



# Pollution Prevention News



## Inside:

- 2 EPA News
- 3 New Initiatives:  
WAVE; PMN Review
- 4 Design for the  
Environment
- 5 Interview with  
Dave Kling
- 6 In the States
- 7 Living Green
- 8 Resources
- 9 Congressional Notes
- 10 Landmark  
Great Lakes Proposal
- 11 Case Study
- 12 Calendar;  
EPA Progress Reports

## President's Earth Day Speech Promotes Economic Growth Through Environmental Innovation

On April 22, Earth Day '93, President Clinton announced several major new environmental initiatives, including six new Executive Orders, focusing on pollution prevention, energy efficiency, and promotion of "green" design efforts. The President's speech sounded three main themes: linking a healthy environment with a healthy economy; recognizing global environmental interconnections; and making the federal government a partner and a leader in environmental protection.

The most detailed section of the Earth Day speech concerned activities to be undertaken by federal agencies, in setting

an example that businesses, communities and individuals can follow. Embodied in six new Executive Orders, these activities include: reporting emissions at federal facilities, as other facilities must do under Right-to-Know laws; setting a goal of 50% reduction in toxic releases at federal facilities; and changing federal procurement policies to purchase fewer ozone-destroying chemicals, more alternate fuel vehicles, more recycled products, and new energy-efficient computers.

That most symbolic of homes, the White House, will undergo a top to bottom energy

(Continued on page 9)

## Browner Calls Prevention "Central Ethic" at EPA

In an Earth Day statement, EPA's new Administrator Carol Browner declared that henceforth "pollution prevention will be the central ethic in everything we do at EPA." She announced the creation of a new Task Force charged with integrating pollution prevention initiatives into every EPA activity, program, and operation.

The new approach will have five key parts: (1) incorporating prevention as the principle of first choice in all EPA regulatory activities; (2) building a national network of prevention programs among state, local, and tribal governments; (3) expanding EPA budget allocations for "green" programs; (4) stepping up dissemination of information to promote prevention and track progress; and (5) developing partnerships for technological innovation including a new, interagency

Environmental  
Technology  
Initiative.

Explaining the importance of the renewed commitment to prevention, Browner stated: "We believe that by moving our focus upstream, by emphasizing innovation and source reduction measures over end-of-the-pipe regulation, we can blaze a new trail of lower environmental costs, improved environmental protection and public health, and increased national economic competitiveness." For a copy of the statement call 202-260-4361.





# EPA News

## Clearinghouse Update: New Phone Number!

**T**he Pollution Prevention Information Clearinghouse (PPIC) has a new hotline number and a new location! PPIC is a clearinghouse of technical, policy, program, legislative, and financial information relating to pollution prevention. The PPIC repository is being moved to the EPA Headquarters Library, at 401 M Street SW, Room M2904, in Washington, DC. The collection is open to the public from 10am to 4pm. By late 1993 PPIC documents will also be available through interlibrary loans. **The new PPIC Hotline number is 202-260-1023 (Fax: 202-260-0178.)**

PPIC's most recent publication is the 1993 *Reference Guide to Pollution Prevention Resources*, now available through the clearinghouse. However, some older documents are no longer available through PPIC, including: *Pollution Prevention 1991*, *Progress on Reducing Industrial Pollutants*, *Promoting Source Reduction and Recyclability in the Marketplace*; and the *Waste Minimization Assessment Manual*. These can be ordered from the National Technical Information Service (NTIS), Tel: 703-487-4650, at a cost of \$27 each.

## EPA to Recognize Corporate Environmental Leaders

**A** new proposal to create a national Environmental Leadership Program was announced in the *Federal Register* on January 15. The proposal attempts to characterize "environmental leadership," and presents a variety of possible criteria for recognizing a company or facility as a leader.

EPA's program would encourage companies to adopt a Corporate Statement of Principles and participate in a Model Facility Program, offering special recognition to companies that demonstrate a CEO-level commitment to pollution prevention that goes beyond mere compliance with regulations. EPA recognizes that other organizations have crafted similar programs, for example, the CMA's Responsible Care Program and the CERES Principles, formerly

known as the Valdez Principles. However, a national, government award is considered to be of value in promoting good corporate citizenship.

The *Federal Register* notice explicitly identified difficult issues and included a list of questions for the public. The extended public comment period ended on May 17. Copies of the proposal can be obtained from the Public Document Office, 202-260-7099. For further information contact Linda Glass-Rimer, 202-260-8616.

## State Grants Emphasize Prevention

### PPIS \$ Available Through Regions

**O**n March 30, 1993, EPA announced the availability of approximately \$4.5 million under the Pollution Prevention Incentives for States (PPIS) grant program. PPIS grants support programs that promote the reduction or elimination of pollution through information exchange, technical assistance, or dissemination of information to businesses. Eligible applicants include state agencies and universities, all U.S. territories, and Indian Tribes.

In FY93, EPA Regional Offices will take the lead in soliciting and screening proposals, and in the actual selection of awards. A 1993 National Guidance document is available to help PPIS grantseekers, and Regional Offices may choose to provide additional instructions. For further information applicants should contact their EPA Regional Pollution Prevention Coordinators.

### Prevention in Media Grants: New Guidance Available

**I**n addition to the PPIS program, EPA has developed a new policy to encourage pollution prevention projects through its traditional media-specific state grant programs. A recently released document, *Pollution Prevention Media Grant Guidance*, explains in greater detail how \$500 million in existing EPA state grant funds will now be tailored to encourage prevention. Examples of pilot projects are included, as well as the text of the new policy to take effect in FY94. Copies of the

document are available through the Pollution Prevention Information Clearinghouse, Tel: 202-260-1023.

## OPPT Awards \$330,000 for Innovative Research

**T**he Office of Pollution Prevention and Toxics has awarded \$55,500 to each of six universities in support of cutting edge pollution prevention research projects. All of the projects explore new ways of producing chemical substances while reducing or eliminating the use of toxic substances as feedstocks, catalysts, and solvents, and minimizing the production of toxic byproducts.

The six grant recipients, chosen from about 200 applicants, are: **Brandeis University** for development of less-toxic, reusable alternatives to tin-based catalysts; **UCLA** for exploring a new synthesis of styrene that doesn't use benzene as a feedstock; **University of Connecticut at Storrs** for experimenting with visible light as a substitute for heavy metals in chemical reactions, including several reactions commonly used in the dye industry; **Iowa State University** for using visible light to create a photochemical reaction as a possible substitute for the Freidel-Crafts reaction and its highly toxic reagents; **Purdue University** for replacing toxic feedstocks and catalysts with simple sugars in the synthesis of large-volume chemicals; and **Virginia Polytechnic Institute and State University** for developing methods for using liquid carbon dioxide as a solvent.

To be added to our mailing list, please write:  
**Pollution Prevention News**  
U.S. EPA  
401 M Street SW (MC 7409)  
Washington, DC 20460

**Editorial Staff:**  
Priscilla Flattery, *Editor*  
Gilah Langner  
Morgan Gopnik



## New Initiatives

### Hotels and Motels Do the WAVE

by Kevin Rosseel, OWEC

EPA's Office of Wastewater Enforcement and Compliance (OWEC) has kicked off a new voluntary initiative for water conservation. The Water Alliance for Voluntary Efficiency (WAVE), managed by OWEC's Municipal Support Division, is an innovative program aimed at focusing national attention on the value of water and the need for its efficient use.

Through voluntary partnerships with the Agency, WAVE encourages hotels and motels to employ water-saving techniques and equipment. Because WAVE is a voluntary program, hotels and motels may elect to sign a Memorandum of Understanding agreeing to

upgrade their facilities where it is profitable and practical to do so. In addition to recognizing WAVE partners for their environmental concern, EPA will offer participants technical workshops and computer software to help them implement equipment retrofit programs.

According to John Flowers, Program Manager, several benefits will result from implementation of the WAVE program. Not only will water consumption and energy demands be reduced, but hotels and motels can also become more efficient and profitable. Lodging industry guests and employees can also be informed about the benefits of water use efficiency through public informa-

tion campaigns in participating hotels and motels.

Among the charter participants in WAVE are the Marriott, Hyatt, Hilton, Westin, ITT/Sheraton, and Saunders Group corporations. The American Hotel and Motel Association has also expressed interest in supporting this new EPA initiative, and will inform all of its members about the opportunity to join WAVE.

After WAVE takes hold in the lodging industry, OWEC plans to expand the program into other businesses, institutional buildings, and perhaps multi-family housing. For more information about WAVE, please contact OWEC's John Flowers at 202-260-7288.

### New Chemicals to be Reviewed for Pollution Prevention Opportunities

EPA's New Chemicals Program has found that the review of premanufacture notices (PMNs) provides an excellent opportunity to identify pollution prevention options. Under Section 5 of the Toxic Substances Control Act (TSCA) anyone who plans to manufacture a new chemical substance must submit a PMN to EPA at least 90 days prior to beginning the activity. The New Chemicals Program then reviews the PMN to identify new substances that require regulatory action. Since 1991 EPA has asked companies to include voluntary pollution prevention information in their PMNs (see box). Now two pilot projects are underway that will help institutionalize prevention-oriented PMN review.

Under current practice, if the New Chemicals Program determines that a substance may pose unreasonable health or environmental risks, EPA can enter into a consent order permitting the manufacturer to proceed only under certain restrictions. These orders also generally require additional toxicity data to be submitted if a certain

production volume is reached. If EPA determines that the risks cannot be adequately reduced, even with restrictions, the PMN submitter can suspend the review process, delay manufacture, and search for ways to reduce the risks.

The new Pollution Prevention Plan Pilot Program identifies PMN chemicals for which development of a pollution prevention plan may be beneficial based on three factors: (1) whether the new chemical may pose unreasonable health or environmental risks; (2) the levels of human exposure and environmental releases expected; and (3) the potential for prevention during manufacture or processing. Pollution prevention planning may then be required under two circumstances: (1) in a consent order when a certain production volume is reached; or (2) before production begins, in order to identify a safer way to manufacture or process the substance. The plans are intended to encourage companies to explore new ways of reducing toxic releases.

The second new project will attempt to identify alternate synthetic pathways

in order to assist certain PMN submitters in reducing pollution. For certain high risk substances, an evaluation of the entire chemical process, including feedstocks, solvents, byproducts, impurities, and waste streams, will be conducted to identify points where the use and generation of toxic chemicals can be reduced or eliminated. When alternate synthetic pathways or other possible solutions are identified, this information will be forwarded to the PMN submitter for consideration.

#### New PMN Guidelines

New guidelines have been issued to explain the types of pollution prevention information that the New Chemicals Program considers in evaluating PMNs. Titled, *EPA Guidance for Providing Optional Pollution Prevention Information in TSCA Section 5 Pre-manufacture Notices*, the new document provides a checklist of pollution prevention items. Developed with input from the Chemical Manufacturers Association and others, this document can be obtained through the TSCA hotline, 202-554-1404.



# Design for the Environment

EPA's Design for the Environment program (DfE) works closely with private sector partners to promote the incorporation of environmental considerations at the front end of design processes. DfE has active projects working with the printing industry, the dry cleaning industry, and the financial professions, including accounting and insurance. New opportunities are being explored with the electronics industry, the banking sector, and the planning professions.

## Prevention Pay-Offs in Financial Services

Financial criteria affect every business decision. In turn, virtually every business decision, whether it involves the choice of raw materials, production processes, or products, affects the environment. The challenge comes in developing the link between businesses' economic self-interest and protection of the environment. A straightforward way to accomplish this is to better integrate environmental considerations into traditional financial functions such as accounting, capital budgeting, insurance, risk management, and lending and finance.

DfE's Accounting and Insurance Projects are working with a broad range of organizations and individuals including the U.S. Chamber of Commerce, Institute of Management Accountants, American Institute of CPAs, American Society of Cost Engineers International, American Institute of Chartered Property and Casualty Underwriters, universities, and others in order to encourage voluntary changes in business decisionmaking that facilitate investment in, and expanded use of, pollution prevention technologies.

### Full Cost Pricing

Business managers regularly make cost and pricing decisions as well as capital budgeting decisions (decisions about how to invest capital in new equipment and products). At present, most management accounting systems do not provide managers with enough information about environmental implications to make truly informed decisions. Costs for waste treatment and disposal are often lumped into "overhead," and risks of future liability are usually not accounted for at all. This leads managers to underestimate the

costs associated with certain products or processes. For similar reasons, managers often cannot see the advantages of investments that prevent pollution.

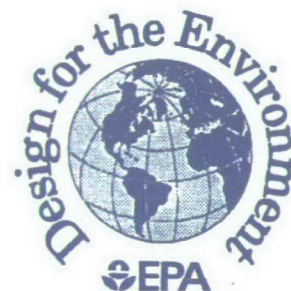
DfE's Capital Budgeting and Environmental Accounting Project is working with various stakeholders to improve these practices. The goal is to ensure that full private environmental costs and benefits are incorporated into decisionmaking. DfE is fostering a growing network of management experts working on developing innovative, environmentally aware accounting and capital budgeting practices. Last year EPA funded and published a report on *Total Cost Assessment*, a model for investment analysis. The project will promote further research into these ideas, encourage pilot testing among industry partners, and convene a meeting of experts in Fall 1993.

### Environmental Insurance

DfE's Insurance project attacks yet another business cost that has often failed to incorporate accurate environmental risk/cost information. DfE will be working with insurance underwriters and corporate risk managers to develop improved practices based on pollution prevention principles.

An important goal of both projects is to develop educational materials targeted at today's managers, and university students. The National Pollution Prevention Center, based at the University of Michigan, is a collaborative effort of EPA, business, industry, and academia. The Center has recently begun developing pollution prevention modules for use in undergraduate and graduate business and accounting courses. DfE hopes to provide the tools needed to ensure that the next genera-

tion of decisionmakers can succeed in a competitive global economy while protecting the environment.



## Printing Industry Case Study #1 Now Available

DfE's Printing Project has just published the first in a series of detailed pollution prevention case studies. The four-page report documents the experience of the John Roberts Company, a commercial printer using sheet-fed and web offset printing processes. By conducting a self-audit, and then assessing problem areas, this company found ways to use safer solvents, reduce waste, improve workplace safety, and save money.

One thing the company did not have access to was information about a full range of alternative chemicals and processes, and reliable assessments of their comparative risk and performance. Fortunately, the Printing Project will be making such information available to others later this year in the form of a "Substitutes Assessment." At a Printing Industry Workgroup meeting on March 11, members agreed to collect information on alternative chemicals, document "typical" work practices, and develop a test protocol in order to make standardized comparisons.

For copies of the printing industry case study, or more information on DfE, contact EPA's Pollution Prevention Information Clearinghouse at 202-260-1023.



## Interview with Dave Kling: Future Directions in EPA's Pollution Prevention Program

**P**ollution Prevention News (PPN) recently asked Dave Kling, Acting Director of the Pollution Prevention Division in EPA's Office of Pollution Prevention and Toxics, to discuss new directions in the Agency's prevention program. Here are some of his thoughts.

**PPN:** How well is pollution prevention faring under the new Clinton Administration?

**Dave Kling:** Very well indeed. EPA's new Administrator, Carol Browner, challenged the Agency in her Earth Day message to make prevention EPA's "central ethic" — the guiding principle of all our environmental efforts. It is a recurring theme now in budget discussions and decision briefings.

**PPN:** But hasn't prevention been an EPA priority for some time?

**DK:** That's just it. Prevention has been just one of many Agency priorities, and it didn't always compete well against some of the others. Despite some good progress in advancing prevention, our approach too often has been to pursue prevention through individual projects or discrete activities, often special and outside our core environmental programs. The Administrator wants to "mainstream" pollution prevention into all Agency work, which, for many, will be very different from the past.

**PPN:** In what ways is the Agency's prevention program changing?

**DK:** Prevention seems to be finding its way more frequently into key activities like rulemaking, permitting, and enforcement, which will truly change EPA's way of doing business and its culture. The spotlight is falling on our major media program managers and staff. They deserve great credit as they struggle to advance prevention in areas where control and clean-up approaches have dominated. Pollution prevention becomes more deeply ingrained at EPA each time they succeed in bringing prevention to their work.

In fact, pollution prevention appears to be an impetus for many positive forces, including more multi-media

thinking and action, a greater emphasis on risk reduction and environmental benefits in inspection, more cooperative ventures with industry as a supplement to, rather than a substitute for, our traditional command-and-control rulemakings, and the idea of environmental compliance, rather than enforcement action, as a desired endpoint.

**PPN:** In her Earth Day message, the Administrator spoke of five themes. Can you describe them briefly?

**DK:** Yes, we think the five themes help characterize and summarize our key pollution prevention objectives. The first deals with facilitating the culture change we've just discussed — "walking the talk" of prevention by making it the principle of first environmental choice throughout EPA and the rest of the federal government.

The second is to facilitate the work of our environmental partners at the state and local levels through grant and technical assistance, since they are increasingly the "face of government" on environmental issues, especially source and toxic use reduction. Third, we will continue to identify and pioneer new environmental approaches with industry which emphasize cross media prevention; reinforce, as mutual goals, economic and environmental well-being; and offer imaginative new models for government/industry interaction.

As examples, we find a variety of new EPA projects like the voluntary 33/50 program to reduce emissions of 17 key industrial toxics, "Green Lights" to promote energy efficient lighting technologies, and its broader "Energy Star" building initiative. In our own Office, we've launched Design for the Environment, a cooperative venture with small businesses to design cleaner products and processes. Our Office of Water has been working with hotel and motel chains to reduce water consumption, and our Office of Research and Development with architects to design buildings with environmental impacts in mind.

Fourth, we need to identify, generate, and disseminate environmental information that advances preventive

approaches by empowering the public to help us "keep book" on pollution prevention progress, and by documenting achievements to build credibility. Programs like the Toxic Release Inventory are important prevention tools.

*"We must look beyond our own limited resources to cooperative efforts with other agencies and organizations."*

Finally, we must look beyond our own limited resources to cooperative efforts with other agencies and organizations, such as the Department of Energy laboratories, to develop partnerships which will advance the technical frontiers of source reduction.

**PPN:** Any particular areas to watch?

**DK:** First, watch for substantial action as we put our own federal house in order. The President, for example, has directed that federal facilities which manufacture, process, or use toxic chemicals must report their wastes and releases under federal right-to-know legislation. It is time, he said, that "the United States government begins to live under the laws it makes for other people." The federal government will have a voluntary goal of 50 percent reduction of its toxic releases by 1999. The government will also take the lead in purchasing recycled products and the most energy efficient vehicles and computers.

At the state level, prevention seems to be spreading rapidly from its traditional roots in voluntary technical assistance programs to major state regulatory, permitting and enforcement activities.

**PPN:** Pollution prevention seems to be at the crossroads of environmental protection, energy efficiency and industrial competitiveness — three policy streams which the new Administration is trying to tie together.

**DK:** I think that's very true. This convergence should not only encourage federal agencies, such as EPA, DOE and

(Continued on page 8)



## In the States

### Spotlight on State and Local Prevention Programs

The National Advisory Council for Environmental Policy and Technology (NACEPT), an advisory committee to the EPA Administrator, recently conducted a study analyzing state and local pollution prevention programs,

*"One of the major challenges ahead is working out the relationship between voluntary and regulatory activity that will [promote] prevention."*

and making specific recommendations for federal action to bolster these efforts. NACEPT, a group composed of leaders from government,

business, environmental groups, and academia, spent a year examining this issue. Along the way it sponsored many face-to-face meetings and one national workshop.

The final report, *Building State and Local Pollution Prevention Programs*, looks closely at the programs in place and zeros in on remaining barriers to success. The analysis highlights the strengths and limitations of both voluntary and regulatory programs.

#### Voluntary Programs Widespread

Voluntary programs, such as incentives, business assistance programs, and voluntary toxics reduction programs, have the advantage of being less adversarial and giving businesses greater flexibility in implementation. The study found that most states have implemented some form of voluntary pollution prevention program. However, companies accustomed to responding to legal requirements may be wary of taking steps on their own. Some have expressed reluctance to make voluntary reduction commitments for fear of seeing them transformed into requirements. Others express concerns that future percentage reduction goals will actually be harder to meet at facilities that cut emissions now.

To date, very few states have incor-

porated pollution prevention into their regulatory programs, including media specific requirements, enforcement activities, and permitting. Nearly a third of states do require facilities to draft prevention plans, but most plans are not enforceable. "One of the major challenges ahead is working out the relationship between voluntary and regulatory activity that will [promote] prevention," according to NACEPT.

As a result of this study, NACEPT recommends that EPA take action in several areas:

- (1) integrating pollution prevention more thoroughly into existing environmental programs and regulatory mechanisms;
- (2) clarifying roles and responsibilities of federal, state, and local governments;
- (3) modifying management mechanisms and funding systems to promote prevention efforts;
- (4) improving technical expertise and information exchange;
- (5) promoting pollution prevention to meet wastewater pretreatment program goals; and
- (6) exercising leadership to build broad support for pollution prevention.

Copies of the report can be obtained by writing to Donna Fletcher, State and Local Environment Committee, NACEPT, Office of Cooperative Environmental Management, A101-F6, U.S. EPA, Washington, DC 20460.

#### Send Us Your News!

If your state has a pollution prevention program or story to tell, please let us know. We will try to help publicize successful programs, interesting case studies, or new publications of national interest. Send material to: *Pollution Prevention News*, Office of Pollution Prevention and Toxics, U.S. EPA (MC7409), Washington, DC 20460.

#### Ohio Seeking Nominations for Pollution Prevention Awards

The Ohio Environmental Protection Agency is soliciting nominations for the seventh annual Governor's Awards for Outstanding Achievement in Pollution Prevention. The intent of these awards is to recognize projects in Ohio that reduce pollution at the source or recycle waste in an

*"Pollution prevention is a priority for this Administration. A strong pollution prevention program minimizes waste and maximizes profits. It's good for business and for the environment — a real win-win."*

George Voinovich  
Governor of Ohio

environmentally sound manner. Virtually any individual or organization is eligible and may nominate itself or another party based on documented pollution prevention achievements. Pollution control, treatment and disposal activities will not be considered. The deadline for entries is June 30, 1993.

In addition to running the awards program, Ohio EPA's Pollution Prevention Section has compiled a variety of waste minimization fact sheets, and reports. Topics range from general overview materials, to industry and chemical specific assessments, with a particular emphasis on pollution prevention efforts in and around the Lake Erie Basin. For a list of available pollution prevention materials, or for detailed instructions on submitting an award nomination, contact the Pollution Prevention Section, Ohio EPA, P.O. Box 1049, Columbus, Ohio, 43266-0149. Tel: 614-644-3469.



## Living Green

### Environmental Homes of the Future

The construction and manufacture of new housing consumes 50 percent of all lumber and plywood used in the U.S. Historically these wood products have been supplied by mature, large-diameter trees. In addition, residences account for almost 21 percent of national energy consumption, at a cost of \$100 billion per year. A few architects and builders are determined to reduce this drain on the environment by designing and building model resource-conserving and energy-efficient homes.

Last year in Missoula, Montana, the Center for Resourceful Building Technology (CRBT) unveiled ReCRAFT 90, a model home built from recycled, re-used, and other resource conserving materials. ReCRAFT 90 incorporates unconventional products such as insulation, wallboard, and ceiling tile made from recycled newspaper, re-used wood flooring, floor tiles made from recycled glass, and roofing and carpeting made from recycled plastics. Lumber is replaced with a variety of manufactured wood products made of wood strands and formaldehyde-free adhesives.

The 2,400 square-foot house is also designed to reduce energy and water consumption by employing energy-efficient lighting, water conserving plumbing fixtures, native landscaping, and a passive solar design to reduce heating needs during long, cold, Rocky Mountain winters. CRBT hopes to



*ReCRAFT 90 National Demonstration Home.*

demonstrate that home builders can reduce the demand on natural resources while developing markets for recycled products.

The National Association of Home Builders Research Center (NAHB) in Bowie, Maryland, recently undertook a similar project. The prototype home, built in a Washington, DC, suburban community, uses alternative materials for the foundation, framing, siding, and roofing — traditionally the areas of greatest resource use. A typical new home is made of 11,000 feet of virgin wood, 70 percent of which is used for

invisible, but structurally critical, framing and joists. The frame of the NAHB house is made of recycled steel, and the covering from a variety of other recycled materials.

Another new sponsor for environmentally friendly housing is the National Park Service, an agency with an obvious interest in conservation, and an ability to educate millions of park visitors. In conjunction with the Exemplary Building program at the Department of Energy's National Renewable Energy Laboratory, the Park Service set out to build two showcase energy-efficient employee housing units, to be completed in 1993. The target is to cut energy consumption by 75 percent over conventional housing, while controlling costs and keeping required maintenance to a minimum.

The two sites, one in the Grand Canyon in Arizona, and the other in Yosemite Park in California, offer very different design challenges. The Grand Canyon unit emphasizes heating; a super-insulated envelope is combined with passive solar features, including windows that provide high solar transmission and minimal heat loss. The Yosemite location presents the problem of scorching summer days, combined

#### Indoor Air Concerns

The designers of the model homes described on this page are aware that indoor air quality concerns can arise in very well-insulated structures built from a variety of manufactured materials. For example, the search for manufactured wood substitutes for the ReCRAFT 90 home excluded any products containing formaldehyde. Still, CRBT recognized that all adhesives used in reconstituted lumber have potential outgassing problems, so particular attention was paid to selecting finishing materials and providing adequate ventilation. The Park Service will use a system of continuous forced ventilation to maintain air quality for its employees.

U.S. EPA's Indoor Air Pollution Prevention Program is currently screening a variety of home building products to characterize their chemical emissions, assess their toxicities, and explore alternatives. This information will be critical to builders experimenting with new materials. For more information, contact EPA's Indoor Air Quality Information Clearinghouse, IAQ INFO, at 800-438-4318.

*(Continued on page 10)*



# Resources

## Energy Directories

Public Citizen has released two new energy directories: the *National Directory of U.S. Energy Periodicals* lists over 700 publications on renewable energy, energy efficiency, nuclear power, and other energy topics. The *National Directory of Safe Energy Organizations* (6th edition, revised) contains listings for over a thousand non-profit groups involved in energy issues. The directories may be purchased in hard copy, diskette, or as zip-coded mailing labels, from Public Citizen, 215 Pennsylvania Ave. SE, Washington, DC 20003.



## Waste Product Profiles

The National Solid Waste Management Association has prepared a series of Waste Product Profiles for newspaper, glass containers, aluminum packaging, HDPE containers, and PET packages. The fact sheets contain information about the recycling and recycled content rates of these materials, weight and volume characteristics, recycling markets, and limitations on recycling. Additional fact sheets are being prepared. To order, contact NSWMA at 202-659-4613.



## Pulp & Paper Proceedings

Proceedings from the EPA-sponsored International Symposium on Pollution Prevention in the Manufacture of Pulp and Paper are available through the National Technical Information Service, 703-487-4650. The three-day symposium held last summer covered topics such as pulping and bleaching practices, including the use of chlorine, the use and performance of emerging technologies, and consumer acceptance of nonchlorine-bleached products.



## INFORM Documents Environmental Dividends

Companies reap both environmental and economic dividends by cutting wastes at the source, according to a report released

by INFORM, a national, nonprofit environmental research organization. For this report, researchers revisited 29 plants that the group had studied in 1985. The revisit showed that the same 29 plants achieved cost savings, rapid payback on investments, increased product yields and quality, safer workplace conditions, fewer waste management needs, and conservation of natural resources through 181 individual source reduction activities. For nearly two-thirds of the initiatives with payback period data, companies recouped their initial investments in six months or less. *Environmental Dividends: Cutting More Chemical Wastes* may be ordered from INFORM, 381 Park Avenue South, New York, N.Y., 10016-8806. Tel: 212-689-4040.



## EPA Reviews Industrial Pollution Prevention Literature

New approaches and ideas for implementing industrial pollution prevention strategies are proliferating, according to a critical review of literature conducted by EPA's Pollution Prevention Research Branch. In *Industrial Pollution Prevention: A Critical Review*, EPA researchers present the current state of knowledge on private and public approaches to encouraging pollution prevention strategies, selected clean technologies and clean products, and various technical and economic issues related to pollution prevention.

The report found that in industrially developed countries, pollution prevention usually results in bottom-line savings, especially if long-term liabilities for possible cleanup actions are taken into consideration. "However, in

the short term, many of the potential savings are dependent upon a stringent regulatory program being in place to discourage cheaper, but not as environmentally friendly treatment and disposal options, from being pursued." The report is available from EPA's Pollution Prevention Research Branch, 26 West Martin Luther King Drive, Cincinnati, OH, 45268. Tel: 513-569-7215.



## Green Advertising Scrutinized

At a time when many people are wondering what it means for a laundry soap to be "environmentally friendly," EPA's Pollution Prevention Division has published a new study, *Evaluation of Environmental Marketing Terms in the United States*.

This 200-page report provides a comprehensive overview of trends in the use of environmental marketing terms such as "earth friendly," "dolphin safe," "photodegradable," and "recyclable." It also discusses recent market research into consumer understanding of these terms, and consumers' willingness to base their purchases on such claims, particularly if they are associated with higher cost.

Enforcement activities involving false or misleading environmental advertising claims are also summarized in the report. This publication will provide a baseline against which to measure the effect of new FTC voluntary guidelines for advertisers making environmental claims.

A limited number of copies of this report are available through the Pollution Prevention Information Clearinghouse, Tel: 202-260-1023.

## Dave Kling

(Continued from page 5)

the Department of Commerce for instance, to work more closely together on joint prevention initiatives, it should also reinforce the interrelatedness of these three issue areas in the public eye and within the private sector. As a result, I expect our environmental,

energy and industrial policies and practices to be more integrated.

Finally, I wouldn't be surprised if new environmental legislation from the Congress emphasizes prevention. Congress made pollution prevention a national policy in 1990, and I expect it will be given considerable attention as reauthorization bills for water, solid waste and Superfund are drafted.



## Congressional Notes

On March 16, 1993, 54 Members of the U.S. Senate sent a letter to President Clinton urging federal action on pollution prevention. Excerpts from the letter, and a list of the signatories, are reprinted at right. The following day, 42 Members of the House of Representatives sent a similar letter.

Dear Mr. President:

We are writing to ask that you consider issuing an Executive Order specifying actions for agencies of the federal government to take to prevent pollution at the source. Pollution prevention — reducing waste at the source rather than at the end-of-the-pipe — is often the cheapest and most effective way to diminish pollution, especially over the long term. ...

The federal government has an opportunity and a responsibility to become the leader in applying pollution prevention in its day-to-day operations, in its purchasing decisions, and in its policies. ... If we are to be leaders, we must lead not only by word, but by example — we must do ourselves what we are asking of industry and the states. ...

There are many actions that the federal government can take to incorporate pollution prevention in its operations. A critical first step is to report publicly the amount of toxic wastes generated at federal facilities.... Large federal facilities also can be instructed to prepare comprehensive pollution prevention plans that identify ambitious but achievable goals for reducing waste at the source.... The federal government['s] ... purchases of environmental goods and services.... should be used to help build markets for environmentally benign products.... Finally, an Executive Order can direct agencies to build flexibility into federal grant programs to encourage states in their efforts to develop innovative policies to promote pollution prevention. ...

We pledge our cooperation with any such effort, and wish you every success in pursuing the twin goals of economic growth and environmental protection.

Sincerely,

George J. Mitchell	Daniel K. Akaka	John Glenn	Daniel Patrick Moynihan
John F. Kerry	Herb Kohl	Harris Wofford	Dennis DeConcini
John H. Chafee	Richard H. Bryan	Mark O. Hatfield	Dianne Feinstein
Carl Levin	Paul S. Sarbanes	Patty Murray	Dan Coats
Patrick J. Leahy	J. Robert Kerrey	Tom Harkin	Chris Dodd
Pete V. Domenici	Daniel K. Inouye	Bob Packwood	Bob Graham
Claiborne Pell	Russell D. Feingold	Jay Rockefeller	Paul Wellstone
David Pryor	Paul Simon	Richard Lugar	Jeff Bingaman
David L. Boren	Joseph R. Biden, Jr.	William Roth	Jim Sasser
Bill Bradley	Arlen Specter	Nancy Landon	Harlan Mathews
William S. Cohen	Howard M. Metzenbaum	Kassebaum	Ben Nighthorse Campbell
James M. Jeffords	Carol Moseley-Braun	Joseph Lieberman	
Dave Durenberger	Edward M. Kennedy	Tom Daschle	
Donald W. Riegle, Jr.	Dale Bumpers	Barbara Mikulski	
Barbara Boxer		Alfonse D'Amato	

## President Clinton's Earth Day Speech

(Continued from page 1)

and environmental audit in order to identify opportunities for greater efficiency, cost savings and pollution prevention.

President Clinton reiterated elements of his budget proposals and job creation programs that promote increased investments in alternate energy, water treatment, and environmental restoration. He then announced a joint effort to be undertaken by EPA and the Departments of Energy and Commerce to encourage the development of new

environmental technologies, and to help transform these ideas into job-creating products and services.

As an example, the President highlighted energy-efficient lighting, a relatively new product with projected sales of \$10 billion by the year 2000. American companies pioneered many of the technologies involved and the Administration hopes to ensure that Americans reap the benefits.

"We share our atmosphere, our planet, our destiny with all the peoples of this world," the President pro-

claimed. As a result, we need "policies [that] will protect all of us because that is the only way we can protect any of us." To exemplify this global commitment President Clinton announced that the United States now intends to sign the Biodiversity Treaty which came out of the 1992 Earth Summit in Rio de Janeiro. Other global actions include a commitment to capping emissions of greenhouse gases at 1990 levels by the year 2000, and \$38 million in Russian aid targeted for pollution cleanup and energy efficiency.



# Great Lakes to Serve as Model of Ecosystem Management

On April 16, 1993, EPA's Office of Water published a landmark proposal for protecting water quality in and around the Great Lakes. The *Water Quality Guidance for the Great Lakes System* would regulate pollutants by establishing water quality criteria across the entire ecosystem, in contrast to the traditional state-by-state approach. The guidance also discusses waste minimization as a goal and requires pollution prevention planning under some circumstances.

The massive 245-page proposal was four years in the making. As part of the process, EPA solicited input from industry, environmental groups, state and local government, and others, and held over 100 public meetings. During the 5-month comment period, which will end in mid-September, discussion is expected to center on three main issues: (1) how basinwide water quality standards should be set, particularly for the most worrisome bioaccumulating substances; (2) how stringent the anti-degradation policy should be, and when exceptions to it can be made; and (3) how these policies should be translated into actual discharge permits and monitoring requirements at each individual facility.

## Setting Standards

The guidance proposes setting basinwide water quality criteria for a variety of pollutants, based on their effects on human health, aquatic life, and wildlife. Particular attention is paid to toxic chemicals that tend to accumulate in living organisms, the "bioaccumulative chemicals of concern" (BCCs). Twenty-eight chemicals are listed as BCCs, and ten more are listed as "potential" BCCs.

## Anti-degradation Policy

As is the case under current rules, dischargers who want to increase their output beyond existing permit levels will need to justify this increase if it will have a significant impact on high quality waters. No increases will be allowed if the water body is designated an "Out-

standing National Resource Water." However, under other circumstances, increases may be approved. The proposed guidelines spell this out in greater detail than previously, requiring dischargers to consider whether the increase could be avoided through pollution prevention, even at a slightly higher cost, and whether it will support important social or economic development goals. (For BCCs, even increases within current permit levels would be subject to anti-degradation restrictions.)

## From Policy to Permits

Ultimately, basinwide standards must be translated into permits at individual facilities. The guidance is intended to make this process more consistent between the many states and tribes issuing permits. In a significant departure from past practice, EPA is proposing that the concept of a "mixing zone" eventually be eliminated for BCCs whose overall burden in the water

may be as significant as the concentration at a given point. For BCCs that have water quality based limits below current detection capability, dischargers will be required to establish pollutant minimization plans and may have to monitor fish for accumulation.

## Economic Effects

EPA estimates that this proposal will affect approximately 3800 dischargers, at a total annual cost of anywhere from \$80 to \$550 million (EPA's best estimate is \$230 million), and will bring measurable benefits for the long term health of this unique ecosystem. EPA officials, and many outsiders who participated in the process of crafting this proposal, hope that it will serve as a model ecosystem approach for other states and watersheds across the country.

For more information, contact Kenneth Fenner, WQS-16J, U.S. EPA Region 5, 77 W. Jackson Blvd., Chicago, IL 60604. Tel. 312-353-2079.

# Environmental Homes of the Future

(Continued from page 7)

with cold winters. A simple design incorporates massive, well-insulated walls, optimized natural ventilation, and passive solar heating. The energy needed for cooling will be reduced by an estimated 98 percent over conventional construction; for heating, the reduction will be around 67 percent.

For convenience, low maintenance, and cost savings, energy is supplied at both housing units via an integrated mechanical system that combines space heating and cooling, water heating, and ventilation in a single compact unit. Electrical use will also be reduced by using efficient appliances and compact fluorescent lighting.

Both the NAHB and the CRBT hope to influence other builders by demonstrating the feasibility and marketability of environmentally conscious homes. Building costs are expected to run slightly higher than for conventional

construction (10 to 15 percent for these prototypes) due to limited availability of the unusual materials. But Walter Spurling, CRBT's program director, believes that educated, "green" consumers will accept this premium, particularly since it can be recovered in future energy savings. Additional resource-conserving demonstration homes are being planned for Portland and Seattle, and sponsors hope that in time the techniques being refined in these models will be adopted throughout the construction industry.

The Center for Resourceful Building Technology has compiled an 88-page directory of resource efficient building materials and manufacturers. *The Guide to Resource Efficient Building Elements* can be obtained by sending a check for \$23 payable to CRBT, P.O. Box 3866, Missoula, MT 59806; Tel. 406-549-7678.



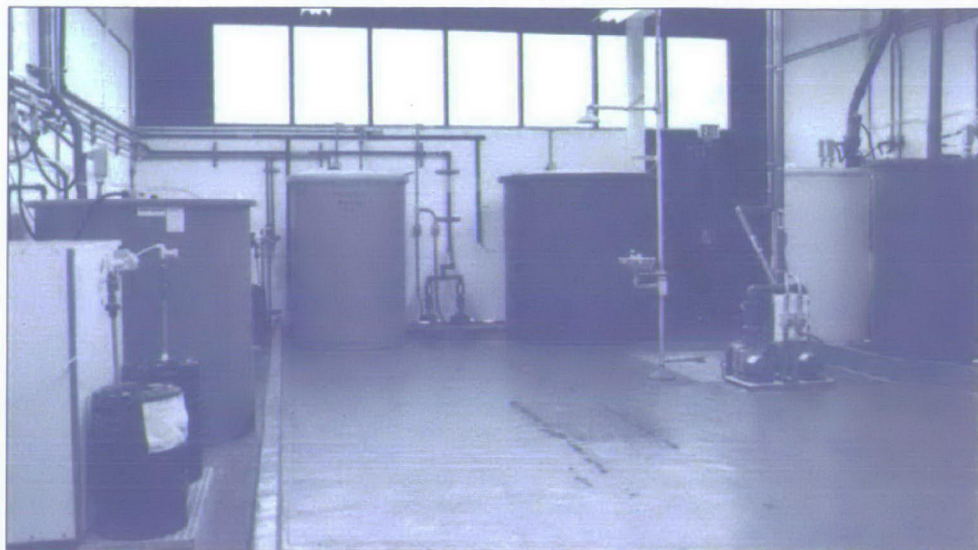
## Case Study

### Moving Towards Zero

Our approach to solving pollution problems in this country is showing a gradual shift from end-of-pipe controls to front-end reduction strategies. The next logical step? Closing the loop entirely. As innovations at the Robbins Awards Co. of Attleboro, Massachusetts show, getting rid of pollution is not some environmental pipe dream; the company's closed-loop production system proves that reduced use and zero discharge of toxics are technically feasible objectives that can translate into significant savings.

Robbins is a medium-sized company that designs and manufactures custom jewellery and awards. Production of these goods involves a metal plating process famous for high levels of pollution; the process is chemical intensive, requires high volumes of water, and produces huge quantities of wastewater full of residuals.

Robbins' zero discharge system, installed in 1988, involves two sub-systems: wastewater purification and metal recovery. These two units have reduced the company's water usage by 48 percent, chemical usage by 82 percent, and production of metal hydroxide sludge by 99.8 percent, from 4,000 gallons per year in 1986 to seven gallons in 1988. Installation of the system cost the company \$120,000, plus \$100,000 for a new wing to house the units. Overall savings average \$71,000



*Recirculation section of Robbins Co. closed loop system.*

per year; the investment was repaid in full after three years.

A combination of factors spurred Robbins to explore the zero discharge option. A 1985 study of the Ten Mile River identified Robbins as one of the river's major polluters. As a result, the State's Office of Technical Assistance (OTA) held a series of pollution reduction workshops. OTA's message convinced Robbins' environmental manager, Paul Clark, to substantially reduce the company's water usage, from 12 to 15,000 gallons per day to only 2,500 gpd.

Then in January 1987, EPA and state officials announced strict new pollution restrictions based on the 1985 report. In addition, MassPIRG filed a lawsuit stating that Robbins had violated its wastewater discharge permit limits repeatedly from 1981 to 1987, translating into 2,500 violations, with potential fines of up to \$30 million. (MassPIRG put the suit on hold while Robbins made the transition to closed-loop production, and dropped the case after the company demonstrated that it had achieved zero discharge in 1988.)

As Clark explored the feasibility of a closed loop system, pollution control suppliers told him, "it can't be done." The state's OTA agreed to visit the company, and came up with specific ideas on how a closed-loop system might

work. Now it was up to Clark to convince top management that the closed-loop system was the most cost-effective way to bring the company into compliance with the strict new discharge requirements. The numbers were clear, but the system had never before been tried. Senior managers agreed to Clark's proposal with some hesitation — and have since become forceful advocates of toxics use reduction. "Companies have to become effective in dealing with environmental issues," says Robbins' Executive Vice-President John Bradley. "The ones that don't are going to be paying huge fines and penalties — they won't be in business by the year 2000."

Other companies are showing growing interest in Robbins' approach. Crucial ingredients to Robbins' success include technical support from the state, a citizens' group threatening legal sanctions, strict federal requirements, and an innovative, persistent advocate for change within the company. According to Bradley, the major hurdle to overcome is fear of risk. "Upper management has to be flexible," he says. "They can't shut anything out just because it hasn't been done before."

For more information, contact John Camara, Facilities Manager, Robbins Co., 400 O'Neil Blvd., Attleboro, MA 02703; Tel: 508-222-2900.

This article is reprinted from *The What Works Bulletin*, a bi-monthly publication highlighting outstanding environmental action. *What Works* is published by The Environmental Exchange, a national nonprofit organization working to accelerate environmental action by sharing information about what's working to protect the environment. To exchange information about successful environmental initiatives, contact The Environmental Exchange, 1930 18th Street N.W., #24, Washington, DC 20009; Tel: 202-387-2182.



# Calendar

Title	Sponsor	Date/Location	Contact
Federal Facilities Compliance/ Pollution Prevention Conference	U.S. EPA Region 5	June 7-9 Chicago, IL	Lee Regner 312-353-6478
New York State's 6th Annual Pollution Prevention Conference	NY DEC, Business Council of New York State	June 7-9 Albany, NY	Linda Beagle 518-457-2480
New England Resource Recovery Conference & Exposition	New Hampshire Resource Recovery Association	June 8-10 Nashua, NH	603-224-6996
Microscale Laboratory Workshops for High School Teachers	Nat'l. Microscale Chemistry Center, EPA, NSF, TURI	June 11-13 North Andover, MA	Dept. of Chemistry 508-837-5000, x 4381
Environmental Release Reporting Course	Government Institutes	June 18 Arlington, VA	Terri Green 301-921-2345
4th Annual Midwest Renewable Energy Fair	Midwest Renewable Energy Assn.	June 18-20 Amherst, WI	715-824-5166
Joint National Conference on Environmental Engineering	Canadian Society of Civil Engineers, American Society of Civil Engineers	July 12-14 Montreal, Canada	514-398-6672
1993 Nat'l Solid Waste Forum on Integrated Municipal Waste Mgmt.	ASTSWMO	July 19-21 Lake Buena Vista, FL	Kerry Callahan 202-624-5828

## EPA Progress Reports

**GREEN PROGRAMS** — A new brochure, *The Climate is Right for Action*, explains EPA's voluntary programs to prevent air pollution and control greenhouse gas emissions. Programs include Green Lights, the Consortium for Energy Efficiency, Energy Star Computers, "Golden Carrot™" Refrigerators and other efforts. To order, write to EPA's Public Information Center (PM-211B), U.S. EPA, Washington, DC 20460.

**PREVENTION & RULEMAKING** — The Spring 1993 Status Report on the Source Reduction Review Project (SRRP) describes ongoing EPA efforts to incorporate source reduction concepts into pending regulations. SRRP will ensure that prevention is considered in 24 forthcoming air, water, and hazardous waste standards affecting 17 industrial categories. For a copy, contact the Pollution Prevention Information Clearinghouse, Tel: 202-260-1023.

**PREVENTION & ENFORCEMENT** — A recently released report, *Innovations in Compliance and Enforcement: Supplemental Environmental Projects in EPA's Toxics and Pesticides Program*, provides a detailed picture of how pollution prevention has been incorporated into settlement negotiations under environmental statutes enforced by the Office of Prevention, Pesticides, and Toxic Substances. To obtain the report, call Beth Crowley, 202-260-8464.

Moving? Please enclose mailing label!

United States Environmental  
Protection Agency (MC7409)  
Washington, DC 20460

Official Business  
Penalty for Private Use \$300

BULK RATE  
POSTAGE & FEES PAID  
EPA  
PERMIT NO. G-35

**Forwarding & Return Postage Guaranteed**  
**Address Correction Requested**