United States Environmental Protection

Office of Public Attains (A-107) Washington, DC 20480

SEPA JOURN

Aunder 6. November Désember 1982

A New Year for the Environment

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Future Directions

In this issue of the Journal, we take a look at the course the Agency is charting for next year.

Administrator Anne M. Gorsuch pledges stronger and more efficient management in the quest for environmental improvement. Protection of human health will also continue to be a top priority, she notes.

In the article the Administrator also reports some of the accomplishments and gains the Agency has made in the past year. This issue also carries reports on what EPA's Assistant Administrators and Regional Administrators expect for their programs in the coming year.

Another article reports on a major breakthrough by EPA in implementing the Clean Water Act and one which will have a considerable impact in the year ahead. The action was the publication of guidelines and standards to control pollution in wastewater discharged by major industries such as iron and steel mills, textiles, inorganic chemicals, and coal mining.

Administrator Gorsuch said as part of the Agency's responsibility to protect the environment and health of the American people "we had to get these regulations moving. Good intentions are admirable, but they don't do a thing to safeguard our waterways."

She also said that "we don't want to, and we don't have to, achieve cleaner water by closing down factories. Nobody wins in that case. We want to establish realistic requirements that will protect both the economy and the environment, and we are doing that in these regulations."



Other articles in this issue include:

A report on a new portable device which can be carried by individuals to check on levels of carbon monoxide pollution at various locations. A review of the Agency's

enforcement strategy.

A report on development of environmental policy.

A summary of new steps being taken in the toxics and pesticides programs.

An explanation of what the Federal government is doing about acid deposition research. United States Environmental Protection Agency Office of Public Affairs (A-107) Washington, DC 20460 Volume 8 Number 6 November-December 1982

SEPA JOURNAL

Anne McGill Gorsuch, Administrator Byron Nelson III, Director, Office of Public Affairs Charles D. Pierce, Editor

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EPA hits stride in controls for industry wastewater

EPA is charged by Congress to protect the Nation's land, air and water systems. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions which lead to a compatible balance between human activities and the ability of natural systems to support and nurture life. The EPA Journal is published bi-monthly by the U.S. Environmental Protection Agency. The Administrator of EPA has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Agency. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget through 4/1/84. Views expressed by authors do not necessarily reflect EPA policy. Contributions and inquiries should be addressed to the Editor (A-107). Waterside Mall, 401 M St., S.W., Washington, D.C. 20460. No permission necessary to reproduce contents except copyrighted photos and other materials. Front Cover: Snow blankets Virginia's Shenandoah Valley under a cloudswept sky.

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The EPA Journal will become a quarterly in 1983. The annual rate for subscribers in the U.S. is \$7.50. The charge to subscribers in foreign countries is \$9.40. The price of a single copy is \$2.50 in this country and \$3.15 if sent to a foreign country.

Subscriptions to EPA Journal, as well as to other Federal Government magazines, are handled only by the U.S. Government Printing Office. Anyone wishing to subscribe to the Journal should fill in the form and enclose a check or money order payable to the Superintendent of Documents. The request should be mailed to: Superintendent of Documents, GPO, Washington, D.C., 20402.

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A New Year for the Environment

Forecasts by

The View From the Top

The close of an old year and the start of a new is traditionally a time for assessing past performance and setting goals for the future. In keeping with this tradition, EPA's top leaders offer perspectives on the new year.



Anne M. Gorsuch

EPA Administrator Anne M. Gorsuch anticipates stronger and more efficient management to achieve the goal of environmental improvement. The Administrator said that changes already taking place, and which will pick up speed in the months ahead, include:

Strategies to give priority to control of the environmental hazards most harmful to human health.

Greater emphasis in the water quality standards and construction grants programs to ensure tangible improvements from the investment made.

Improved management of the Agency enforcement program, which has been facilitated by a reorganization to centralize enforcement activities. Some of the results being achieved include: improved targeting of compliance-enforcement resources to support program goals; reduction in the civil litigation backlog; and greater emphasis on achieving compliance through negotiated agreements.

Establishment of a strong criminal enforcement program which has included the hiring of 21 criminal investigators and the training of 125 technical personnel and lawyers.

Continued review of Agency regulations to streamline and reduce EPA's rules. In the construction grants program, removing procedures not required by statute to protect the environment has reduced the volume of regulations by 50 percent.

Proposed revisions in standards and other requirements affecting the auto industry resulting in the following savings: \$188-376 million from changes to nitrogen oxide and particulate standards affecting diesels; \$1.3 billion from proposed changes to statutory high altitude emission requirements; \$2 to \$5 million from reduced assembly-line testing; and \$300 million in capital costs from changes to paint standards.

Proposed workable rules for industrial pretreatment of wastewater, ending six years of proposal, litigation and negotiation. The new rules will streamline administration at the local level and focus the program on toxics with serious environmental impacts. Projected savings to industry: \$1.3 billion annually.

Exemptions proposed to relieve the chemical industry from burdensome premanufacture notification requirements for certain polymers and low volume chemicals, eliminating the need for 60 percent of premanufacture notifications. This action will reduce constraints on industry innovation and reduce EPA's workload for notifications by 50 to 60 percent.

Reforms underway in the pesticides program will reduce the registration backlogs, end delays and diminish unnecessary paperwork. EPA reduced its backlog by 30 percent during 1981 and is using more negotiated agreements and pre-decision conferences with industry to speed up the process.

Reduction by 80 percent of the volume of regulations covering grants to State and local governments, eliminating requirements which imposed an unnecessary burden.

Simplification of consolidated permit regulations to reduce the confusion in the Agency's permit programs. Further reforms are being made. For example, monitoring and reporting reductions and increases in flexibility in the Underground Injection Control Program will save an estimated \$70 million over five years.

Institution of systems which more effectively serve management's need to monitor program performance and facilitate needed program changes.

Continued emphasis on doing more with less to obtain environmental benefits.

John P. Horton Assistant Administrator for Administration



Improving the Quality and Timeliness of Services

The Office of Administration has set an ambitious agenda for 1983 — to anticipate our clients' service needs, to improve our effectiveness in meeting those needs, and to provide our services in a cost conscious manner. Among the challenges we face are:

To make our financial management systems uniform, controlled and disciplined, and responsive to the Agency's needs.

To keep up with fast-paced technology, provide premiere service and control costs in the ADP and communications areas.

To simplify and streamline the procurement process to make it easier for programs to get their products.

To develop a human resource management program to ensure the effective and productive use of EPA personnel.

To upgrade our working environment Agency-wide.

The role of the Office of Administration, together with our administrative partners in the Regions, is to help the programs get the job done — effectively and for the lowest possible cost. Frederick A. Eidsness, Jr. Assistant Administrator for Water



Effluent Control

We will continue to place strong emphasis on delegating programs to the state so that decisions are made closest to the people who are affected by them. This will include the National Pollutant Discharge Elimination System (NPDES) permit program, the pretreatment program (control of industrial discharge of pollutants into public treatment works, the Underground Injection Control Program (protection of underground sources of drinking water from injection wells), and the construction grants program.

Drinking Water Regulations

We are also in the process of revising the drinking water regulations and will be issuing regulations for Volatile Organic Chemicals (VOC) in drinking water. As we bring the VOCs under control, this program will tie directly into our further efforts to control ground water contamination through implementation of the ground water policy.

Ocean Dumping

The Office of Water will review the ocean dumping program to provide a clearly articulated Marine Protection Strategy that improves the basis for interand intra-agency consistency, provides a more supportable balance between uses of the ocean and other media, gives clear guidance to permit applicants and insures public understanding of EPA's intentions and rationales. Completion of sludge management guidance will complement this effort and help local governments make choices among alternative sludge management practices.

We are actively reviewing the 404 (B) (1) guidelines to shorten them, to streamline procedures and to reform where necessary in accordance with the Vice President's directives.

John A. Todhunter Assistant Administrator for Pesticides and Toxic Substances



Toxic Substance Operations

We expect to receive data from over 200 studies covering approximately 25 existing chemicals under negotiated test agreements with industry. We will also be initiating a new chemical follow-up program. This is being done in acknowledgement of the fact that while a particular new chemical may not pose an unreasonable risk to health or environment under the conditions of its initial manufacture, it may do so under different conditions. In additon to follow up on new chemicals, increased emphasis on risk reduction measures for existing chemicals will allow us to take rapid and effective actions in the event that we believe that specific exposures to individual chemicals should be reduced. I also expect to convene a Formaldehyde Consensus workshop next September which will bring together government, industry and academic experts to discuss various assessment methodologies and data bases involving formaldehyde.

Pesticide Operations

We will continue to pursue the reduction of backlogs in order to improve the response time for registration, special registration and tolerance reviews of pesticides. Special efforts will be taken to maintain our upward trend in the number of registration standards established and our Special Review process has been streamlined in order to improve the efficiency and timeliness of the decision making process. I expect that in 1983 the Office of Pesticide Programs' personnel will match or probably exceed their already excellent record of achieving their Regulatory Relief objectives.

A New Year for the Environment

The View from the Regions

EPA Regions predict improved air and water quality, increased cleanup and corrective activities at priority hazardous waste sites, more delegation of program responsibility to state governments, intense enforcement activities, and efforts to improve the Agency's relationship with the public for the new year.

the public for the new year. During a recent poll conducted by the *EPA Journal*, Regional Administrators were asked, "What Do You Anticipate As The Major Challenges and Opportunities In Your Region In 1983?" Here are their answers.



Region 1 Lester A. Sutton Regional Administrator

"The year 1983 will present many challenges, but also offers many opportunities to demonstrate continuing environmental progress in Region 1.

"Our major challenge will be to continue to press ahead with planning and corrective work at a greatly expanded number of hazardous waste priority sites in the six New England states."

Region 1 also has a major opportunity to complete cleanup work at a number of sites where studies and planning were first intitiated in 1982. In all, some \$20 million was spent at 15 priority sites in 1982. These totals are expected to more than double in 1983.

Another major challenge and opportunity is to accelerate efforts to delegate more program responsibilities to State partners. Region 1 has made considerable progress in returning decisionmaking authority to the states as Congress clearly intended, Sutton noted. In 1983 the Region will intensify delegation efforts in all program areas.

Other major challenges facing Region 1 - challenges that can be met - are:

• Elimination of program backlogs, including State Implementation Plan revisions, audits, payments, etc.

• Intensification of enforcement efforts, particularly in the hazardous waste area.

• An expanded outreach effort to improve relationships with elected officials, professional and trade associations, environmental groups, business and industry.

Region 2 Jacqueline E. Schafer Regional Administrator

"Region 2 is an area of extreme environmental contrast, from the highly industrialized Niagara Frontier to the mangrove wetlands of Puerto Rico. We expect to continue to find ourselves in the forefront of discovering solutions to unique problems.

"The new year will provide an opportunity to further the Agency's goals of improved management, regulatory reform and delegation of authority and responsibility to the States for management of environmental programs.

"In particular, Region 2 will be challenged by the greatest number of Superfund hazardous waste sites in any region — up to a fourth of the final national priority list of 400. We will need to apply the most efficient management possible in these vital removal and remedial programs."

In addition, 1983 will see an emphasis on expanding Resource Conservation and Recovery Act permitting. Most of Region 2's state delegations have been completed and work will continue on the remaining delegations during the year. Enforcement objectives will be to encourage prompt voluntary compliance while dealing fairly and firmly with significant violators, using all of the enforcement tools available: informal, administrative and judicial.

Region 3 Peter N. Bibko Regional Administrator

Region 3's most important opportunity in 1983 will be to achieve real environmental results rather than measuring performance by counting beans.

"In order to do this, we are concentrating our efforts on several longstanding environmental problems. For example, finding a final solution to sewage sludge disposal, particularly in the Philadelphia and Washington, D.C. areas. We will also be working with the states to develop a resources managment plan for Chesapeake Bay, using the results of our recently completed five-year study."

Increasing compliance with the law will now be the most important goal of Region 3's enforcement program. Enforcement resources will be focused on those violators whose noncompliance is causing real environmental harm. Whenever possible, voluntary compliance will be the goal, since this usually results in swifter cleanup than extended litigation. However Bibko said Region 3 will use "the full force of the law when polluters continue to act in bad faith."

Better public understanding of the hazardous waste problem is another priority. More public understanding will enable Region 3 to better implement the hazardous waste management provisions of the Resource Conservation and Recovery Act as well as cleaning up old hazardous waste dump sites under the "Superfund" law.

"Many of our actions have been misunderstood by public interest groups, and this has actually hindered our efforts to improve the environment. Consequently, our greatest challenge in 1983 will be to gain better understanding and support from environmentally concerned citizens. This is an essential ingredient in our efforts to provide more efficient environmental regulations for future generations of Americans."

Region 4 Charles R. Jeter Regional Administrator

"The diversity of Region 4 always produces many challenges and opportunities.

"We have a high degree of delegation to the states in the Southeast. Working relationships with them are quite good and we continue to develop our oversight role to assure strong, consistent implementation of Federal programs without duplicative use of resources,"

The municipal wastewater treatment plant construction program in Region 4 has matured to the point where emphasis for 1983 should be to complete construction of plants, wrap up final inspections and audits quickly, and assure compliance with permits.

Many dredge and fill projects in the Region's wetlands will be considered this year and will require a closer working relationship with the many other agencies involved to make accurate and timely decisions.

Permit issuance required under the hazardous waste provisions of the Resource Conservation and Recovery Act is rapidly gaining momentum. Effective program delegation will be a challenge for both permit issuance and enforcement activities. The closely related Superfund program offers real opportunity for obtaining environmental improvement if all available cleanup mechanisms are used.

"Now that our State Implementation Plan backlog has been eliminated, we will concentrate on preventing new backlogs from being formed. Past programs to assure compliance for significant air pollution sources must continue if we are to maintain good air quality in the face of industrial and population growth.

"Finally, we expect opportunities to impact national policy in the radiation program area. New nuclear reactor construction and startup of old reactors are on the fiscal year '83 agenda, and we still have a continuing dialogue on radioactive waste disposal."

Region 5 Valdas V. Adamkus Regional Administrator

"How to do more, better, with less, through close cooperation with the regulated community and increased program delegation to our States represent both major challenges and opportunities for heavily industrialized Region 5. Compliance activity, and enforcement action where required, will receive equal attention as we strive to strengthen the environmental quality of life for residents in our six Midwestern states."

The Resource Conservation and Recovery program provides new opportuniites to work with states on permit requirements, the implementation of new requirements related to financial responsiblity, and groundwater monitoring. Approximately 25 percent of the list of 400 top hazardous waste sites to be published in fiscal year 1983 will be in Region 5. High priority will be given to the aggressive pursuit of privately financed cleanups such as those accomplished at Seymour, Chem-dyne, and Gratiot County, thereby making remaining Superfund monies available for undertaking remedial response actions at other environmentally threatening sites.

"In water programs, new regulations in Water Quality Standards, construction grants, and the soon to be launched Underground Injection Control program will require an intensified cooperative effort with our states, while working at the same time toward increased program delegation. An international challenge, shared with our Canadian neighbors to improve the Great Lakes water quality, will be addressed through the Great Lakes Agreement with focus on Lakes Superior, Michigan, Huron and Erie.

"In air programs, too, more authority will be turned over to other states. Key efforts will be aimed at reducing vehicle emissions in eight urban areas currently unable to meet clean air standards. Protection of pristine air areas from significant deterioration and reduction of overall emissions in highly industrialized areas are key goals, along with continued improvement and streamlining of our SIP process.

"All of these challenges, successfully met, will result in real, measurable improvement in the quality of life for Midwestern citizens."

Region 6 Dick Whittington Regional Administrator

"The major challenges facing EPA as we enter 1983 are to complete the improvements to the Agency organization we now have underway and to create an atmosphere of reasonableness and cooperation between the Agency, the regulated community and the State agencies.

"I believe that if we do meet those challenges, we will keep not only EPA but the environmental movement in this country alive and well. If we fail, I am convinced, in the long run we will lose our credibility and ultimately our strong base of public support for environmental quality.

"The 1980s present major opportunities in the areas of sorting out the sound from the unsound in environmental law and regulation, in abandoning the unnecessary while retaining the needed, in developing a more cooperative relationship at all levels of government and in utilizing shrinking resources to attain the best environmental results for the dollars spent.

"Only through this shift in our direction can we assure the American people of clean air, clean water and clean land.

Region 7 Morris Kay Regional Administrator

The major environmental challenge in 1983 for Region 7 will be to deal effectively with the various known and potential sites in the State of Missouri where the presence of dioxin has been confirmed or may exist.

'The current activities are the legacy of events that occurred in the early 1970s. At that time, a now defunct company was engaged in the manufacture of hexachlorophene at a facility in southwest Missouri. During the manufacturing process, dioxin was formed as an unwanted by-product, and residue containing this dioxin was stored in a tank at the plant.

"During 1971 a waste oil dealer in Missouri picked up several shipments of the residue containing dioxin, apparently mixed it with waste oil and sprayed it for dust control at numerous locations in the State of Missouri. Several horse arenas were among the sites sprayed and shortly thereafter many horses as well as other exposed animals died.

"As a result of leads that have emerged from investigations conducted by the Center for Disease Control, EPA and the State of Missouri, an increasing number of sites have been identified as possibly having been sprayed with dioxin-contaminated oil. Sampling has confirmed the presence of dioxin on at least 14 sites, and more than 40 other potential sites are being investigated and, where deemed necessary, are being sampled. Throughout this intensive field effort, EPA is working very closely with state environmental and health officials.

"One of the major challenges as work continues will be to avoid unduly alarming the public while investigating suspected dioxin sites and finding the most cost-effective means of taking necessary remedial action at those sites where the presence of dioxin is confirmed. Toward this end, regional personnel will be meeting frequently with local residents and striving to provide citizens and the media with factual, current information as it becomes available."

Region 8 Steven J. Durham Regional Administrator

"We in Region 8 look forward to 1983 with a sense of anticipation and optimism. While there are several major challenges facing us in the upcoming year, we are confident we can meet those challenges and do so with fewer resources.

"Superfund-related issues are likely to occupy a lot our time in 1983. The Region has seven sites on the interim priority list, with more expected to be included on the final 400 list. The Region has already signed cooperative agreements on three of the sites which will achieve environmental results at no cost to the taxpayers, and hopefully, we can make similar progress in 1983 on such sites as the Denver radium sites and Marshall landfill near Boulder, Colo. Air quality in Denver and Salt Lake City, the Region's two population centers, also is expected to be a major concern. Residents of the two cities are going to have to make some tough decisions if the cities are to meet clean air standards for carbon monoxide and ozone.

"One thing we look forward to in 1983 is the opportunity to wisely allocate existing resources to achieve greater productivity, which in turn should lead to better environmental protection. We must learn to live with a leaner budget and fewer people, but I am optimistic that through streamlined management, we can meet the challenge.

"In short, 1983 should be a year of achievement in which both the environment and the American taxpayers are the big winners."

Region 9 Sonia F. Crow Regional Administrator

"Region 9 will enter 1983 in full expectation of achieving major accomplishments in State-EPA relations and environmental results. As a result of our developmental efforts in 1982 — the reorganization, accountability systems, and the elimination of backlogs — we are now in prime position to realize the opportunity for well managed environmental programs, implemented at the state level, to protect public health.

'The major program challenges Region 9 will face in 1983 are:

• Completion of the installation of authorized hazardous waste regulatory programs in the States and the State development of new treatment technologies and disposal facilities. At the same time, the joint EPA-State site cleanup under Superfund will be continued.

• Passage of the auto inspection program in California provided the air program with a major tool but the implementation, on the vast scale of California presents a challenge in 1983. The Clean Air Act deadlines will present many uncertainties; the challenge is to provide stability, consolidate gains, and continue to make progress in emissions reductions.

• The protection of the ocean environment will be a priority challenge as the new provisions for ocean discharge waivers and the termination of sludge discharge are implemented.

"On balance, our challenges are major, but Region 9, in concert with our states, will capitalize on our opportunities to make a positive difference to the environmental quality of our beautiful Region."

Region 10 John R. Spencer Regional Administrator

"Improving the quality of drinking water in Oregon is one of the most important goals for Region 10 in 1983. The need for improvement is abundantly clear: In Oregon, the incidence of reported waterborne disease outbreaks, on a per capita basis, was the second worst in the country for the period 1971 to 1980.

"The situation will not change until Oregon adopts a properly funded State program that will overcome the accelerating breakdown of the water supply infrastructure in Oregon. There is a serious shortage of qualified personnel to operate the water systems. Treatment of drinking water is often inadequate or non-existent. Facilities need replacement or upgrading.

"Once the State of Oregon assumes surveillance and enforcement responsibility for the Safe Drinking Water Act (so far, it has not done so), there is a better chance that all the 900 or so community water systems in Oregon will regularly sample their water and test the water for purity.

"It's a sad fact that slightly more than 130 system operators ignore this requirement, with the result that all too many Oregonians have no way of knowing whether their water is safe to drink. People in Oregon simply cannot take their drinking water for granted."

Common Sense in Pesticides and Toxics Control

by Dr. John A.Todhunter, EPA Assistant Administrator Pesticides and Toxic Substances

Over a year ago when I testified before Congress during my nomination hearings, I stated that I saw my nomination as an opportunity to contribute to two goals which I believe are vital to the future of the Agency: protection of the public health and the environment and cultivation of sound science as a data base for regulatory decision making. Since that time, I have seen considerable progress towards these goals.

In assuming responsibility for the pesticide program, I recognized that protecting health and the environment meant reducing backlogs of actions on pesticides and improving turnaround times to meet statutory deadlines. The Presidential Task Force on Regulatory Relief reinforced these goals and provided impetus and focus for this policy direction.

The emphasis of the Task Force was that the system should be made more efficient and less burdensome, but without changing its basic function of ensuring that pesticides marketed in this country meet standards adequate to protect public health and the environment.

In addition to these basic concerns, I recognized the importance of improving both industry and public perception of the Agency's credibility by taking a nonadversarial approach to problem solving, and ensuring that regulatory decisions rest on a firm foundation of scientific evidence. We have taken a number of positive steps to lessen the negative effects of an adversarial stance toward industry while retaining a firm control posture.

We are now conferring with pesticide registrants at the beginning of the registration process which establishes a clear understanding of what will be required and avoids later misunderstandings. The Agency is also negotiating with registrants to the extent possible to resolve individual chemical problems. The goal is to come to quick, voluntary label changes which achieve appropriate risk reduction measures without expensive, time consuming formal review procedures.

Negotiations also play a big part in EPA's investigative process into pesticides called Rebuttable Presumption Against Registration (RPAR). This formal review involves weighing risks and benefits of pesticides suspected of causing unreasonable adverse effects to human health and the environment. The burden of rebutting evidence that a particular pesticide causes unreasonable risks rests with the company registering the product. Ultimately, based upon negotiations with the registrant to reduce exposure, if possible, and upon all the evidence needed to make a scientific decision, the agency does one of three things: Allows the pesticides unrestricted use, imposes some restrictions or bans the product outright.

During the past year, we have been able to conclude 15 RPAR's. Among these is the recent decision to ban most uses of toxaphene. This action finally resolved five years of internal review by facing up to and dealing with significant environmental problems that toxaphene poses: Chronic effects on fish, birds, and mammals; acute toxicity to acquatic organisms and animal tests which suggest that toxaphene could be an oncogenic (tumor) risk to humans.

Important savings for the Agency may be possible by involving the industry in developing the documents for Registration Standards, which establish the health and safety data requirements for registering or reregistering pesiticide products based on a specific active ingredient. A pilot program involving five companies is presently underway.

We have streamlined and improved a number of pesticide registration procedures to reduce backlogs, cut down on the number of times the industry needs to interact with the agency, achieve speedier decisions and thus facilitate the registration process. Some of these actions are:

• expanding the policy of waiving the submission of performance of effectiveness data for the registration of all non-public health use products;

 the elimination of agency approval for supplemental registration by different firms marketing the same product for identical uses;

 modifying the testing requirements for child-resistant packaging to simplify them while maintaining a practical level of protection;

• and eliminating agency review of final printed labels.

Not only have backlogs been overcome, but we have reviewed and reached decisions on 68 percent more new chemicals this year than last, on 56 percent more old chemicals and 61 percent more tolerance petitions (residues of pesticides allowed to remain on raw food or feed products).

The pesticides industry expressed strong concern about the potential burden and inflexibility of data requirements imposed as rules. I decided that flexibility could be introduced into the requirements by separating testing protocols from data requirements, resulting in two packages.

The first is a rule setting out the "when" and "what" of data requirements for various types of pesticides and use patterns. This rule sets down for the first time in a clear, concise, and usable form, the data which the Agency requires to support pesticide registration. In terms of regulatory relief, this new rule is principally an efficiency measure, which gives the industry the benefit of knowing exactly what the Agency requires for registration.

The second package will consist of testing protocols, the "how to" develop data, covering twelve scientific disciplines. These documents will be guidance, not rules, which allows for the use of other scientifically valid methods that may already be available or will be developed in the future. This approach allows for flexibility to develop data with the most up-to-date methods. These guidelines will be available early next year from the National Technical Information Service.

firmly believe that sound regulatory decisions must have a basis in objective scientific information. To help ensure this is the case, procedures were developed and published to provide for scientific peer review of studies which are important in making regulatory decisions. An example of this is the highly emotional and polarized fire ant issue. With several decisions on fire ant control pending, I decided to co-sponsor with the U.S. Department of Agriculture a symposium of experts in the field to bring together the latest information and advice on the multifaceted problem. The symposium, held in June 1982 in Atlanta, provided a wealth of information for EPA and other agencies to consider in future fire ant related program decisions.

The actions to regulate pesticides taken so far show: New products and new uses of old products reach the market faster; both producers and potential users are better able to plan ahead if the Agency can be relied on to act within its stated target dates, whether selfimposed or statutory; and in numerous cases, because difficult but firm decisions



were made and not delayed as was prevalent in the past Administration, the health and safety of the public and the environment was enhanced.

Considerable progress was also made during the 1982 Fiscal Year in the implementation of the Toxic Substances Control Act (TSCA).

A number of projects, some of which had been on the agenda for years were finally completed. Included were major asbestos and PCB rulemaking decisions, the publishing of nearly 100 test guidelines, proposed exemption criteria for reviewing new chemicals, and negotiated agreements for chemical testing. Throughout this period, the TSCA Inventory of Chemicals in Commerce was updated to include over 58,000 chemicals.

During this year, the Agency has established a set of firm priorities in order to effectively and efficiently protect public health and the environment: meet all statutory and court deadlines, clean-up backlogs, and reduce unnecessary regulatory burdens. These priorities were largely met and the TSCA program personnel reflected a commitment to high quality scientific analysis in carrying out their responsibilities to protect human health and the environment.

In the area of regulatory reform, policy reforms emphasize focusing resources on chemicals of greatest potential concern, negotiated agreements where appropriate, flexibility when possible, and encouragement of small business initiatives. Regulatory changes have reduced unnecessary regulatory burdens, and provided for exemptions to requirements when such exemptions did not adversely affect health or environmental protection. Administrative changes were created to meet legislative and judicial time schedules. As a measure of our success during the past year, for the first time since TSCA became effective, all statutory and court imposed deadlines were met for every section of the law.

With respect to our enforcement and compliance programs, over the last year four trends have become keystones: a decreased emphasis on "adversarial enforcement" and more emphasis on technical assistance towards compliance; delegation of enforcement authority to the states; vigorous enforcement of serious violators; and avoidance of unnecessary restrictions on the regulated community.

Both compliance inspections and enforcement actions have flourished in this atmosphere. For example, FY'82's enforcement actions are nearly 50 percent higher than FY'81 while compliance inspections are up almost 100 percent.

During FY'82, EPA continued to be actively involved in international efforts to harmonize chemical testing and assessment activities.

For example, the Agency participated in the work of the multi-national Chemicals Program of the Organization for **Economic Cooperation and Development** (OECD). EPA provided experts to work groups responsible for developing further OECD test guidelines, for updating previously adopted guidelines, and for work under the Hazard Assessment project. The Agency was designated to head the U.S. delegation to the second High Level Meeting of the Chemicals Group where the Environmental Ministers of OECD nations will provide for further work on implementation of OECD Principles of Good Laboratory Practice, information exchange between member nations, trial use of Data Interpretation Guides, and an OECD Existing Chemicals Program.

EPA has also spent a significant amount of time preparing for its annual bilateral consultation with the Commission of the European Communities in October of 1982. Issues of mutual concern in the areas of new and existing chemicals under TSCA and the Sixth Amendment of the European Economic Community's Directive in Classification, Packaging, and Labelling of Dangerous Substances are to be agenda items.

These are some of the highlights of what I consider to be a highly productive fiscal year. It is my expectation that the new year will be equally so.



EPA's Enforcement Goals

by Robert M. Perry



Robert M. Perry is EPA's Associate Administrator for Legal and Enforcement Counsel and also serves as the Agency's General Counsel. The U.S. Environmental Protection Agency's first priority — indeed its first duty — is to produce results in its enforcement activities. This Administration has achieved significant improvements in the management and organization of the EPA department which is charged with enforcing this country's environmental laws, Some of the most important major initiatives undertaken by the Administrator to strengthen the Agency's enforcement program include:

• Reorganization of the Agency's various legal components into one office, the Office of Legal and Enforcement Counsel, to ensure that the Agency speaks with one legal voice, both at the Headquarters and in the Regions.

• Improved coordination with the Department of Justice to involve the Land and Natural Resources Division as early as possible in the case development process and to streamline the method by which EPA develops and refers enforcement cases to Justice for litigation.

• Establishment of a centralized enforcement policy office to develop agencywide enforcement procedures and to ensure adequate coordination between the agency's legal shop and the technical program offices.

• Improved information management systems to use computers to record and track the status and progress of EPA litigation and pending grant appeal cases.

EPA's enforcement philosophy is designed to encourage voluntary compliance with environmental laws. As the Administrator has stated on numerous occasions, our initial enforcement approach should not be confrontational. Therefore, rather than setting industry and EPA in an adversarial posture, we must deal with the regulated community with a presumption of good faith. We must act upon the presumption that responsible industries, like good private citizens, want a clean, healthful environment and are willing to contribute their skills and resources to achieve it.

However, this approach can only be successful if the regulated community understands that we are willing to resort to civil prosecution if negotiation does not yield the desired results within a reasonable period of time.

No one should doubt our resolve to enforce the law where parties are either unwilling to come to the bargaining table or bargain in bad faith. Those who are responsible and reasonable can expect EPA to respond in kind. On the other hand, we are prepared to litigate with those who refuse to shoulder their fair share of responsibility for the environmental damage to which they have contributed.

Three excellent examples of voluntary settlement to clean up some of the worst hazardous waste sites have taken place in the past several months.

On August 26, a settlement was reached with 112 companies to contribute \$2.4 million toward surface cleanup and scientific studies at the Chem-Dyne site in Hamilton, Ohio. The site had been operating since 1974 as a hazardous waste handling, storage and disposal facility. There were 12,000 55-gallon drums and 15 bulk storage tanks on the site, many of which were severely corroded and leaking. The same day the voluntary cleanup was announced, the Department of Justice filed suit on EPA's behalf against those firms refusing to cooperate in the cleanup.

In the second case, which was settled on October 26, 24 generators whose industrial wastes were among the hazardous wastes sent to the former Seymour Recycling Corp., in Seymour, Ind., agreed to provide \$7.7 million to undertake a complete surface cleanup at the site. The Seymour site is one of the largest hazardous waste facilities in the United States. The cleanup involves the removal of some 60,000 55-gallon drums with solid and liquid wastes and 98 bulk storage silos. Negotiations are continuing with another 340 generators, businesses, and individuals that the agency believes are also responsible for contributing wastes to the site. If these negotiations do not yield the desired results within a reasonable time, EPA is prepared to deal with these parties through the courts.

A settlement reached with the Velsicol Chemical Company on November 18 produced the largest settlement ever agreed to by a private party for remedial action in an environmental case. The company agreed to a settlement estimated to be worth \$38.5 million for the cleanup of four hazardous waste sites in Michigan. One of the sites, the Gratiot County Landfill, had been designated by the State of Michigan as its first priority hazardous waste site. An estimated 269,000 pounds of wastes containing polybrominated biphenyls (PBB) were placed in the landfill between 1971 and 1973 resulting in groundwater pollution and surface runoff contamination.

These cases are benchmarks in hazardous waste enforcement. They clearly demonstrate three important points. First, that EPA can effectively and expeditiously conduct multi-party hazardous waste case negotiations; second, that EPA will take strong action by pursuing litigation against companies that refuse to participate in reasonable and fair settlements; and, third, that this enforcement strategy ensures the immediate release of settlement monies to engage private contractors in obtaining prompt cleanup of hazardous waste sites.

Results are starting to flow from the improved coordination and management of the enforcement program. Of the 100 cases referred to the Department of Justice in fiscal year 1982, 88 were sent in the last six months of the fiscal year.

These 100 referrals included 27 Clean Air Act cases, 43 Clean Water Act and Safe Drinking Act cases, 29 RCRA and Superfund cases and one Toxic Substances Control Act case. Thirty civil cases have already been referred to the Department of Justice in the first 2 months of FY 83.

EPA's criminal enforcement program is now operational following a nation-wide recruitment effort to add 17 experienced criminal investigators to the staff. The agency now has 21 criminal investigators; another four will be added shortly. For the first time in the agency's history, seasoned investigators will be available to every EPA region to manage the development of potential criminal cases and to provide investigative support to prosecutors after cases are referred to Justice. Twenty criminal cases were referred to the Department of Justice in FY 82. The newly hired investigative staff is part of an overall effort to improve the soundness and sophistication of criminal case development in the agency. Investigators will work closely with the agency's technical and legal staffs to produce the type of quality prosecutions that are essential for securing lasting environmental protection. Each investigator has a minimum of six years experience and most have far more.

Foremost among the agency's criminal enforcement priorities are cases involving the illegal handling of hazardous and toxic wastes; long-term, repeated or particularly serious incidents of illegal pollution activity under all environmental statutes; cases involving falsification within the context of agency reporting systems, and cases of deliberate violations of environmental consent decrees.

In the past, EPA concentrated its enforcement initiatives on violations of the Clean Air Act and the Clean Water Act. Enforcement of these Acts in the 1970's required litigation to obtain capital expenditure by the regulated community to install pollution abatement and control equipment. Most of that type of enforcement activity is completed. For example, most of the steel industry is operating under existing consent decrees. Enforcement of the Clean Air Act in this industry is increasingly by contempt action and administrative order.

We are now placing our priority on bringing enforcement action to induce regulated parties to achieve compliance with our newer programs, particularly those associated with hazardous wastes. Furthermore, we need to continue to place increased attention on potential criminal violations, which involve some of the most significant cases of environmental harm, and on violations of existing consent decrees. These areas — hazardous waste enforcement, criminal enforcement and consent decree enforcement — provide the framework for enforcement priorities this year.

We are now refining EPA's first real enforcement strategy, a strategy which will emphasize careful identification of major multi-media polluters; a strategy demanding full and persuasive case preparation; and a strategy which encourages resolution based on negotiation within firm deadlines under the realistic threat of major court action.

EPA enforcement policies will be applied fairly but firmly and parties who violate environmental laws and regulations will be dealt with swiftly and surely.

Making Environmental Policy

By Joseph A. Cannon, EPA Associate Administrator for Policy and Resource Management



In analyzing broad questions of industrial environmental policy, one of the issues is not whether this Administration stands for environmental protection and a credible EPA. Of course it does, and the record shows it. We have banned virtually every use of Toxaphene, a widely used pesticide suspected of causing cancer. We have issued regulations that will drastically reduce the levels of lead in gasoline, due in large part to the health hazards of airborne lead to young children. And, after the Agency had missed years and years of court-ordered deadlines, the effluent guidelines required by the Clean Water Act are hitting the street on schedule.

The issues, then, are: What is the present situation; Where do we want to go; What's the best way to get there? I doubt that anyone could deny that the present situation is encouraging to the notion that a large industrial nation can succeed in cleaning its own house. The gross and obvious pollution that plagued us a decade ago is largely gone. The number of days of unhealthy air in major cities has declined virtually without a break since 1974. Despite growth in population and gross national product the U.S. Geological Survey reported no decline in water quality over the past several years. Important rivers have shown remarkable come-backs; we are seeing game fish in places they have not inhabited for a generation. The hazardous waste problem has been identified, the really dangerous sites have been located. and we have established mechanisms and resources for cleaning them up.

Of course there are still problems. But they are certainly not as bad as they were ten years ago. They are not even of the same magnitude. (This produces, I think, a bittersweet situation for the environmental movement, rather like that of the doctor who has rendered all his patients reasonably healthy, but still has a heavy mortgage. When he meets one of them on the street and the man says, "Doc, I feel great!", he may have an irresistible urge to say, "Oh, really? You look terrible to me — better stop by the office."

It must be said, in the wisdom of hindsight, that we made this admirable progress in a crude way. A dozen years ago we entered a national debate about how to control pollution. Industry by and large took the view that you had to set qualitybased standards in water and air and then attribute the pollutant effects on those standards to particular plants. Only then could you ask the plants to stop polluting. The environmentalists understood that this policy would open a bottomless pit of litigation during which pollution could continue. They fought for technology-based standards instead; if machinery was available to reduce pollution, industry had to get it on, according to strict schedules. In large part the Clean Air and Clean Water Acts reflect the latter view. The machinery went on and, as we've seen, the environment did become much cleaner.

But the problem with a technologybased standard is that science marches on. New and better removal technology is developed. The technology of pollution detection races ahead even faster. As the smog vanishes and the waters clear we discover pollutants we hadn't noticed before - at ever diminishing concentrations. The laboratories are busy as well. A milligram of something exotic kills rats: Is a microgram loose in the environment really safe for people? Now industry must respond to demands to control not just a few well-understood pollutants but many new ones. More machinery must be designed, financed, and added to the plants. New plants can be made cleaner than the old, but at some point design has to be made final. Industry begins to ask, "What is that point? Where does it all end? Should our waste streams be cleaner than the air and water surrounding the factories? Do you really want us to pretend that a steel mill is a filter?"

This is a real quandary. I maintain that it has its root not in politics or stingy recalcitrance but in the laws of nature, which are not under the jurisdiction of any congressional subcommittee. It is a fact that whenever you purify something, I don't care whether it's a chemical on a laboratory bench or a waste stream from a pulp mill, removing the last increments of the impurity will account for a very large fraction of your total cost in getting to that point. One example: In meeting the 1977 water discharge standards, the iron and steel industry brought pollution down a little more than 97 percent from the no-control level. The small additional increment required by the 1983 standards will cost two-thirds what it cost to achieve the earlier huge improvements. The issue is not the sheer magnitude of the costs but the fact that they should be explicitly considered — we should know what we're buying, and at what price.

et's try a little thought experiment to illustrate the problem. Imagine, if you will, that all the subtle and vexing questions about the connection between pollutants and their effects - have been resolved. We now know with some precision what various concentrations of pollutants do to each of the values we want to protect: Human life and health. fish and wildlife, recreation, esthetics, and so on. Now let's imagine that we're wise enough to assemble all these values into a single environmental protection score that goes from zero to one hundred. Zero means no pollution control and no protection, one hundred means total protection for all those values. Now we array that scale along the bottom of a graph and let the vertical scale stand for pollution control cost. Assume further that in our new wisdom we can specify the most effective combination of controls for achieving any particular level of protection.

As we begin to put on pollution controls we generate a curve. At first it is pretty flat — we're taking out a lot of gross pollution and achieving a good deal of environmental protection for each increment of cost. In the middle of our scale the curve begins to rise: The cheap gains are over — it costs more to pick up each additional point of score. Later the curve heads up sharply and eventually it's pointing nearly straight up. The marginal dollar is buying almost nothing.

I submit that what we know about the nature of removal technology supports this picture. But what does it mean in the world of practical environmental policy? Well, if we were able to draw such a curve - call it a cost effectiveness curve for a particular industry, I would expect to find that the actual combination of controls imposed on that industry is not in fact the most effective way to obtain any particular set of environmental values. That is, however much we want to buy - and reasonable people can disagree about how much we ought to buy we are probably paying more than we should for the level of protection we are getting from the combination of controls in place or in the pipeline.

This result might have been expected and no one is really to blame. In the past at EPA, amid the press to get out regulations, availability of some technology was the important fact. Differences in the efficiency of a technology at removing a particular substance may have been considered, but people rarely asked what was the best way to minimize some specific effect of pollution. Because of the traditional division of EPA into quasiindependent offices responsible for the different environmental media, the cumulative economic impact from all regulations on a specific industry was not often addressed. For the same reason, we did not always pay sufficient attention to the transfer of pollutants from one medium to another. We would tell industry to remove something from the air and it would wind up in the water. Then we would tell the industry to take it out of the water. We now have a sludge problem of substantial dimensions in this country, not unconnected to our "success" in air and water pollution control. In sum, our pollution control policy has largely been a matter of removing substances from diffuse media and concentrating them. Was this correct in all cases with respect to efficiency and total reduction of risk? We don't know.

o return to our hypothetical curve: I said that reasonable people can disagree about where we should be on the curve. That is true, but reasonable people cannot disagree in ignorance and still claim to be reasonable. I believe that it is an essential responsibility of the Environmental Protection Agency to demonstrate to the extent possible what it is we buy for what we ask industry to spend. Any such calculation will be rough given the current state of knowledge. Assumptions must be made in ignorance of the full facts, but these assumptions must be made explicit at the policy level rather than buried in the appendices, as has often been the case in the past. What do you believe about dose and response for the whole spectrum of pollutants produced by any industry? What is your best estimate of exposure? What health effects do you want to control? Do they all have the same value to you? What about environmental effects? Will you make trades among them? We have to accept the fact that any combination of controls, including any current one on any industry, is the result of implicit trade-offs between different values. I think it is time that we developed the ability to do this explicitly, to the extent that the latest knowledge allows.

If you think that the amount of money available for pollution control is unlimited,

then there's no problem — you can buy anything you want. But if the purse has a bottom after all then you are obliged to choose between alternatives, and if you are a public agency you should be able to defend your priorities rationally, using the best scientific and economic information available. EPA has not done this well in the past. But we are starting to do so now.

How do we start? The task is made feasible by the concentrated distribution of pollution problems with respect to both industrial sectors and geographic areas. We can specify a dozen industries that account for about half of all conventional air and water pollutants, three quarters of all hazardous waste production, and virtually all toxic water pollution. These industries also spend over half of all control operating costs and nearly two-thirds of the capital invested in control equipment.

Similarly, we can point to one hundred counties (out of about 3000 in the nation) that account for a third of the hydrocarbon emissions, one-fourth of the chemical production, a third of the hazardous waste treatment, storage and disposal facilities, and over a third of the superfund interim priority sites. The bulk of this pollution is located in only seventeen clusters of counties, on two per cent of the nation's land area.

I should say at this point that my discussion has not been entirely theoretical. Our staff has begun to examine particular industries and particular geographic areas with an eye toward determining the most cost-effective ways of obtaining desired levels of pollution control in all environmental media. This work has already started to produce interesting results. We are now able, for example, to produce cost-effectiveness curves for particular industries that take all media into account and show what the most cost-effective steps in further regulation are. This gives us a way to set priorites, and to avoid very expensive regulations that have only marginal payoffs in health and environmental protection. We can use analogous, somewhat more complicated processes to analyze environmental controls in specific geographic areas.

We will be soliciting comment, on these and other regulatory strategies, from all interests connected with environmental protection during the coming year. Again, I think that all of us, although we may reflect conflicting interests, need to make the effort to identify the critical assumptions on which broad environmental policy must be based. At the very least we need to distinguish as much as is possible between issues of value and issues of fact. We've started to build the base for those sorts of discussions.



At the same time we are developing a system that will connect the actions of the Agency and of State Agencies to distinct environmental results. By results I mean real improvements in the environment, not the movement of pieces of paper, fascinating though that might be to connoisseurs of bureaucracy. When we say "managing for environmental results" we mean that we will develop ways to keep track of whether Federal and State actions are resulting in intended environmental improvements or protection; modify our strategies where it appears that they are not fulfilling expectations; and make decisions based on what alternatives are likely to yield the greatest concrete environmental benefits. We realize that this is not a simple task - conections between cause and effect in the environment are often obscure. Also, we can't restrict this effort to a headquarters exercise. The States must be heavily involved as well, since they have the necessary information on such things as compliance levels and enforcement actions.

Still, I belive that EPA has to focus more of its energy in that direction. We can't continue to claim the brass ring just because we got a regulation out the door. I have a great respect for the legislative and regulatory achievements of the environmental decade. But I think the country deserves a good hard look at what we bought then and a chance to consider if that is what we really ordered. Between what comes out of a legislative mark-up session in Washington and what comes out the end of a smokestack in Gary stand literally hundreds of decisions, compromises, and negotiations, and possibly one or two mistakes.

You all know the story about the man who saw a poisonous snake and picked up a stick to kill it. But the snake he saw was a stick and the stick he picked up was a snake, I think we've made errors of judgement like that. I think we've misdirected resources — both ours and industry's. I don't think we can afford to do much of that anymore.

I'd like us to progress toward our national environmental goals sensibly and rationally and without histrionics. I'd like us to develop techniques for dealing with the environment as a whole rather than as fictitiously isolated packages labelled air, water, and solid waste, and to relate what is happening in that whole to what an entire industry is spending.

I want to develop a guality control system for environmental protection analogous to those springing up in industrial plants, so that we could for once connect what we do to what is happening to the values we seek to protect. I'd like to deal with cost in an explicit way so that people could begin to understand the relationship of cost to risk avoided or benefits gained, as they do in other aspects of public and private life. Finally, I would like to develop a system of rational priority-setting, so that we could say to the world, "We're working on A, B, and C and not on X, Y, and Z because A, B, and C are more important, and here's why."

I would like to change the grounds on which environmental policy debate proceeds in this country. I believe it has for too long been dominated by fear-mongering from both sides. "They're poisoning the children!" "They're driving us out of business!" That sort of talk is easy and unhelpful, and I think it's time is past. And I would like to think that the efforts that we have begun to rationalize the development of environmental policy will become a central part of this administration's legacy to the country.

Portable Monoxide Monitors Aid EPA

Fifteen hundred residents in Washington, D.C. and Denver, Colo., are helping EPA to measure the urban American's exposure to carbon monoxide in a unique study making use of portable monitoring devices. Scientists believe the project will give a clearer idea of just how much of a problem this pollutant is in our daily lives.

The program, which will be completed next month, uses a small blue two-pound device about the size of a portable radio carried on a shoulder strap. Participants in the two cities carry the monitor for a day or two and record their activities in a diary. A miniature computer known as a microprocessor inside the instrument records the average level of carbon monoxide during each activity of the participant and the time of day that the reading occurs. This information will document an individual's actual 24-hour exposure to carbon monoxide during his normal daily activities, and how much each activity (driving, cooking, smoking, etc.) contributes to that exposure. The information will ultimately lead to more focused and efficient regulations for the control of this pollutant.

The project differs from previous efforts to measure carbon monoxide by taking readings relatively close to the "nose level" of city dwellers. In the past, pollution experts have been forced to rely on relatively large stationary monitors that were installed at fixed sites in areas free of obstructions and safe from vandalism. This meant that the monitoring stations often were placed on the roofs of buildings or close to roadways with heavy traffic.

As a result, specialists believed the data from the stations may not have given a realisitic picture of actual outdoor exposures at ground level or those inside buildings and homes.

EPA scientists and engineers also felt there was a growing need for more accurate readings of levels of this pollutant that people are exposed to as they move carbon monoxide in Washington, D.C., and Denver.

Portable monitor being used to test for



from one location to another during a typical day. For example, carbon monoxide levels would be expected to be higher inside a slow-moving car or bus in heavy traffic than inside an office building or on a patio in a quiet residential neighborhood.

At this point it is not clear whether the present fixed monitoring stations underestimate or overestimate the concentrations to which people are exposed. More accurate information is needed to assess the adequacy of data from these stations to protect public health.

Carbon monoxide is an odorless, colorless gas produced by burning such fossil fuels as gasoline, oil, and coal. Because it inhibits the ability of the blood to carry life-giving oxygen, carbon monoxide can pose a health hazard. At high levels it can cause dizziness, impaired judgment, reduced muscle coordination, and in extreme cases even death.

Washington was chosen to represent a "commuter city" since it has a high degree of traffic and movement of people during the day and a massive exodus in the evening as commuters return to outlying communities. Since the level of carbon monoxide in the air at these times is primarily the result of emissions from vehicles, it fluctuates with traffic patterns and directly affects the exposure levels experienced by commuters.

Denver was chosen because of its high elevation above sea level. There is approximately 15 percent less oxygen available at that altitude for combustion of fuel, resulting in higher levels of auto exhaust emissions. In addition, carbon monoxide levels are especially high during winter months when low-level temperaGail Loudin, an EPA Research and Development Administrative Officer, carries a portable monitor while shopping.

ture inversions form over the city, trapping pollutants.

In Washington, the project is being jointly managed by EPA and the Metropolitan Washington Council of Governments. Austin Librach, Director of Environmental Programs for COG, is coordinating the involvement of the local governments. The project in Denver is being managed from the office of Mayor William McNichols where his special assistant, Dr. Cooper Wayman, is coordinator.

Participants, who represent a crosssection of Washington and Denver residents, were selected for the project using statistical procedures developed by the Research Triangle Institute, a private organization. Officials said the data obtained will be forwarded to EPA's Office of Air Quality Planning and Standards for evalutation later in 1983. The Environmental Monitoring Systems Laboratory at Research Triangle Park, N.C. is managing the project.

"National ambient air quality standards for carbon monoxide are not currently met in the Washington area," declares Walter A. Scheiber, COG Executive Director. "For the last two years, as part of the process of revising State Air Quality Plans in the region, COG has worked with EPA and the State and local governments to assess the carbon monoxide problem and its solutions. Currently, no reliable information on actual population exposure to carbon monoxide is available. This project will be the first major effort to define actual public exposure to carbon monoxide from all sources."

Dr. Courtney Riordan, EPA Acting Assistant Administrator for Research and Development, noted at a press conference announcing the project that the study was designed to help the Agency "assess health risks associated with carbon monoxide "as well as evaluate the effectiveness of the fixed-site monitors as a reliable tool for estimating average exposures. Officials also say a long-range purpose of the study is to help EPA establish national air quality standards.



The portable pollution-sniffing box at the heart of the project is an evolution of the small monitors that miners have used for years to alert them when CO reaches unhealthful levels in mines. The new personal monitor, however, has added features developed by engineers from Stanford University. It relies on a data logger, a tiny computer that continuously compiles, averages, and stores carbon monoxide level data, according to Dr. Wayne Ott, a senior environmental engineer with EPA's Office of Research and Development.

"The monitor is actually a full lab in a tiny box," Dr. Ott says. "It replaces a machine that is roughly the size of a refrigerator." The \$1,600 computerized monitor displays and stores hourly averages of carbon monoxide the wearer has come in contact with during the day. It stores the pollution data until commanded to replay it. As the data is recalled, it can be charted onto a graph resulting in a carbon monoxide "pollution profile" for the wearer.

"With this machine," explains Dr. Ott, "we can track the activities of people as they go through their day and match it with the different levels of carbon monoxide they are exposed to. For example the machine might tell us the person is exposed to a lot more carbon monoxide while stuck in rush-hour traffic or while in a parking garage."

He noted that similar "personal monitors" can be made to detect other pollutants and even airborne particles.

Progress on Acid Deposition Research

by Dr. Courtney Riordan, EPA Acting Assistant Administrator for Research and Development

During my tenure as Acting Assistant Administrator for Research and Development, I have not faced a more complex phenomenon than acid deposition. It is a problem upon which many reputable scientists disagree. The implications of this issue have a far-reaching effect upon our national energy policy, particularly regarding increased coal use as a substitute for imported oil.

When I first became involved in this subject, I was overwhelmed by the amount of scientific information that we had at our fingertips. After careful review, I found that much of it lacked quality: and, in the end, I have concluded that we do not have an adequate scientific foundation upon which we can erect a firm set of decisions for dealing with this international problem. Because the President is also concerned about this unusual and somewhat perplexing problem, he has committed this administration to a Government-wide research program. He has approved an increase in the researching funding for this activity by more than 70% from fiscal year 1981 to 1983.

To deal with this problem, this Administration has copied a very successful management style which was popularized with the establishment of the NASA space program.

Under the National Acid Precipitation Assessment Program, which was established by Congress as part of the Energy Security Act, an Interagency Task Force was created to manage the entire Federal research effort on acid deposition. It has adopted an integrated systems approach for both the planning and the management.

The administrative headquarters of the Task Force is located in the offices of the Council on Environmental Quality; but it has its own separate Executive Director. The Task Force is divided into ten task groups and each unit is devoted to a particular aspect of the acid deposition problem. Membership for these task groups are drawn from a number of Federal agencies, which include the U.S. Department of Agriculture, National Oceanic and Atmospheric Administration, Depart-

Dr. Riordan is co-chairman of the Federal Interagency Task Force on Acid Deposition. ment of Energy, U.S. Geological Survey, National Park Service, National Science Foundation, National Air and Space Administration, and Tennessee Valley Administration.

EPA is specifically responsible for chairing the task groups on Aquatic Effects, Policy Analysis and Control Technology. At the same time, we participate as members on the other seven. Eventually, the products of all the research being conducted under the tutelage of the task groups will be pulled together just as the various products of the NASA subcontractors came together and produced a finished spaceship which landed on the moon. By using the systems approach, this administration is determined to move ahead and address those key areas of uncertainty on acid deposition.

A major aspect of this massive research program is the level of the resources. In FY-82, over 18 million dollars will be spent. To insure that virtually every aspect of the issue is thoroughly examined, that budget line item will be increased to 22 million dollars for FY-83. Furthermore, business and industry as well as some state governments, are spending millions of additional dollars on research and development in related areas in order that we, as a nation, can get all of the facts needed to make effective, realistic decisions.

What are the major scientific issues as I see them? Permit me to answer that by outlining some of the key questions that we, in the Task Force, are trying to answer with our Federal research program:

• How severe and widespread are the effects (aquatic and terrestrial)?

 Has acid precipitation really been increasing?

• What source-receptor relationships could be used to:

 determine emission control strategies?
compare deposition from local sources with deposition transported from different sources?

- determine the importance of acid aerosols from natural sources?

• To what levels should acid deposition be reduced to mitigate aquatic effects in susceptible watersheds? Is mitigation of acid deposition effects at receptor locations a practical control strategy?

The answers to these questions are the results of our research activities. We are making every effort to develop the credible scientific and technical data which will provide the regulators and legislators the information which they need to formulate sound policy decisions.

I would like to return to some of the questions on that list and to discuss them in more detail in order to specifically outline some of the things we are doing in this research program.

Is acid deposition increasing?

Recardless of where acid rain has been observed and measured, there is insufficient evidence to state with certainty that acid rain is increasing in North America. Even after a careful examination of all existing historical data, there would be insufficient evidence to support claims that acid rain is now more prevalent than in the past. At one point, we thought that core samples taken from the glaciers and ice fields of the Arctic, Antarctic, and the high mountains would contain a historical record of the trends in the chemistry of acid deposition. To date, the few efforts to detect such patterns have produced no definitive results. We eventually discovered that a major stumbling block was that we could not detemine whether the observed acidity in the core samples came from man-made sources, or natural processes or local contamination.

In looking at the historical records about air quality and precipitation in the U.S., we concluded that there was inadequate data to establish scientifically rigorous trends regarding atmospheric acidity or the concentrations of precursor chemicals. We even looked at the data in foreign countries. For example, in Scandinavia, where data records are more complete and of higher quality than in North America, the analyses suffered similar shortcomings. Strong correlations found between the concentrations of sulfates and nitrates in precipitation and precipitation acidity were not reproducible when sulfur emissions data were collected from arrays of monitoring stations over extended time intervals. We could not discern whether the differences in correlation between concentrations and emissions may reflect year-to-year variations in atmospheric transport patterns or the complexity of atmospheric mechanisms.

Our research plans call for the continued gathering of data from which acidification trends can be determined. Our study plans include the examination of tree rings, sediment cores, acidification damage to tombstones, and a continual



an additional year for compliance with BAT requirements, extending the deadline to July 1, 1984.

line to July 1, 1984. By 1978, however, it was already apparent that EPA would not meet the court-ordered target dates for issuing the effluent limitations. The settlement agreement was modified and a new schedule was approved calling for promulgation of the last of the guidelines no later than June 30, 1981. At the same time, the original list of 21 primary industries was subdivided into 37 categories and more than 500 subcategories.

EPA's slow progress in developing regulations stemmed from a combination of factors. The guidelines process obliged the agency to amass data on manufacturing processes, the age of industrial facilities, the cost of pollution control, and non-water quality impacts. There were engineering analyses to be carried out, including estimates of the investment requirement for treatment technology, costs of operation and maintenance, and energy consumption. During a six-year period starting in 1976, EPA spent \$123.5 million on contracts to help develop this data base.

The work also bogged down because of a cumbersome review process that ate up 15 months on the average just within the Office of Water. (Two to three and a half months are allowed for review now.) Deficiencies in the technical base data and inaccuracies in economic impact models also caused delays.

In January 1981, when the Reagan Administration took office, only one set of guidelines — for timber products processing — was ready for publication in final form. It was obvious that the work would not be completed by June 1981 as the court had directed.

The Administration twice went back into court (most recently in June 1982) seeking approval of revised schedules that would allow more time for completion of the rule-making. Ultimately, in August 1982, the court approved a revised schedule that extended deadline dates, though denying as much time as EPA had requested. Mrs. Gorsuch directed that the highest priority be given to promulgation of the effluent limitations. Review periods were cut back drastically. A special tracking system was put in place to assure that the Administrator would be notified personally of any delays in meeting the new schedules.

Personnel were reassigned within the agency to meet staffing needs. An additional \$1.5 million was made available to fund the program. Mrs. Gorsuch also approved the re-allocation of more than \$3 million to fund technical and economic studies needed to complete the guide-lines development.

The increased investment of staff, money and managerial attention paid off. In May, Mrs. Gorsuch approved the final effluent limitation guidelines, new source performance standards and pretreatment standards for the iron and steel industry. This was the first major industrial category covered by effluent regulations. Applicable to 680 steel plants, the regulations will reduce the volume of toxic pollutants from an estimated 2,400 tons in 1981 to about 720 tons.

From May through September, final regulations were approved covering the bulk of the inorganic chemical industry, textile mills, coal mining and oil refineries. During the same period, regulations were proposed for ore mining, certain electronic components, and metal finishing.

That accelerated effort was capped in late October and early November when final regulations were issued for six more industrial categories — coil coating (phase I), leather tanning and finishing, ore mining, porcelain enameling, pulp and paper manufacturing and steam electric plants. A half dozen new proposals also were approved covering aluminum forming, battery manufacturing, copper forming, foundries, pesticides and pharmaceutical products.

The court had set a November 7 deadline for the promulgation of all effluent limits and standards that were in the proposal stage last May — and EPA met that deadline.

Effluent Limitations and Standards

Industry	Proposal	Promulgation
Adhesives and Sealants	2/83	11/83
Aluminum Forming	11/821	7/83
Battery Manufacturing	10/82	• 6/83
Coal Mining	12/80	• 9/82•
Coil Coating (Phase I)	12/80	11/82*
Coil Coating (Canmaking)	1/83	10/83
Copper Forming	10/82	• 7/83
Electric and Electronic Components (Phase I)	8/82	• 3/83
Electric and Electronic Components (Phase II)	2/83	11/83
Foundries	10/82	• 8/83
Inorganic Chemicals (Phase I)	7/80	• 6/82•
norganic Chemicals (Phase II)	9/83	6/84
Iron and Steel Manufacturing	1/81	5/82*
Leather Tanning and Finishing	6/791	11/82*
Metal Finishing	8/82	6/83
Nonferrous Metals (Phase I)	1/83	1/84
Nonferrous Metals (Phase II)	9/83	6/84
Nonferrous Metals Forming	9/83	6/84
Ore Mining	5/82	11/82*
Organic Chemicals, Plastics and Synthetic Materials	2/83	3/84
Pesticides	11/821	12/83
Petroleum Refining	11/79	9/82*
Pharmaceuticals	11/82	9/83
Plastics Molding and Forming	10/83	6/84
Porcelain Enameling	1/81*	11/82*
Pulp and Paper	12/80*	10/82*
Steam Electric	10/80*	11/82*
Textile Mills	10/79*	8/82*
Timber Products Processing	10 /79*	1/81 *
*Completed		

The agency intends to keep meeting those deadlines until the last of the industrial regulations is issued in mid-1984.

In developing the regulations, EPA has learned that the economic impact upon industry of meeting effluent limitations will be lighter than expected when the rule-making process began in the 1970's. Data compiled on wastewater treatment shows that BPT systems, which were designed primarily to handle conventional pollutants, do a surprisingly effective job of removing toxic chemicals as well. In the case of oil refineries, for example, BPT systems remove about 96 percent of toxic pollutants. In such cases, BAT reguirements can be established that are equivalent to BPT standards, and the industry involved is spared capital outlays for additional treatment processes.

Similarly, it has been found that modern, well-maintained secondary treatment systems now required in communityowned sewage disposal plants are effective in removing many toxic chemicals. That can eliminate the need for industries to set up treatment systems to treat wastes that are discharged into municipal sewer systems.

When toxic industrial pollutants are not adequately controlled by treatment systems already in place, however, the effluent limitations will require manufacturers to install the technology that is necessary to protect the nation's waterways.

Even though full implementation of the pollution controls envisioned by Congress in 1972 is still a goal, not an achievement, EPA is closing in on that objective now, not merely marking time. And there's cleaner water at the end of that road.

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