765.

Chlorine Phased Out at Madison Paper

Madison Paper Industries in Maine has phased out use of chlorine in its industrial processes. The chlorine had been used to purify water from the Kennebec River for use in pulp and paper manufacturing. According to CEO Jack E. Chinn, "Our engineers determined that we could purify the water well enough for our use by using sodium hypochlorite, which can be described as industrial strength Clorox."

Although sodium hypochlorite still poses some risk to employees at the mill, it represents a marked improvement in terms of both worker safety and the environment over the liquid and gaseous forms of pure chlorine. Chlorine was given top priority for replacement because it was the most toxic material used in the company's operations. MPI is now in the process of substituting non-caustic cleaners for those containing potassium hydroxide. Contact: Hank Magnuson at 207-696-3307.

Discarded toilets are recycled into roadbase on Calle Real, Santa Barbara

From Toilets to Roadbase in Santa Barbara

Government officials in Santa Barbara are happy to tell you that their road system is going down the toilet.

To encourage water conservation, the city and some surrounding jurisdictions launched a creative rebate program. The city would just about buy you a water-saving, low-flow toilet (rebating $80 of the $85 cost) if you would pay to have it installed.

For a while, area residents exchanged 200 to 300 toilets each month under the program, but a drastic increase in the water rate in May resulted in exchanges of 600 to 2,600 toilets per month — with entire apartment buildings and hotels converting all at once.

There was just one problem: the county landfill was being inundated with old toilets. Unlike glass, porcelain cannot be melted down. County officials hit on the idea of grinding up the toilets and using them for roadbase, the rocky layer that goes under the concrete or asphalt when a road is built. After approaching several grinding companies, County staff found S.P. Milling (a division of Beazer West) and

continued on page 4

At McDonald's. . .

Big Macs and McDLT's no longer come in foam "clam-shells," thanks to the work of a joint task force formed by the McDonald's Corporation and the Environmental Defense Fund. McDonald's has announced it is phasing out all foam packaging in its 11,400 restaurants, beginning with the sandwich containers that account for nearly 75 percent of its foam use.

"We've been testing packaging options, and we're now confident we have found some good alternatives that address our customers' [environmental] concerns while maintaining our strict quality standards," said Ed Rensi, president of McDonald's USA.

"The company will continue to test for the best alternatives for the remaining packaging, and will phase them into our restaurants as they become available," added Jim Cantalupo, president of McDonald's International.

In phasing out the foam clamshells, McDonald's joins rival fast-food chains Wendy's and Burger King, which already use other materials to wrap their sandwiches. The Hardees chain, which has purchased Roy Rogers, continues to use foam clamshells.

The EDF-McDonald's joint task force is working on other efforts in source reduction, reuse, recycling and composting for the restaurants.

Aiming for Zero

Monsanto

"It is our pledge to reduce all toxic and hazardous releases and emissions, working toward an ultimate goal of zero effect. It may take time, but we will not be satisfied with anything else."

So begins the first of seven pledges that comprise the Monsanto Pledge announced by Monsanto CEO Dick Mahoney earlier this year. Pledge No. 7 commits the company to search for technologies that will reduce or eliminate waste, with top priority being given to not generating waste in the first place. Other pledges — including ones relating to sustainable agriculture, ground-water safety, and halting deforestation — define a vision of "corporate environmentalism" that goes beyond compliance with regulatory standards to embrace a notion of active stewardship of environmental resources.

Corporate executive vice president Nicholas Reding noted in a recent speech that there is nothing simple about such a shift in corporate culture, and that the transition period is often difficult and replete with inconsistencies. Corporate environmentalism and voluntary initiatives cost money, Reding notes, "and our business managers logically ask why they should be non-competitive — when they are already in compliance."

> *"Ultimately, environmental stewardship means you will have more efficient processes, vastly reduced disposal costs, and broader community support."*
>
> — Nicholas Reding, Monsanto

Reding's response: "If you're in business for the long term, corporate environmentalism makes excellent business sense. Ultimately, [it] means you will have more efficient processes, vastly reduced disposal costs, and broader community support." In 1988, Monsanto voluntarily announced a goal to reduce its toxic air emissions by 90 percent by the end of 1992. Earlier this year, Monsanto's chemical company reassigned 50 research staff to work strictly upon waste elimination, elevating the status of such research within the company's corporate culture.

Numerous Monsanto projects are showing the fruits of the company's approach. The Marshalltown, Iowa facility of Monsanto's Fisher Controls International received one of five 1990 Iowa Energy Leadership Awards for two innovations — regular mopping of the floors to reduce use of waste oil absorbents and installation of a coolant filtration system which helped reduce the disposal of waste coolants by 90 percent. Fisher set a zero discharge goal in 1988, and has since reduced process water consumption by 50 percent, non-hazardous waste by 50 percent, and hazardous waste by 90 percent. By 1992, the Marshalltown plant expects to eliminate all hazardous wastes, which previously have been landfilled.

General Dynamics

Zero emissions has been the policy and long-term goal at General Dynamics' nine divisions and several subsidiaries since 1984. The initial aim was to eliminate manifested waste from each General Dynamics facility. Since then, General Dynamics has recorded a reduction of over 160 million pounds of hazardous waste while sales increased from $7.3 billion to $9.5 billion. The company produces defense systems and owns businesses in construction, aviation, and coal mining.

At the company's Fort Worth Division, a 70 percent reduction in hazardous waste was achieved between 1985 and 1990. An example of a successfully implemented project is the use of new sorbent materials. Hydrocarbon and oil residues, drips, leaks, and spills encountered during machining and metal working operations are controlled using organic materials that have a much higher sorptive capacity. Housekeeping is imporved and labor is reduced, while wastes can be incorporated as industrial furnace fuels. Cost savings are projected to run $140,000 annually.

Fort Worth's Environmental Resources Management Task Group reconvened in 1989 to establish a new five-year air, water, and waste emissions reduction plan. Several projects currently being implemented are expected to result in 95-100% emissions reductions. They include:

- Aluminum ion vapor deposition — replacing cadmium plating used for corrosion protection of steel;
- Vapor degreaser replacement — replacing trichloroethylene vapor degreasers with hot aqueous immersion cleaners;
- Chromium process solution recycle — using electrodialysis and ion exchange, chromium from metal finishing solutions and associated rinsewaters is recovered and recycled, and rinsewaters are reused;
- Low VOC general purpose cleaner — this patent-pending cleaner, when combined with a waste management system, replaces a CFC 113-hydrocarbon blend, resulting in 100% reduction of CFC 113 emissions and over 60% reduction in VOC emissions.

For more information, contact Bill Rosenthal, 817-777-6919.

Santa Barbara

continued from page 3

conducted a trial run. "It turns out it makes excellent roadbase," said Wilson Hubbell, manager of solid waste operations for the Santa Barbara County Public Works Department.

The city and county have scored a pollution prevention double-play: the city has achieved its desired 45 percent reduction in water use, while the toilets are finding a useful home under roads, instead of inside a landfill.

Legislation

At Last, a New Clean Air Act

The extensive revisions of the nation's air pollution law passed in the closing days of the 101st Congress have produced the most comprehensive environmental statute ever enacted. Running at about 750 pages, the new Clean Air Act incorporates innovative strategies and a preventive approach to tackle some of the most serious air pollution problems, including acid rain, urban smog, stratospheric ozone depletion, and toxic air emissions.

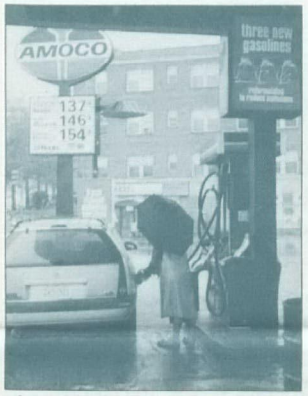
Key provisions of the Amendments include:

Reduced emissions of sulfur dioxide (SO_2) and nitrogen oxides, the components of acid rain. By 2,000, the Act will result in a permanent 10 million ton reduction in SO_2 emissions from 1980 levels. Electric utilities, whose burning of fossil fuels produces most of the SO_2 emissions, will be allowed to buy and sell credits to release certain amounts of SO_2.

Tighter pollution standards for emissions from automobiles and trucks. Beginning in model year 1994, tailpipe emissions of hydrocarbons, carbon monoxide, and nitrogen oxides will be reduced.

Improved fuel quality. The Act's requirements include sale of cleaner burning reformulated gasoline in the most smog-ridden cities beginning in 1995.

Phase-out of substances that deplete stratospheric ozone. Production of chlorofluorocarbons (CFCs) and halons will be phased out beginning in two years, and EPA will be required to ban the use of unsafe substitutes.



Amoco test markets reformulated gasoline.

Reduced emissions of toxic air pollutants. EPA will be required to prepare a list of industries that emit any of 189 designated pollutants — many of them carcinogens, mutagens, or reproductive toxins — in significant amounts. Emissions standards must be issued for each industry category based on the "Maximum Achievable Control Technology" (MACT) for that industry.

"The new provisions will encourage source reduction and changes in production processes," said David Doniger, a lawyer with the Natural Resources Defense Council. "Often these measures will be less expensive and more effective than simply using 'add-on' pollution controls." Utilities are expected to substitute low sulfur coal and natural gas for current energy sources, and many other industries are likely to make changes in their products or processes to comply with the MACT emission standards.

An important characteristic of the Act is that it relies more on incentives and less on command-and-control strategies than earlier legislation. The system of tradable allowances for SO_2 emissions, for example, gives electric utilities an incentive to go beyond minimum federal standards. "There are incentives throughout the bill for companies to prevent pollution and receive credit for being in compliance," said Tim Mohin of EPA's Office of Air Quality Planning and Standards.

The new law will bring under EPA's authority thousands of businesses that have never before been subject to government restrictions, including dry cleaners, printing shops, and bakeries. Generators of pollution will be required to obtain operating permits like those required by other environmental programs. The permits will consolidate in one document all of the federal and state air pollution control requirements that apply to a particular generator.

The Act also requires new research initiatives including development of technologies and strategies for air pollution prevention from stationary and area sources and studies of alternative fuels.

Oil Spill Legislation

In early August, Congress passed a comprehensive oil spill law that will require double hulls on all new oil tankers and boost pollution liability eightfold for large vessels. Legislative action was prompted both by the frequency of oil spills in the last two years and the oil industry's responses to the spills, particularly in the case of the Exxon Valdez disaster. The double-hull provisions of the new law were opposed by shippers, but the National Transportation Safety Board estimates that the Exxon Valdez spill would have been almost negligible if the ship had had a double bottom. Under the Act, single-hull tankers will be phased out by 2010. Many tankers are currently reaching the end of their design life and the U.S. law should have a marked effect on a new generation of tanker construction. Finland is currently the only other country with a national policy favoring double hulls.

Pollution Prevention Act

from page 1

which reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

Under the Act, facilities required to report releases to EPA for the Toxic Release Inventory (TRI) must also now provide information on pollution prevention and recycling, including the quantities of each toxic chemical entering the waste stream and the percentage change from the previous year, the quantities recycled and percentage change from the previous year, source reduction practices, and changes in production from the previous year.

EPA's Office of Pollution Prevention will be providing supplemental guidance concerning pollution prevention grants for states that incorporate the new Act's requirements. Grants already awarded are not affected by the legislation.

Consumer Environmental Trend Continuing

But consumer behavior and knowledge often fail to match concern

A survey conducted this past summer by the Roper Organization shows that Americans are more concerned than ever about the environment . At the same time, the survey, sponsored by Johnson and Johnson adds to the evidence that most Americans know very little about effective ways of preventing pollution and conserving energy. This suggests that the public may be receptive to learning more, but the environmental message must be made clearer.

The Roper survey shows, for example, that Americans think the four biggest contributors to the solid wastestream are: disposable diapers, plastic packaging, plastic bottles, and aerosol containers. In fact, these amount to about 10 percent of the material in U.S. landfills. Conversely, the survey shows that Americans think that four of the *smallest* contributors to solid waste are wastepaper, paper plates and napkins, food scraps, and yard waste, which in fact make up more than 46 percent of the solid wastestream.

In another study conducted in March, the National Energy Education Development Project in Reston, Va. surveyed 25,000 students and found that two-thirds were unaware that heating and cooling homes uses more energy than lighting, refrigeration, and heating water. Other recent reports say that most people tend to overestimate the energy savings of immediate actions, such as turning off lights, and underestimate the value of longer-term actions, such as insulating, weatherstripping, and investing in energy-saving compact fluorescent bulbs.

According to Roper, the proportion of Americans who say that major efforts are needed to improve the environment has gone from 56 percent in 1987 to 78 percent in 1990, the largest increase in concern by far for any of 12 national problems surveyed.

A nationwide study of actual consumer purchasing behavior released in October by Abt Associates in Cambridge, MA found that 51 percent of Americans 18 or older had made a decision to purchase or boycott a product based on environmental concerns in the previous six months. Again, however, consumers may be relying on questionable or partial information. Many participants reported making purchases based on claims of biodegradability or the lack of aerosol content in the products; few participants were aware of energy efficiency as an environmental reason for purchasing decisions.

Looking Ahead . . .

Pledges, plans, and programs for source reductions in the coming years

Plans for voluntary reductions in toxic air emissions were announced in September following 10 months of negotiations between EPA and nine major companies. The reductions, totaling almost 83 percent of recent emission levels or nearly 9.5 million pounds annually, are expected to be fully implemented by December 1993. Participating companies are: BASF, Dow Chemical, Exxon, General Electric, Goodyear, Occidental, Reichhold, Texaco, and Texas Petrochemical. The reductions cover 40 plants in 14 states, and address six chemicals: butadiene, ethylene oxide, carbon tetrachloride, methylene chloride, chloroform, and ethylene dichloride. For more information, contact Dave Ryan at 202-382-2981 or James Weigold at 919-541-5642.

In a Pollution Prevention Partnership formed in June, industry, government, and environmentalists in Colorado are targeting ways to reduce and eliminate trichloroethane, an industrial cleaning solvent that is a suspected carcinogen and that has been linked to ozone depletion. The partnership includes EPA Region 8, the Colorado Department of Health, Adolph Coors Co., Martin Marietta Corp., Hewlett-Packard Co., Public Service Company of Colorado, the Colorado Public Interest Research Group, and the League of Women Voters.

The American Institute of Architects is developing an Environmental Resource Guide to help its 55,000 members evaluate the environmental consequences of their design decisions. "Every choice an architect makes, from specifying building materials to window placement, affects the environment," according to Robert Berkebile, director of the project. Intended as a comprehensive, easy-to-use reference manual for architects, engineers, and other building and design professionals, the guide will contain information on site issues, energy conservation, and materials included in the 16 Construction Specification Institute categories. The entire guide is expected to take several years to complete. Contact: Doug Greenwood, 202-626-7463.

As recycling programs take off around the country, recycling goals set by EPA and other organizations appear more likely to be achieved. EPA's municipal solid waste strategy targets 25 percent of municipal solid waste for recycling and reduction by 1992. In a draft update to the *Agenda for Action*, EPA has proposed a 40 percent recycling goal by 1996 and a goal of 10 percent source reduction by 2000. EPA's latest study of the municipal waste stream shows that recycling stood at 13 percent in 1988, up from 10 percent in 1986. Cities like Seattle, WA are setting the standard for recycling. Seattle reports an overall municipal solid waste recycling rate of 36 percent (residential plus commercial), according to a recent study by the Institute for Local Self-Reliance entitled *Beyond 40 Percent*. Earlier this year, the American Paper Institute set a goal for the paper industry of achieving a 40 percent recycling rate by 1995.

Calendar of Events

Title	Sponsor	Date/Location	Contact
Haz. Waste Management & Pollution Prevention Course	Applied Environmental Technologies Corp.	Jan. 9-10/Rochester, NY Feb. 6-7/Grand Rapids, MI Mar. 6-7/Burlington, MA	Kimberly Moore 800-926-1AET
Future Directions for Pollution Prevention R & D	Engineering Foundation, AIChE	Jan. 27- Feb. 1 Santa Barbara, CA	Charles Freiman 212-705-7835
AESF/EPA Environmental Control Conference	American Electroplaters & Surface Finishers, EPA	Jan. 28-Feb. 1 Orlando, FL	AESF Educ. Serv. 407-281-6441
Intl. Seminar on Plastic Waste Minimization/Source Reduction	Ansum Enterprises	Jan. 28-30 Deerfield Beach, FL	S.P. Wolsky 407-391-3544
First Annual Green Marketing Summit	Advertising Age, Good Housekeeping, GSD&M Advert.	Jan. 29 New York, NY	Maureen Macke 312-245-9011
CERMA National Symposia (Center for Earth Resource Management Applications)	Recycled Glass: Recycled Paper:	Feb. 21-22/Los Angeles, CA Apr. 23-24/St. Louis, MO	Ellen Kopelman 703-941-4490
Hazardous & Solid Waste Minimization Course	Government Institutes, Inc.	Feb. 21-22/Orlando, FL May 2-3/Monterey, CA	Terri Green 301-251-9250
Pollution Prevention Strategies	American Ecology Services Inc./Geraghty & Miller	Feb. 26-27/Seattle, WA May 9-10/Houston, TX	Richard Miller 212-371-1620
Poll. Prevention thru Waste Minimization, Recycling, Reuse	Air & Waste Management Assn.	Feb. 27-Mar. 1 Dallas, TX	Debbie Riechert 412-232-3444
Designing & Implementing a Recycling Program (course)	American Public Works Assn. Educational Foundation	Mar. 11-12/Houston, TX Mar. 14-15/Santa Clara, CA	Ron Sears 312-667-2200x534
1991 Env. Technology Expo & Conference	Interface Group	Mar. 13-15 Las Vegas, NV	Will Cowen 617-449-6600
Global Pollution Prevention '91	Chemical Manufacturers' Assn., EPA, Dept. of Energy, others	April 3-5 Washington, D.C.	Herb Quinn 703-761-6160
Environmental Technology Exposition	Pollution Engineering Magazine	April 8-11 Chicago, IL	Jill Vanderlin 708-390-2427
10th Annual New England Resource Recovery Conf/Expo	New Hampshire Resource Recovery Assn.	June 4-7 Springfield, MA	Theresa Walker 603-224-6996
Coastal and Ocean Management: 7th Symposium	Coastal Zone Fdn., NOAA, others	July 8-12 Long Beach, CA	Orville Magoon 707-987-0114
Forum on Integrated Municipal Waste Mngmnt.	ASTSWMO	July 15-17 Las Vegas, NV	Kerry Callahan 202-624-5828
Haz. Waste Minimization Technology Exhibit	City of Los Angeles	July 31-Aug. 1 Los Angeles, CA	Debbi Dodson 916-448-1198

Editor's Corner from page 1

learning that the biophysical systems we depend on to support and sustain us are extraordinarily fragile and exquisitely complex. For example: CFCs, present in the atmosphere at less than one part per billion have caused a hole in the ozone layer above the Antarctic the size of North America. We are detecting pesticides in the Great Lakes which have never been used in the United States or Canada. The hydrologic cycle ties our global commons — the air, the land, the sea — together in a planetary web of unimaginable detail.

Second, the scale of human impact on the world and the pace of change is unprecedented in human history. Human beings have become as influential on the earth's biophysical systems as any of the forces we call nature.

Worldwide, for example, we are destroying 100,000 square kilometers of rain forest each year. E.O. Wilson estimates that this in turn results in the loss of 4000 to 6000 species per year. To paraphrase a remark of this noted scientist: It is as if we were piloting a plane and periodically reaching down to toss out some piece or part, with no idea what that part may do, or how that part may contribute to the function of flying.

The environmental risks that loom over the next decades — global climate change, sea level rise, species and habitat losses — are different in magnitude, complexity, and irreversability than anything we have faced until now. So too, the "triage" approach that we have used until now in dealing with specific environmental ills — from contaminated rivers to urban smog — may be neither feasible nor sane in the face of environmental threats to the entire planet.

From a policy perspective, the next twenty years will thus require a fairly fundamental shift in our approach — from the acute to the systemic, from local to global, from exploitation to stewardship, from reaction to proaction. We cannot afford to continue orienting our funds and efforts towards trying to mitigate the consequences of our mistakes; we must start *preventing* the mistakes.

We are encouraged by the progress that has been made over the last 20 years; by the speed with which pollution prevention has been taking hold just in the last year or two (see inside for some 1990 pollution prevention success stories); and by recent legislation which sets pollution prevention as a national policy.

The legislation in particular sets an important new direction. Although we are becoming accustomed to the need for preventive technologies, we are just beginning to recognize the need for preventive policies, on the part of both government and private institutions. Such policies would give serious attention to the monitoring of ecological systems, to forecasting environmental trends, to sustainable development and a reasonable valuation of natural resources.

There's a long way to go, but as 1990 closes, we seem to be making a good start.

Small Business Awards

EPA has awarded 17 grants for 1991 under the Agency's Pollution Prevention By and For Small Business Grant Program. The grants, up to $25,000 each, are intended to assist small businesses in developing and demonstrating new pollution prevention technologies. Selections were made by EPA's Office of Small and Disadvantaged Business Utilization from a total of 176 applications submitted to the Center for Hazardous Materials Research (CHMR) at the University of Pittsburgh which administers the program for EPA. The grantees are:

Briggs Nursery, Inc., Olympia, WA
Hydro-Separation Systems, Inc., Fort Worth, TX
Ink Engineering Services, Columbus, OH
Interconnect Systems, Inc., Simi Valley, CA
Lewis Engineering Services, Verona, PA
McCollister and Co., Council Bluffs, IO
Miniature Casting Corp., Cranston, RI
Omnific International Ltd., Poughkeepsie, NY
Orbel Corp., Phillipsburg, NJ
PAC Recycling, Maryville, TN
Pier-Sol, Inc., Baltimore, MD
STAC Corp., San Marino, CA
Technical Support Services, Chester, MD
The PROTEUS Corp., Albuquerque, NM
The 3R Corp., Pittsburgh, PA
Utility Development Corp., Livingston, NJ
Walton Agri-Service, Upper Sandusky, OH

Applications for a second round of funding on this program will be available in mid-1991. For further information, contact CHMR at 1-800-334-CHMR.

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