



Pollution Prevention News

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1995 Data Released on Expanded TRI

EPA has made public the latest data from the Toxics Release Inventory for reporting year 1995 on toxic chemical releases into the environment. As in previous years, the data show a continuing decline in the volume of chemicals released from year to year, coupled with a continuing increase in the overall volume of waste generated. Nearly 29% of the 21,951 facilities reporting to TRI claimed to have undertaken at least one source reduction activity in 1995.

This year's announcement includes an expanded list of chemicals reported to the TRI. The 286 chemicals added to the list in 1994 account for 237.7 million pounds — about 10 percent — of all reported releases. Of the new chemicals, 94% have demonstrated chronic health hazards and/or

environmental effects, including cancer or reproductive disorders. Half of the additions are pesticides; almost 15% are carcinogens; and many of the chemicals are linked to adverse health effects in children. One of the newly added chemicals, nitrate compounds, was the fourth largest chemical reported released and accounted for nearly 65 percent of all reported water pollution. Primary sources of nitrate compounds are manufacturers of fertilizers.

For the core chemicals reported in both 1994 and 1995, releases of pollutants decreased by 4.9%, with the greatest reductions occurring in releases to air and surface water. Overall, from 1988 to 1995, total releases (for chemicals reported in each of the years) decreased by 1.35 billion

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U.S., Canada Agree to Eliminate Toxics in Great Lakes

The United States and Canada have agreed to a milestone plan to protect public health by virtually eliminating persistent toxic substances from the Great Lakes by the year 2006. The agreement, signed in Washington by EPA Administrator Carol M. Browner and Canadian Minister of the Environment Sergio Marchi on April 7, 1997, fulfills a promise made by President Clinton and Prime Minister Chretien in February 1995. This marks the first time specific reduction targets for toxic pollutants have been jointly set by both countries.

The plan to virtually eliminate identified persistent toxic substances in the Great Lakes, is based primarily on voluntary pollution prevention activities, but

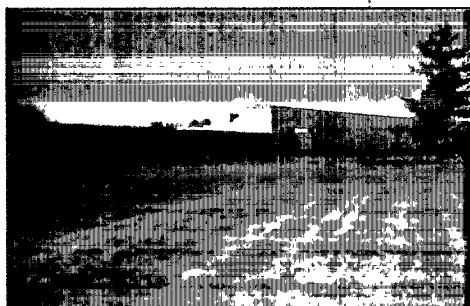
builds on existing Canadian and U.S. regulatory programs.

The strategy sets milestones to be achieved from 1997 to 2006. Among the U.S. milestones, the strategy calls for a 50 percent reduction of mercury uses nationally; a 90 percent reduction nationally of high-level PCBs used in electrical equipment; a 75 percent reduction in total releases of dioxins and furans from human activity sources, such as incinerators, to apply to aggregate releases to the air nationwide and of releases to the waters of the Great Lakes; and confirmation that there are no releases of five bioaccumulative pesticides: chlordane, aldrin/dieldrin, DDT, mirex, and toxaphene.

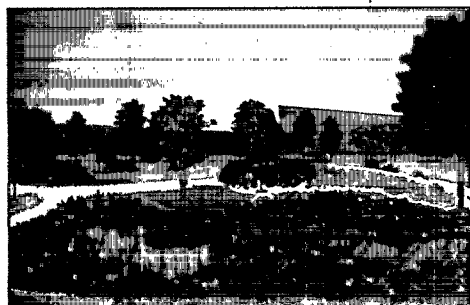
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Home and Garden

Beneficial Landscaping Takes Root



Before.



After.

Imagine driving into work past a woodland filled with trillium, mayapple, and Dutch-man's breeches — and now imagine that workplace being an EPA laboratory! Employees at the National Vehicle and Fuel Emissions Laboratory (run by EPA's Office of Mobile Sources) in Ann Arbor, Michigan will have exactly this pleasure as NVFEL implements a pilot Model Ecological Restoration Project over the next decade. The project will include a student learning environ-

ment, a demonstration area for corporations and communities to learn about, and a scientific data collection site. Beneficial landscaping is at the heart of the project, and will feature native Michigan habitats of fen, maple forest, oak savannah, and prairie.

NVFEL is not alone in implementing beneficial landscaping, although the scale of its research

and demonstration components is unique. EPA has issued guidance on such efforts (Environmentally and Economically Beneficial Landscaping Guidance for Federal Facilities, 60 FR 40837) and an EPA Task Group on Environmentally and Economically Beneficial Landscaping is working on promoting these practices. The guidance urges a holistic approach to landscaping which incorporates pesticide risk reduction, water conservation and ground water protection, wildlife habitat enhancement, air pollution reduction, solid waste reduction, and incorporation of native plants whenever practical. Pollution prevention is a key element in beneficial landscaping, involving environmentally sensitive lawn care chemical use, reducing emissions from use of lawn care maintenance equipment, recycling green waste, and reducing runoff. For more information on the EPA Task Group, call 313-668-4333. For information on NVFEL's project, call Mary Walsh, 313-668-4205.

One Million Radon-Resistant Homes

Radon-resistance — the latest feature in home design? It's possible! Since 1990, approximately one million homes have been built with radon-resistant features.

EPA has been working to reduce public exposure to radon, a colorless, odorless naturally-occurring radioactive gas which is estimated to cause 14,000 lung cancer deaths per year. Radon in the environment is not considered a significant health hazard, but it can accumulate to potentially dangerous levels inside a building. Radon levels inside homes can be lowered by installing a few proven techniques to draw radon away from living areas.

Techniques for building homes radon-resistant include a 4" layer of gravel and plastic sheeting beneath the foundation

slab, and a PVC suction pipe from below the slab through the roof. At \$350-500 on average, building in radon-resistance from the start is cost-effective compared to remediating a radon problem later. An additional benefit is an average energy costs savings of about \$65 per year.

EPA's Office of Air and Radiation is promoting radon-resistance in new homes by fostering the adoption of techniques in building codes, encouraging home builders to voluntarily use the techniques, and increasing consumer awareness and demand for homes with radon-resistant features. In 1995, about 160,000 out of one million new single family homes in the U.S. were built with radon-resistant features. For more information, contact Paulina Chen, 202-233-9031.



Grants

Pollution Prevention Offers Solutions in Environmental Justice Communities

April 15 marked the deadline for the third round of applications in EPA's Environmental Justice through Pollution Prevention (EJP2) grant program. Four million dollars in grant funding is available in FY 1997 for pollution prevention approaches to environmental problems of minority communities and/or low-income communities.

EPA's environmental justice program was developed in response to a 1992 study that found that people of color and low-income communities experience higher exposure to toxic pollutants than the general population. Because many "environmental justice" communities face disproportionate environmental impacts, one way to approach the problem is by using pollution prevention, rather than pollution control, to reduce environmental risks at the source, while promoting public involvement and economic benefits.

EJP2 grant funds go to support local environmental, environmental justice, community grass-roots organizations, and tribal governments that promote environmental justice using pollution prevention as the preferred approach, as well as national and regional organizations that partner with such groups. The grant program aims to have a direct impact on minority and low-income communities. Following are some examples of projects that have been funded over the last two years.

Innovative Approaches

The EJP2 grant program offers the opportunity for more innovative approaches to environmental justice. For example, in Region 10, the Tulalip Tribes of Washington State received \$196,614 to take a closer look at the competing demands of economic development and environmental protection, using sustainable development and pollution prevention as the focus. One outcome of the project will be a model Tribal Environmental Policy Act (TEPA) that tribes can use to review proposals for economic development

near reservations. Another new approach funded through the grant program is a revolving fund operated by the National Association of Community Development Loan Funds (NACDLF) which represents 46 private, nonprofit community development financial institutions that provide credit, capital, and technical assistance to support the revitalization of low-income rural, urban, and reservation-based communities across the United States. The fund will provide seed capital to several small community development organizations to promote pollution prevention in business development.

In Region 1, a coalescing of environmental justice projects is occurring in Boston, focused on the hazards posed by small automotive shops located in low-income neighborhoods. Health centers in these neighborhoods have reported startling incidences of accidental direct and indirect exposure of the public to local automotive shop toxins. The Bowdoin Street Health Center received \$53,450 to add a Certified Industrial Hygienist to the community health center's occupational health clinic. The industrial hygienist will help small area automotive repair/bodyshops and dry-cleaning businesses comply with all regulations and decrease the amount of hazardous and toxic substances they use. The Department of Health and Hospitals also received \$53,450 to develop a 15 to 20 minute training film for auto shop owners on how to establish and maintain sound environmental pollution prevention practices. Viewing of the film will be required as part of the city's auto shop permitting process. Other educational and outreach efforts related to automotive shops are being conducted by NEWMOA (the Northeast Waste Management Officials Association) and a joint collaboration of Roxbury Community College and the Tellus Institute in the Roxbury neighborhood of Boston.

Dry cleaners are another small business concern with heavy minority ownership

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For more information on EJP2, contact Chen Wen, 202-260-4109.



Financial

Environmental Performance: Does Wall Street Care?

by John Ganzi

How much does the financial services industry care about the environmental performance of businesses? Until recently, the unfortunate — and overwhelming — answer was: not very much. But signs of change are in the works, and a leading edge of the financial services industry is beginning to see a connection between the environmental

The leading edge of the financial services industry is beginning to see a connection between environmental management and financial performance.

management activities and record of a company and its financial performance.

Some of the impetus toward connecting environmental and financial performance may be coming from

the real estate industry where a decade of Superfund experience has made environmental due diligence a familiar practice. Some of the impetus may come from the public's interest in "social investing" and concern for the environment. And part of the impetus may be the empirical findings of research studies that have lately examined this issue.

Linking environmental performance to financial performance could have multiple positive effects. For example, if bankers or bond and stock rating analysts understood and monitored environmental management, they might give higher ratings to companies that are investing in cleaner technologies and processes or pollution-free products. Such companies would then be rewarded by the marketplace with better and cheaper access to capital (e.g., through credit lines, loans, commercial paper, bond offerings, etc.). Other parts of the financial services industry, such as pension funds and foundations, might be persuaded to invest some portion of their own vast holdings in environmental services companies or companies that are more environmentally-friendly. As direct investments by pension funds, investment

banks, and other financial services companies increased, other institutional stockholders might increase the sophistication of their monitoring of the environmental activities of the companies they invest in, exerting a positive influence on corporate management.

Calculating the Bottom Line

Of course, all of these benefits assume that "green" companies are also good financial risks. Does being environmentally responsible help or hurt a company's bottom line? On the one hand, a company that minimizes its use of natural resources, institutes good housekeeping measures, minimizes fugitive emissions, and reduces exposures of workers and consumers to toxic materials is keeping both its costs and potential liabilities down, which should eventually show up in its bottom line or net income. On the other hand, a company that invests a lot in pollution prevention or control equipment may be seen by potential investors as cash-poor and unprofitable.

To determine which of these is empirically the case, a number of researchers have set out in recent years to calculate the effect of environmental performance on financial results (net income or stock price). The first analytic study, appearing in 1993 by James Hamilton at Duke University, compared stock performance to TRI data. Since then, over three dozen reports have been done on this issue in this country alone (see sidebar on next page for summaries of several studies).

Virtually none of the studies has reported any negative correlation between environmental and financial performance — meaning that corporate investments in environmental performance do not harm the companies' bottom line. About a third of the studies showed no statistically significant correlation between environ-

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Financial

mental and financial performance; while two thirds of the researchers found a positive correlation.

Although these results are encouraging, we should exercise caution in interpreting them. To date, only a few of the studies have tried to directly trace specific financial performance results to specific environmental actions (such as retrofitting processes to use less energy, capturing fugitive emissions, reducing TRI releases, etc.). However, on a more general level, the studies *have* been able to show that companies that are environmentally friendly experience rising profits and stock prices. Conversely, companies that are environmentally unfriendly experience a decrease in profits and stock price. In the end, whether the relationship is direct or indirect should not matter too much to the financial services industry, as long as the bottom line shows a consistent connection between environmental responsibility and more profitable companies.

What Next?

Although research studies are offering good news, much still remains to be done to convince naysayers on Wall Street that environmental performance is a good determinant of financial performance. More comprehensive studies and studies of a wider range of industries still need to be done over a period of several years, to determine what happened to the profits and stock prices of companies that fall into different categories of environmental performance. Studies also need to be done to determine which types of environmental investments on the part of a company are the most beneficial in terms of the bottom line.

Another area for improvement is in the dissemination of the findings of these studies. Many academic reports are not known about or read in the business world. By contrast, the report of the World Business Council on Sustainable Development being released in May 1997 should

have a major impact, in that it is written by a business group and documents the experience of 12 companies in achieving environmental and financial excellence. Over time, the word will surely get out: green is good for both the environment and business.

The Research

1. James Hamilton, "Pollution is News: Media and Stock Market Reactions to TRI Data," 1993. This study looked at the stock price of chemical companies before and after the initial release of TRI data. It showed that the greater the disparity between prior reported emissions and TRI results, the higher the stock price for the firm. Firms with little or no discrepancy between prior available data and TRI data actually outperformed the chemical industry indexes. In other words, firms were not solely punished or rewarded based on level of emissions, but on level of disclosure and magnitude.
2. Stuart Hart and Gautam Ahuja, "Does It Pay to Be Green?" University of Michigan, 1994. Two years after emissions are decreased on a per unit of production basis, various measures of financial returns showed improvements, with the highest returns linked to firms with the highest emission levels prior to reduction activity.
3. Mark White, "Corporate Environmental Performance and Shareholder Value," McIntire School of Commerce, University of Virginia, 1995. Firms that have signed the CERES (originally the Valdez) Principles generate above-average risk-adjusted returns compared to a portfolio of similar industry firms who have not signed the principles. The results seem to reinforce the findings of several other reports that there is real stock market value in being green and promoting it.
4. Scott David Johnson, "An Analysis of the Relationship Between Corporate Environmental and Economic Performance at the Level of the Firm," University of California, 1995. A multiple regression analysis of the Fortune 500 over a six year period, 1987-1992. Study results were mixed: certain environmental issues were apparently closely tied to financial performance, many others appeared to have zero or negative correlation.
5. Jack Robinson and Charles Collins, "The Performance Impact of an Environmental Screen," Winslow Management/Eaton Vance, 1994. Stock prices of two portfolios of companies were compared over a 22-year period. The more environmentally friendly portfolio outperformed the less environmentally friendly portfolio by 70 basis points each year, 15.0% to 14.3% over the 22 year period.



International**U.S. and Mexico Create Border XXI Program**

The United States and Mexico have agreed to expand binational efforts to address environmental, public health and natural resources problems faced by more than 10 million people who live on either side of the border. Environmental and health problems have accelerated with rapid population and industrial growth in the region, an area extending for almost 2,000 miles and 62 miles on each side of the border. The region encompasses parts of four U.S. states (CA, NM, AZ, TX) and six Mexican states.

Announced in December 1996, the new five-year program called "Border XXI" is the product of four U.S. agencies—EPA, USDA, Health and Human Services, and Interior—and two Mexican departments—the Secretariat of Environment, Natural Resources and Fisheries and the Secretariat of Health.

The program's objectives include:

- ▶ promoting pollution prevention and recycling;
- ▶ reducing and responding to health problems arising from exposure to chemical, physical, and biological agents;
- ▶ building or upgrading wastewater and drinking water systems;
- ▶ reducing air pollution in innovative ways; and
- ▶ promoting economic incentive programs for reducing pollution more quickly and cost-effectively.

The plan calls for expanded public participation, greater involvement of tribal nations and state agencies, and enhanced coordination by government agencies. The "U.S.-Mexico Border XXI Framework Document" is available on the U.S.-Mexico home page at <http://www.epa.gov/usmexicoborder>. For further information, call 800-334-0741.

Joint Implementation Initiative Announces New Projects

In December 1996, the U.S. Initiative on Joint Implementation (USIJI) announced its third round of projects. USIJI is a pilot program encouraging U.S. private sector participants to use their resources and innovative technologies and practices to reduce greenhouse gases and to promote sustainable development worldwide. The program works by pairing up businesses and nongovernmental organizations in the United States with their counterparts in developing and transitional countries.

The seven new projects involve 11 U.S. partners and nine foreign partners and are located in Belize, Honduras, Mexico, Bolivia, Panama, and the Russian Federation. Project technologies include: biomass waste to energy; experimental cultivation of a salt-tolerant plant that could be used as a food source; forest preservation, regeneration, and sustainable management; and retrofitting a district heating system with automated controls for energy conservation and emissions reduction.

The USIJI Evaluation Panel is co-chaired by the Department of Energy and EPA with representation from other federal agencies. Initiated in October 1993 as part of President Clinton's Climate Change Action Plan, the two previous rounds resulted in the selection of 15 projects in six countries. Businesses interested in joint implementation opportunities should contact Elmer Holt at DOE, 202-586-3248.

Chicago and Santiago, Chile Join Forces for Clean Cities

The cities of Chicago, IL and Santiago, Chile have created a historic partnership under the U.S. Department of Energy's Clean Cities Program to promote clean transportation fuels such as natural gas and renewable energy in their metropolitan areas.

Continued on next page



International

Clean Cities is a voluntary program which encourages communities, businesses and non-profit organizations to pledge to incorporate alternative fuels and alternative-fueled vehicles into their local operations. This international pact will lead the way in extending the benefits of the program to other nations and expanding market opportunities for U.S. alternative fuel companies. More than 100 companies and organizations now participate in Chicago's program, with over 3,000 alternative-fueled vehicles.

"No Waste by 2010" says Canberra, Australia

In a draft Waste Management Strategy, the city of Canberra, Australia sets forth its goal of a no-waste society by 2010 and describes it as "ambitious but achievable by a community that is committed to conserving resources and protecting the environment." Developed after a series of local workshops and forums, the strategy seeks to avoid the costs of building new landfills and help Canberra become more environmentally responsible. The strategy calls for a number of actions by which waste generation can be eliminated 100 percent, including: the introduction of mandatory waste audits before development approvals and encouraging cleaner production methods and better landscape choices (15%); developing and disseminating information and incentives that will allow consumers to make well informed choices (25%); developing new resource recovery technologies, new industries, and new markets for recovered resources (60%).

To view the strategy, visit Canberra's home page on the Web, at: <http://actg.canberra.edu.au/actg/dus/csg/org4/act12/wastestr.htm>.

Going Public on Polluters in Indonesia

Indonesia has introduced an initiative called PROPER PROKASIH, a program for pollution control, evaluation, and rating. Under the program, companies are assigned environmental performance

ratings which are made public. The objective is to use public disclosure to increase compliance with environmental regulations and create incentives for polluters to improve their environmental management. Developed by Bapedal, the Indonesian Environmental Impact Management Agency, the program assigns a color rating to each participating company, as follows:

Gold: Factories or business activities that use best available clean technology; promote zero discharge of pollutants; and conduct environmental impact management efforts with very satisfactory results. Gold factories should provide a strong example for others.

Green: Factories or business activities that conduct environmental impact management efforts and achieve better than standard results. Over the years, criteria for green companies will be adjusted to meet the internationally-accepted ISO 14000.

Blue: Factories or business activities that comply with all regulations.

Red: Factories or business activities that apply some environmental management effort but not sufficiently to comply with regulations.

Black: Factories or business activities that apply no environmental management effort and whose activities cause serious environmental degradation. Publicizes environmental performance ratings for individual companies.

According to David Wheeler and Shakeb Afsah with the Policy Research Department of the World Bank, the PROPER program is already producing results. Since June 1995 when a pilot program was put into effect, the number of companies in the red category has dropped 32%, while the blue category has increased 54%. Five of the 187 participating companies remain in the green category, and no company has yet achieved gold status. Indonesian officials gave companies in the bad colors six months to improve before publishing their ratings.

Wheeler and Afsah note that PROPER is the first program of its kind in a developing country and is particularly suited to developing countries in which legal enforcement of pollution control standards is difficult.

Five Years Later

On June 23-27, the United Nations General Assembly will hold a Special Session on Agenda 21, five years after the 1992 UN Earth Summit in Rio de Janeiro, Brazil. Governments will take stock of progress and further their commitments to Agenda 21, the document of environmental protection and sustainable development agreed to at the Earth Summit. Contact Jim Sniffen, United Nations Environment Programme, tel: 212-963-8094; fax: 212-963-7341; e-mail: sniffenj@un.org



International

ISO 14000 Comes to EPA

As interest and activity related to the new ISO 14000 standard increases, EPA's involvement is on the rise as well. EPA Offices and Regions are testing the potential utility of environmental management standards (EMSs), including the ISO 14001 EMS, and their relationship to improved environmental performance, enhanced compliance, and pollution prevention. (The 14001 standards on

expected to be issued in June.

EPA's Pollution Prevention Division (PPD), which administers the network within EPA, views ISO and EMSs in general as potentially powerful tools to achieve pollution prevention goals. ISO 14000 standards present the opportunity for industry to cost-effectively accomplish the goals of pollution prevention via a multi-media approach that can integrate

business goals and environmental objectives. PPD is working with a Multi-State Work Group to develop ways to quantify the still unclear relationship between an EMS and actual environmental performance. The work group is developing a matrix of performance indicators to test the impact of an ISO 14001-based EMS in pilot projects across ten states.

PPD is also working with the National Pollution Prevention Roundtable to develop segments on pollution prevention that can be incorporated into ISO 14000 auditor training courses. The 14001 standard specifies commitment to "prevention of pollution" as a required element of an organization's environmental policy. The Roundtable and PPD hope to inculcate the pollution prevention hierarchy into the normal, accepted approach that any organization would take in order to meet the

requirement of the standard.

ISO guidance standards for labeling, life cycle assessment and environmental performance evaluation are also receiving close attention by EPA as they near publication. There are concerns about how these standards will impact EPA's efforts in consumer labeling and EPA's positions on World Trade Organization matters.

For more information, contact Mary McKiel at 202-260-3584 or Eric Wilkinson at 202-260-3575. On the Web, see www.iso14000.org.

Getting Certified

Companies worldwide are scrambling to understand the new ISO environmental management systems standard and to obtain certification. The first of the international standards on environmental management were published in September 1996. ISO 14001 certification means that an independent auditor has determined that a company is managing its activities that impact on the environment in accordance with the standard's requirements.

With all the interest in the standard, ISO has published new guidelines to help businesses and other organizations which have achieved ISO 14000 certification avoid making false or misleading claims in advertisements and other types of announcements. Among misleading practices that ISO wants to avoid are:

- ▶ Misuse of the ISO logo, which is a registered trademark.
- ▶ Giving the false impression that it is ISO which has issued a certificate. (Certification to ISO standards is carried out independently of the ISO organization.)
- ▶ Giving the false impression that ISO 14000 is a product standard signifying that a particular product is environmentally friendly.

Of course, businesses and other organizations that invest time, energy, and money to obtain ISO certification understandably wish to publicize their achievement. To help them do so, ISO has produced a free leaflet, *Publicizing your ISO 9000 or ISO 14000 certification* (ISBN 92-67-10249-4), available from the American National Standards Institute (ANSI), 212-642-4900.

management systems and its accompanying guidance standards, 14004, along with the auditing standards are already published and available.)

EPA's Voluntary Standards Network is responsible for developing and coordinating Agency policies and participation in voluntary standards, including ISO 14001. This coordination ensures that the Agency speaks with one voice on important issues and activities as they pertain to standards, EMSs, and ISO 14001. A formal, coordinated EPA position on ISO 14001 is



Consumers

Environmentally Preferable Products

EPA's Environmentally Preferable Purchasing Program promotes federal purchasing of goods and services that have reduced impacts on human health and the environment. The goal is to make environmental performance a factor in purchasing decisions, along with product performance and cost. An update on the EPP program (EPA 742-F-96-002) and a number of other documents mentioned below are available from the Pollution Prevention Information Clearinghouse, tel: 202-260-1023, fax: 202-260-0178.

As the update describes, a number of pilot projects currently underway are providing hands-on experience and insights for the program to build on. Pilot projects include partnerships with the Department of Defense (interior and exterior renovations at the Pentagon) and the General Services Administration (GSA) for cleaning products and latex paints.

The joint EPA/GSA Cleaning Products project has identified seven attributes of the environmental performance of cleaning products. They are:

- ▶ skin irritation
- ▶ food chain exposure
- ▶ air pollution potential
- ▶ fragrances
- ▶ dyes
- ▶ packaging reduced/recyclable
- ▶ minimal exposure to concentrate

A complete matrix evaluating commercially available, biodegradable cleaners and degreasers against these seven attributes is printed in GSA's February, 1996 *Commercial Cleaning Supplies* catalog, which is being updated. (For a copy of the complete matrix, call 1-800-241-7246.) Since 1993, the federal government has procured over \$12.2 million worth of biodegradable cleaning products. The GSA/EPA team is attempting to quantify the project's effect on these purchasing decisions.

A report on the *Cleaning Products Pilot Project* (EPA 742-R-97-002, February 1997) has been issued, which discusses the progress of the project as well as lessons learned. The report concludes that inter-

How States and Counties Purchase Green

A Study of State and Local Government Procurement Practices that Consider Environmental Performance of Goods and Services (EPA 742-R-96-007, Sept. 1996) reports on interviews conducted with purchasing staff in four states (Maine, Minnesota, Washington, and Wisconsin) and two counties (King County, WA; San Diego, CA) from December 1995 to June 1996. The agencies interviewed expressed a commitment to buying recycled content products, but much less focus on products based on other environmental factors such as energy efficiency or source reduction, although this may be changing.

Researchers found that one of the most important factors for the success of a recycled products procurement program is the enthusiasm and commitment of the person(s) in charge of the program. This is especially so since in most places the structure for making decisions about environmentally conscious procurement is not well defined. Thus, for example, in King County, purchasing coordinators play a key role in contacting and influencing staff in customer agencies about procurement decisions. By contrast, San Diego County has developed a computerized requisitioning system which guides county agencies to purchase a recycled product if it has been deemed a suitable substitute for a virgin product.

So far, copier paper with recycled content is the only product purchased by all of the agencies interviewed and is becoming more the rule than the exception. Nevertheless, the cost of recycled paper (and other recycled content products) remains an important barrier to widespread procurement of these products.

agency teamwork ultimately produces better results, even though it may take additional time to work through differences in approaches and perspectives. An unexpected difficulty encountered in the course of the pilot project was identifying all of the stakeholders. As new stakeholders appeared, significant time was spent explaining, defending, and modifying decisions made earlier in the process. Another lesson learned was that the input of customers — the federal agency personnel who purchase cleaning products — was invaluable. Nevertheless, information dissemination is slow because government procurement is becoming increasingly decentralized. One GSA official compared changing the government's procurement procedures with turning the Queen Mary cruise ship in a bathtub: "It's not impossible, it just takes time and patience."

For more information about the EPP program, contact Eun-Sook Goidel, fax: 202-260-0178, or by e-mail at: goidel.eunsook@epamail.epa.gov.

Continuations

1995 TRI Data

Continued from page 1

pounds, a 45.6% decline. However, total waste generated in 1995 from all TRI chemicals was over 35 billion pounds, a 7% increase since 1991. Federal facilities, reporting to TRI for the second year, showed a 23.6% decrease in releases from 1994 to 1995, although 49 (25%) fewer federal facilities filed reports in 1995. Reasons for non-filing will be examined over the coming weeks; non-filers may represent closures of military installations or facilities that adopted of pollution prevention measures that lowered the usage of TRI chemicals below reporting thresholds. More information on TRI data is available from EPA's hotline at 1-800-424-9346 or online at www.epa.gov/opptintr/tri.

TRI Expansion Signed on Earth Day

Earth Day 1997 (April 22) saw the signing of a final rule by EPA Administra-

tor Carol M. Browner that increases by about 30 percent the number of industrial facilities required to participate in the community right-to-know program. The additional 6,100 facilities in seven industrial sectors will be required to make annual reports of the amount of toxic chemicals they release into the air, water, and land to EPA's Toxics Release Inventory (TRI).

The seven new industrial categories are: metal mining, coal mining, electric utilities, commercial hazardous waste treatment, petroleum bulk terminals, chemical wholesalers, and solvent recovery services.

In addition, 700 chemical manufacturing facilities which already report right-to-know information to the TRI will also be required to report on additional types of pollution, such as hazardous waste treatment activities. The expansion, originally proposed in June 1996, brings to a total of 31,000 the number of facilities participating in TRI.

Great Lakes

Continued from page 1

The Great Lakes contain 18 percent of the world's fresh surface water. The region is home to 33 million people in the U.S. and Canada, nearly half of whom draw their drinking water from the Lakes. Despite their depth and size, the Great Lakes are particularly vulnerable to toxic contaminants because the contaminants remain in the system for many years. Many of these pollutants are long-lasting and bioaccumulate, becoming more concentrated as they move through the food chain from plants to fish to wildlife and people. Toxic contaminants are present in the Great Lakes at unacceptably high levels, making some fish unsafe to eat, presenting a continued human health risk and suppressing the economic potential of the fisheries' industry. Today, there are fish consumption advisories in all of the Great Lakes states, based primarily on PCBs, mercury, and toxaphene contamination.

Environmental Justice

Continued from page 3

and environmental impacts in low-income neighborhoods. One Region 9 project focused on Korean-American dry cleaners who make up close to 70 percent of the industry in the greater Los Angeles area, and roughly 60 percent of the industry nationwide. The project brings together the Korean Youth & Community Center, UCLA's Pollution Prevention Education and Research Center, and Clean by Nature (Southern California's first 100 percent wet cleaning shop) to develop a wet cleaning outreach and education program.

In Region 6, the National Center for Appropriate Technology received \$236,442 for outreach efforts to Hispanic-American farmers and rural communities in the Texas Panhandle who often suffer from disproportionate exposure to pesticides. The project is designed to increase access to and use of practical technical information on integrated pest management and other sustainable agriculture practices.

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Enforcement

Finding Pollution Prevention Opportunities

Targeting industries and processes that are ripe for pollution prevention is the subject of a new report, *Identification of Pollution Prevention (P2) Technologies for Possible Inclusion in Enforcement Agreements Using Supplemental Environmental Projects (SEPs) and Injunctive Relief*, prepared by Nicholas A. Ashford and Dimitrios M. Stratikopoulos of the Massachusetts Institute of Technology for EPA's Office of Compliance. The report describes an approach for identifying and applying promising technologies for 12 industrial sectors, processes, and product lines that can be promoted as part of enforcement settlements (see box).

In addition, the report lays out a framework and method for screening the vast numbers of industries and industrial processes for ones that present a high potential for tangible environmental benefits if P2 technologies are implemented.

The report's authors note that sectors or processes characterized by "technological stagnation" often have huge potential for progress in pollution prevention, and present "an obvious choice for regulatory intervention encouraging technological progress." Another major finding is that there are a small number of generic technologies widely used in many SICs where pollution prevention options can significantly enhance the environmental profile of many companies. These technologies include alternatives to vapor degreasing and paint removal.

For copies of the report, (EPA 300-R-97-00), call the National Center for Environmental Publications and Information in Cincinnati, Ohio at 1-800-490-9198 or the National Technical Information Service in Springfield, Va., at 703-487-4650. The report may also be downloaded from the Internet at <http://www.epa.gov/oeca>.

SIC Code/Process	Technological Options	Payback Period
334: Lead smelting	Use of an improved design mold eliminates the cutting process and results in less scrap to be smelted	< 18 months
2869: Batch organic chemicals manufacturing	Ultrasonic cleaning system chemicals replace the use of solvents and caustic	Fast
2819: Hydrochloric acid production	Installation of an acid gas adsorption system	Fast
2821: Polypropylene production	Vinyl Acetate (VA) recovery system	2.5 years
2865: Manufacturing of plasticizers	Recycling of distillation overhead of plasticizers waste and installation of on line analyzers to reduce by-products	~ 8 years
2911: Petroleum refining	Installation of an oily water treatment unit to remove insoluble emulsified oil from the desalter wash water	~ 3 years
3471: Surface finishing of fabricated metal products	Installation of an aqueous cleaning system eliminates the use of TCA	1.4 years
285: Manufacturing of colorants	Installation of additional mill chambers and pumps to reduce the frequency of cleaning and the amount of purge generated	< 1 year
34-35-36-37 Vapor degreasing	Use of an aqueous wash system instead of TCA	2.5-3 years
34-35-391 Metal plating	Wastewater purification and metal recovery	3 years
28-35-36-37 Paint removal	Use of a cryogenic process for paint removal from steel structures, substitutes the use of acids or pyrolytic oven	< 1.5 years
285-34-35-36-37 Painting of metal parts	Substitution of solvent based paint with powdered paints	< 1 year



Calendar

DATE/SITE	EVENT	SPONSOR	CONTACT	E-MAIL/WWW
June 10-21 Medford, MA	Tufts Environmental Literacy Institute (course)		Tel: 617-627-3464 Fax: 617-627-3099	ulsf@infonet.tufts.edu; http://www.ulsf.org
June 13-15 Kauai, HI	Clean Oceans '97	Save Our Seas	Tel: 800-767-4101	http://planet-hawaii.com/sos/
July 8-11 Saratoga Springs, NY	1997 ACEEE Summer Study on Energy Efficiency in Industry	ACEEE, NYSERDA, EPA, DOE	Tel: 202-429-8873 Fax: 202-429-2248	Debbie Giallombardo ace3-conf@ccmail.pnl.gov
July 16-17 Baltimore, MD	Partnership for the 21 st Century: Greening Federal Purchasing	EPA, Office of the Federal Environmental Executive	Richard Kochan, U.S. Conference of Mayors	Tel: 202-822-9058 Fax: 202-429-0422
July 28-30 Chicago, IL	1997 Federal Facilities Multi-Media Compliance/Pollution Prevention Conf.	EPA, Region 5	Tel: 312-886-5031 Fax: 312-353-5374	Pons Angara
Aug. 17-22 Crested Butte, CO	The Practice of Pollution Prevention: A Critical Evaluation	Engineering Foundation	Tel: 212-705-7836 Fax: 212-705-7441	engfnd@aol.com http://www.engfnd.org
August 26-28 Atlanta, GA	13th Annual Pollution Prevention Conf.	DOE	Andrea Fletcher 888-660-P213	http://www.P2XIII.org p2xiii@groupz.net
August 26-29 Palm Beach, FL	12th Annual Aerospace Hazardous Materials Management Conf.	Aerospace Industries Assn.	Tel: 303-690-4245 Fax: 303-693-5152	http://www.summits.com/AIA97
September 7-11 Washington, DC	Toxic Release Inventory/Right-to-Know Data Use Conference	Unison Institute	Tel: 202-234-8494 Fax: 202-234-8584	Jeff Thomas thomasje@rtk.net
September 24-25 Cincinnati, OH	Streamlining Life Cycle Assessment	EPA	Tel: 919-541-6973 Fax: 919-541-7155	Keith Weitz kaw@rti.org
Oct. 7 Oak Lawn, IL	8th Annual Pollution Prevention Conference & Tech Fair	Illinois EPA, WMRC, ComEd	Annette McCarthy 217-782-8700	

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