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Discharging Enforcement Responsibilities



Discharging Enforcement Responsibilities

This issue of EPA Journal focuses on enforcement, one of the key steps in carrying out an environmental protection program.

The need for a firm enforcement program at EPA was spelled out in remarks by Administrator William D. Ruckelshaus to EPA headquarters and regional enforcement officials at a National Compliance and Enforcement Conference in January sponsored by the Agency. Along with excerpts of the Administrator's remarks, the magazine includes an article on new enforcement strategies being devised at the Agency under the leadership of Courtney Price, EPA Assistant Administrator for Enforcement and Compliance Monitoring.

The sleuthing work being done at EPA's National Enforcement Investigations Center in Denver to build enforcement cases is described in an article by Contributing Editor Susan Tejada.

Environmental enforcement from another vantage point—the state attorney general's office—is explained in articles by the attorneys general of Massachusetts, Washington state and Wisconsin. The views of a partner in environmental enforcement at the federal level—the U.S. Department of Justice—are discussed in a piece by F. Henry Habicht, II, an Assistant Attorney General. Activities in the EPA General Counsel's office, another legal arm, are discussed by General Counsel A. James Barnes in an interview.

An article reports on a new EPA enforcement initiative—cracking down on the hundreds of municipal wastewater treatment plants out of compliance with cleanup schedules. Investigations by the Inspector General's office into fraud in EPA-assisted sewer line repair work are explained.

Progress in the courts on EPA's efforts to clean up dioxin in Missouri, with far-reaching legal ramifications, is reviewed, along with enforcement innovations being undertaken in EPA's Superfund and Resource Conservation and Recovery Act programs.

The EPA campaign against fuel switchers who are undercutting the effort to curb air pollution from autos is explained, and the magazine includes an article on the Agency's latest steps to protect public health in the national concern about the pesticide EDB.

Meanwhile, environmental leaders dis-



Mount Rainier in the Cascade Mountains in Washington State reflected in a lake near its base. Rainier is the center of a national park and a nationally famous environmental landmark.

cuss a question that has emerged as pollution cleanup requirements are toughened: Do pollution control rules block industry growth plans? Differing views are presented by Conservation Foundation officials and John Quarles, a former EPA Deputy Administrator.

On other fronts, the \$295 million increase for EPA's budget is detailed, and

the Administration's program on acid rain is explained in congressional testimony by the Administrator.

The regular feature Update summarizes other developments at EPA, and the magazine includes Environmental Almanac's discussion of the great Wye Oak, monarch of the eastern shore. □

EPA JOURNAL

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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.

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Front Cover: American flags flap in brisk wind at Washington monument grounds. Looming over horizon is dome of Nation's Capitol. Photri photo by Everett Johnson.

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Ruckelshaus Demands Firm EPA Enforcement

Enforcement officials listening at session at National Compliance and Enforcement Conference sponsored by EPA in January



EPA Administrator William D. Ruckelshaus makes a point.

EPA Administrator William D. Ruckelshaus called for firm but fair enforcement at a recent National Compliance and Enforcement Conference in Alexandria, Va.

The conference was attended by high-ranking officials of EPA from headquarters and the regional offices. Also invited were top Justice Department officials. The conference, sponsored by EPA, was designed to help clarify enforcement roles and responsibilities in the Agency.

Here are excerpts from the Administrator's remarks at the conference:

"Based on what I have learned, I am nervous about how we are doing in discharging our enforcement responsibilities. I say 'based on what I know' because I think my knowledge is imperfect. What I am looking at are the same data that I think the Congress, often unjustifiably, looks at—namely these numbers that come in every quarter showing how many enforcement actions are being filed. I am not wedded to those numbers, but I am also looking at independent reports. I am looking at reports that are generated by the General Accounting Office on compliance. When I see what they are saying and then when I look at the number of Administrative Orders, Civil Actions, Criminal Actions, and referrals to the Justice Department that we are filing, I am nervous.

"I am nervous about what I perceive to be an apparent lack of action and serious commitment to ensuring that these laws and regulations are enforced. This isn't the first time we've been through this experience. When EPA was created, we were authorized by the Office of Management and Budget to hire an additional 2,000 people. I felt that it was an excellent opportunity to achieve two governmental goals: number one, to hire the best people we could possibly find to fill these jobs and secondly, to do a lot better than the collective agencies that formed EPA had done up to that point in achieving our civil rights, EEOC, minority and women hiring responsibilities.

"I thought that ought to be simple enough. We've got 2,000 jobs to fill—all I need to do is send out some memos and let everybody know what I think ought to be done and, sure enough, these jobs will all be filled by qualified women and minorities, and we will be a model agency.

"Well, I was wrong as I could be. I sent out all kinds of memos. I signaled every way I knew how what I thought ought to be done—and nothing happened. Each month, in would come the same statistics indicating that we were not doing any better than we had before. I finally got frustrated and called in the actual people who were doing the hiring in the Agency. I showed them the memos I had sent out, in case they hadn't had a chance to read them, and I showed them on the blackboard how poorly we were doing. And I asked why?

"As it turned out, they didn't believe what I was saying in these memos. They thought somebody else must be writing them. We spent a couple of hours, and I think I convinced them I was serious about it, and that their own jobs were on the line if they didn't conform. And then those statistics shot straight up and we did better. I had been talking either in the wrong way or to the wrong people in those first few months. I'm not sure I'm not guilty of the same thing here with enforcement.

"As I set out last year for Washington, following what was happening at EPA, I thought to myself how frustrated the enforcers in the Agency must be. Here is this marvelous institution in our society, created to ensure that the environment and public health are protected, and it is being assaulted from every side. It is being said about them that they are not doing their job; they are not enforcing. I thought 'these people are going to be mad.'

"In fact, I received a call just about a year ago from a reporter I knew at the *Wall Street Journal* who asked, 'What do



you think about all this going on at EPA?' At that point, I certainly didn't have any idea that I'd be here a year from then, but I do remember saying one thing, 'I'll bet you what's happening is that there are more enforcement cases being filed at every level of government.' He said, 'Well, why would that happen?' I said, 'Go check—EPA keeps the best records of anybody around of how many enforcement cases are filed. Go back and look at the files—I'll bet you'll see that more enforcement cases have been filed in the last thirty to sixty days than in the last three years.' He called me back about an hour later and he said, 'Boy, you were right!'

"What I was concerned about, frankly, in coming back here was that we had a bunch of tigers in the tank, and the minute we took the lid off the tank and said, 'Go get them!' the problem might well be an over-reaction—that we might start treating people unfairly, just to show everybody how tough we were. Well, I think we opened the tank all right, but on the basis of what I see here the last few months, there may be more pussycats in the tank than tigers. I was fairly certain, through every signal that I knew how to

send out, that you would understand the laws EPA administers are supposed to be enforced not only firmly and fairly, but also vigorously. I said that at my confirmation hearing. I suggested to the Senate Committee members that confirmed me, each one of whom expressed concern about enforcement, that there were three aspects to enforcement: the will, the capacity, and the organization. And I said as to will, 'Let me disabuse anyone who believes EPA, while I am there, will not have the will and the determination to enforce the laws as written by Congress.' I meant that when I said it to Congress.

"Since then, I am not sure we have not gone overboard on fairness and not paid enough attention to firmness. Through the summer as we were working on organizational problems, as new people were coming on, the enforcement statistics were not exactly overwhelming, but I assumed that was because of a need for adjustment.

"I began to get worried in September as I talked to Courtney Price, Assistant Administrator for Enforcement and Compliance Monitoring, and EPA Deputy Administrator Al Alm and others who were concerned about enforcement. So I sent

a memo on October 7 to all the Assistant Administrators and Regional Administrators. I repeated what I said in my confirmation hearings, and I indicated in as clear language as I could that in order to achieve compliance with the laws and regulations EPA must have an enforcement program that is credible and effective. And I emphasized that there should be no doubt in anybody's mind inside or outside the Agency, whether regulator or regulated, that the laws and regulations of the EPA mean what they say, and they will be enforced. Since then, I've said that to the Regional Administrators, Assistant Administrators, everybody I can talk to about it.

"Now these statistics I mentioned are terrible. On the face of it they may be misleading. I may be being unfair in terms of the efforts we are making in enforcement. If I'm wrong, tell me. One of the purposes of this conference, I think, is to find out if, in fact, these numbers are misleading. Maybe we are not measuring the right things. But, if I am looking at the right things, then these statistics are terrible—we filed in the first

three months of this fiscal year 35 orders under all the administrative orders of RCRA, if that's possible. According to the GAO's report—"General Report on Inspection and Enforcement of Determining Activities of Waste Facilities"—80 percent of the hazardous waste facilities in the country regulated under RCRA are out of compliance. We don't really contest that figure, and yet that has generated only 35 Administrative Orders. There are no reports coming in, no financial reports, none of the interim status reports that are supposed to be coming in. It isn't that the reports are incomplete, they are not even there.

"I've asked 'why' for the last couple of weeks. I've asked a lot of people. I've asked Courtney Price and her people, I've asked the people who have been around this Agency for a long time and I get reasons, I get a whole lot of reasons why they think what is going on here is less than what I believe we should be doing. I'll give you just a few of the explanations I've heard—"the states are the ones that are supposed to enforce the law"—in RCRA it is unclear who is supposed to enforce—"the organization is all wrong"—"the organization is all screwed up, not working very well"—"we haven't got enough people"—"we have turf fights"—"personality fights"—"we don't have enough guidance."

"I don't find any of those reasons very persuasive. The truth is that while the states do have a larger responsibility to enforce these laws than they did in the past, if we are carrying out our oversight responsibilities, these laws should be enforced. We can tell them we're going to get aggressive about enforcement. Our primary responsibility is not to get along with the states, it is to ensure compliance.

On the organizational question, believe me, there is no perfect organization, there is no perfect way to do this or anything else. This organization now will work if we make it work. We've got in Courtney Price an absolutely first-rate person as an Assistant Administrator running the Office of Enforcement and Compliance Monitoring. Most of the responsibilities for enforcement ought to be out in the Regions where you are closer to the problem, and where you can get right at those people either through an Administrative Order or through a court using the U.S. Attorney's Office. We argued with the Justice Department about sending enforcement authority to the Regions so we can use it more effectively and quickly and make it work better. Just as sure as that authority has gone out to the Regions it will come roaring back here like a freight train if nothing happens. I'll tell you one thing; if

we don't start doing a better job in enforcement, we're never going to see this organization structure work; we'll never give it a chance.

"When we started here at EPA some 13 years ago, we were all accused of having a lawyer's mentality. I confess I did. The country had adopted a standard-setting enforcement process as a means of achieving pollution abatement to protect public health. It's an imperfect process. Economists all argue that we should have done something else, but we didn't. We decided as a society the way we were going to go about dealing with these problems was to issue regulations that we were going to enforce. That is a two-way approach. If we don't use the second part, if we don't enforce, we can set standards until we are blue in the face and it won't make a bit of difference. In fact, that's exactly what happened before EPA was created. The states were setting all kinds of zero discharge standards, and nobody paid the slightest bit of attention to them because they were never enforced.

On the question of not enough people and not enough guidance, listen, I first started in the field back in 1960 in Indiana. We had a Stream Pollution Control Board that had about as much spine as a jellyfish and a law that was even worse. I brought more enforcement actions with a panel truck and a few guys with some grab samples than some parts of this whole Agency in the last quarter. We didn't have any guidance, we hardly had any laws to enforce and we didn't have any staff. All we had there was me and a few sanitary engineers with these grab samples. Jerry Hansler was one of them. He used to be the Regional Administrator in Region 2.

"In some parts of EPA, there are some encouraging things happening. In the fuel tampering area there are some imaginative things going on. I applaud that. That's what we need to do. We need to not only use these forms of powers, we need to use them imaginatively in order to get compliance.

"The elements of a strong enforcement program are here—absolutely here—you not only have my support, you've got my demand that something be done. I don't want to see—without a whole of a lot better explanation than I've got now—another report like this.

"If the signals aren't clear enough, let's clear them up right now. We've got a system that will work. It's a system that will hold people accountable for what it is they are doing.

"The states couldn't do this by themselves because they had to compete so strongly over the siting of industry that they simply were lousy regulators of en-

vironmental health and safety laws. Unless they have a gorilla in the closet they can't do the job. And the gorilla is EPA. If they open the closet and find nobody there, or somebody who won't come out, that doesn't do them any good. They can't enforce these laws by themselves. They need us. They'll complain and scream, but if they don't have us, they are dead. And we've got to show them that we are there, that we are willing to act.

"It is not as complicated as I think we are making it today. We can find 100 reasons *not to do* something in terms of organizational structure, guidance, you name it. There ought to be 100 reasons *to do* something. We have to develop a certain controlled state of outrage in this Agency if we are going to get these laws enforced. And some place along the way, we have lost that.

"Let me tell you what I think is at stake. What's at stake is EPA.

"There is a man for whom we now have a national holiday, and he had a dream about the way life should be lived in this country. Well, I have a dream about this Agency—that when people ask which is a really good governmental institution, what they will say is EPA. That's the Environmental Protection Agency. Because if in an agency there are good, excellent people, who are tough, who are fair, then by God when they tell you something you can put it in the bank. And if they tell you you've got to come into compliance, and you don't do it, you know exactly where you are going to end up—in court.

The truth is, if we have that kind of reputation, there will be an explanation for these kinds of numbers and that is because all the people out there are in compliance. Now I think that kind of reputation has to be earned; over time it can be frittered away just as easily in spite of how long it took to earn it. We can't risk that.

"I feel deeply about this place and so do a lot of other people who have come back here to help put it back on track, because what we are doing is terribly important to the country. We have got to show people that we mean business, that the regulations and the laws that are passed by the Congress are statements of national public policy and will be carried out. With the people we have in this room and the people we have in this Agency, my dream can be realized. You can find yourselves working for an agency that gives you a lot of pride—that lets you hold your head high and lets you recognize that what you are doing is not only important but is being done well."

□

Agency Officials Devise New Enforcement Strategies

By Bob W. Pittman Jr.



Courtney M. Price

Major new EPA enforcement strategies have been developed under the leadership of the Agency's Office of Enforcement and Compliance Monitoring.

The strategies were drafted by task group committees formed after Mrs. Courtney M. Price, EPA's Assistant Administrator for Enforcement and Compliance Monitoring, was asked by Administrator William D. Ruckelshaus and Deputy Administrator Alvin L. Alm to develop new compliance and enforcement plans.

Task group committees were formed for each of the major enforcement programs at EPA—Air, Water, Hazardous Waste, and Pesticides and Toxic Substances. Each of these sub-groups devised a compliance and enforcement plan for a specific program.

According to Price, these strategies were developed with three goals in mind.

"First, we wanted to educate upper-level management about the Agency's enforcement and compliance programs. We also wished to provide operational guidance for managers with responsibilities in enforcement and compliance. But clearly our most fundamental purpose was the re-establishment of credibility in EPA's compliance and enforcement program by developing enforcement priorities and goals for each of the Agency's program offices."

What effect will the new strategies have on the day-to-day operation of the Agency's enforcement and compliance programs?

"Generally," Price answers, "what the strategy development process did was this. It gave us the opportunity to step back, focusing on what the Agency's compliance and enforcement programs had accomplished in the last few years, and to evaluate where the programs should be headed in terms of EPA's

priorities. It gave us the opportunity to 'codify' agency strategy in one place for the first time. But the strategies themselves will have no radical effect on the way we run these programs on a daily basis."

In addition to devising program specific strategies, Price and her staff developed a series of detailed working principles which she believes underlie all EPA compliance and enforcement programs. Among the topics dealt with in the principles are identification of the regulated community, promotion of compliance in that community, the monitoring of compliance, and response to violations. Also addressed are the relationship of EPA with state and local governments and evaluation of agency progress in enforcement and compliance.

The Office of Enforcement and Compliance Monitoring formally unveiled the results of the task force project before an audience of some 120 headquarters and regional EPA representatives attending the National Compliance and Enforcement Conference in Alexandria, Va. in late January.

At the conference, Price and her associate enforcement counsel discussed the plan for institutionalizing the strategy process in the Agency.

"We will be translating the priorities and goals of the strategies into quantifiable goals which can be tracked in the Agency's Management Accountability System and made part of performance agreements," Price said. "It will also be part of our task within the next year to make certain that strategies are reflected in operating year guidance and the budget."

In the past, she noted, the Office of Legal and Enforcement Counsel or the Office of Enforcement Counsel has been primarily responsible for judicial enforcement. The program offices were principally accountable for administrative enforcement and for compliance monitoring functions.

"The new organization, the Office of Enforcement and Compliance Monitoring, has retained the major functions we per-

(Bob W. Pittman, Jr., an attorney, serves as Special Assistant to the Assistant Administrator for Enforcement and Compliance Monitoring.)

formed as enforcement counsel. We will continue to serve as legal counsel to the enforcement function in the Agency, working very closely with the Office of the General Counsel to ensure consistent interpretation of our statutory authority. We will also remain an important source of technical and legal support for compliance monitoring and enforcement action through the National Enforcement Investigations Center in Denver and our own staff here in Washington. Further, we will continue central management of the Agency's criminal enforcement program. And finally, we will remain the primary liaison with the Department of Justice in the coordination of national cases, ensuring their legal soundness and focus on EPA priorities.

"What does change is that my office will now also be responsible for oversight of all of EPA's national compliance and enforcement efforts for all media and coordinating all supporting management systems for these efforts.

"This means that we will evaluate what the programs are accomplishing in compliance and enforcement and that we will help the programs to establish meaningful future goals and priorities so that compliance and enforcement efforts are coordinated. We will also be responsible for tracking the programs' progress in meeting the goals and priorities they have established."

Directing the new Office of Compliance Analysis and Program Operations will be Gerald A. Bryan, formerly Director of Management Operations for the Office of Enforcement and Compliance Monitoring.

"We are just beginning to implement these new management functions," Bryan declared, "but the strategies are an important first step for us. First, they involve us in strategic planning with the programs. Then, they provide us with goals against which we can begin to measure program achievements and manage the compliance efforts of the Agency. Finally, they initiate a process which we will use in the future to set Agency goals and priorities."

According to Price, "Upon his return to EPA in the spring of last year, the Administrator set forth his priorities for the Agency. One of the major tasks concerned the restoration of credibility to the Agency's enforcement efforts. We sponsored the national conference in January to ensure that everyone involved in EPA's enforcement efforts, both at the headquarters and regional levels, understands our compliance and enforcement policies and acts accordingly so that, to the extent practicable, we can achieve national consistency."

Even though judicial action is not warranted in all enforcement cases, Price said she and her colleagues are, nevertheless, committed to fully utilizing that tool where it is appropriate.

"As I have indicated," states Price, "compliance is our goal and enforcement is one tool we can use to achieve that goal. Judicial enforcement is one part of the enforcement tool, one which we must have the will to use. It is our willingness to use judicial enforcement, our ultimate tool, which gives teeth to all of our administrative enforcement authorities."

Price pointed out that EPA has made it quite clear that it is prepared to crack down on significant violations no matter how powerful their perpetrators may be. Recently, EPA entered into a consent decree with ten of the Nation's largest companies, including Dow Chemical Company, Shell Chemical Corporation, U. S. Steel Corporation and Exxon Corporation, to clean up two hazardous waste sites in Baton Rouge, Louisiana, at an estimated cost of fifty to sixty million dollars.

In other cases, Price said "We have reached a multi-million dollar settlement with Olin Chemical Company for the cleanup of contamination resulting from the discharge of the pesticide DDT, and have filed sizable claims against several major chemical companies for failure to comply with the pre-manufacture notification requirements of the Toxic Substances Control Act.

"We have also proposed large fines against the City of Philadelphia, Pa. and Greenville County, S.C. for fuel switching and disconnecting of vehicle emissions control devices by the city police department and county motor pool," she added. "These actions are but the tip of an iceberg of a concerted effort to stamp out the threat to public health posed by fuel switching and tampering."

What is EPA's outlook for hazardous waste enforcement actions in 1984?

"This year," Price says, "I expect a much more vigorous effort to enforce the Resource Conservation and Recovery Act (RCRA). Over the past several years, EPA's efforts in the hazardous waste area have been devoted principally to the incredibly demanding problems of Superfund cleanup. But the RCRA statute is designed to ensure that we, as an industrialized society, don't continue to produce Superfund situations. I am disturbed by widespread signs of noncompliance with RCRA. Therefore, it is our immediate objective to put respect for the Act into those who would consider violating its requirements."

Federal-state relations have received widespread attention at EPA recently as the Nation moves into a new era with many implementation and enforcement

functions of the environmental and public health laws shifting to the states, Price noted.

"Much of our success in securing future environmental advances will be a direct function of our ability to forge a mutually reinforcing partnership with our allies at the state and local level. But, ultimately, EPA has oversight responsibility to ensure that the laws are complied with. We are the 'gorilla in the closet,' as the Administrator is fond of saying. Where the states are unable or unwilling to take appropriate action to bring violators back into compliance with the law, then we at EPA must step in to do so."

What signal would Price like to send from the Office of Enforcement and Compliance Monitoring? "I would simply say that using the various enforcement tools available to EPA is only one of the activities in which the Agency is engaged. Some may even say that it is not the most important activity. But, if we don't do well in enforcing the law, nothing else we do will be noticed, or even matter. And, though it can be argued that there have been credibility problems in EPA's past enforcement efforts, we are dedicated to curing that by showing, in our words and in our actions, that we are committed to enforcing the law."

Price, a 41-year-old native of Jackson, Miss., was confirmed by the Senate last October as EPA's Assistant Administrator for Enforcement and Compliance Monitoring.

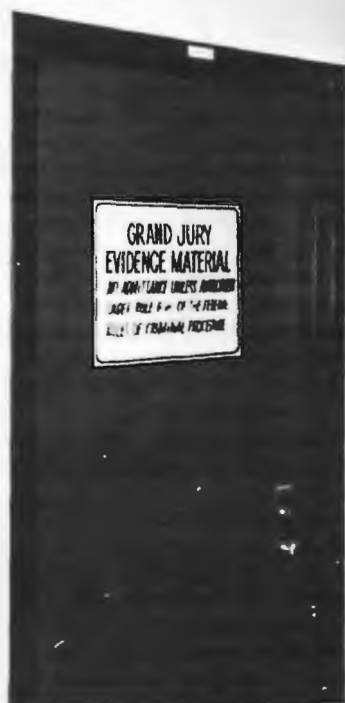
She came to EPA from the Department of Transportation's National Highway Traffic Safety Administration where she had served most recently as Associate Administrator for Rulemaking.

As Assistant Administrator for Enforcement and Compliance Monitoring, Price oversees EPA's far-reaching enforcement and compliance effort. The duties of her office cover case referrals from the Agency's ten regional offices to the Department of Justice, review of consent decrees, direct involvement in cases with multi-regional implications or precedent-setting potential, docket management, development of policies and procedures for judicial enforcement and oversight of the Agency's entire administrative enforcement program.

Price is also the national manager for EPA's fledgling criminal enforcement program. □

EPA Sleuths on the Trail

by Susan Tejada



Behind this locked door, EPA's National Enforcement Investigations Center keeps evidence for presentation to a grand jury.

In the darkness of night, a large, unmarked silver truck backs into position. The rear door opens and a strange-looking machine slides out, pointed skyward. Someone inside the truck peers through a telescope, searching for stray aircraft in the machine's target range. Finding none, he gives the all-clear signal to his partner at the computer console in another part of the truck. The partner flicks the right switches, aims, and shoots.

This shadowy scene comes, not from a James Bond thriller, but from an EPA enforcement investigation. The console operator is shooting laser beams, not bullets. And his mission, to measure something he cannot see, is not impossible.

The EPA operators in the truck are using a technique of light detection and ranging — LIDAR for short — to measure the opacity of a smoke plume. State implementation plans, required under the Clean Air Act, set opacity limits for emissions from every smokestack. Before LIDAR, EPA relied exclusively on visual observation to check compliance with the limits. This had certain drawbacks, not the least being that visual observation of smoke opacity is possible only during daylight. But LIDAR contains its own light source, a laser transmitter which emits a short pulse of light, so it can function day or night. This can be an effective law enforcement weapon against companies suspected of deliberately exceeding opacity limits at night, when they least fear detection.

At EPA's National Enforcement Investigations Center (NEIC) in Denver, Col., LIDAR is just another tool of the trade. The Center relies on a combination of sophisticated equipment and old-fashioned investigative techniques to do its job: gather evidence that can be used to enforce all the laws that EPA administers. That evidence must be thoroughly, exhaustively documented so that it will hold up in court. The Center must always

be ready to "tell it to the judge."

The National Enforcement Investigations Center is part of EPA's Office of Enforcement and Compliance Monitoring. According to Director Tom Gallagher, the Center responds to requests for assistance rather than initiating programs of its own. The requests come from EPA regional offices and from state and local governments. Requesters often do not have the expertise, the equipment, or the time to carry out the investigation themselves.

The Center, Gallagher explains, typically accepts those cases that have national or regional significance and the potential for setting a precedent. Center staff can join in an investigation as it begins, or can provide support even after the legal process has started.

The nondescript two-story building in which the Center is housed belies the dazzling array of paraphernalia and expertise inside. Criminal investigators, engineers, attorneys, hydrologists, chemists, all have years of specialized experience. Roomfuls of computers provide investigators with access to more than two dozen information systems and millions of pieces of literature. Several laboratories provide x-ray fluorescence spectrometry, ion chromatography, x-ray diffraction analysis, high resolution gas chromatograph mass spectrometry, and other highly advanced methods to analyze samples gathered during investigations. In an even more nondescript building about a mile away, mechanics construct new tools for specialized investigations, like a stainless steel device for sampling substances contaminated by reactive materials or a remote drum opener that can pry the bungs off barrels of hazardous waste from as far as 100 feet away.

The Center uses the gadgets and skills at its command to come up with valid scientific and technical evidence for EPA enforcement cases. "We're just technical guys trying to get a job done," Gallagher explains. The Center's work at Denver's Lowry landfill is a case in point.

At the site of the old Lowry Air Force

(Susan Tejada is Contributing Editor to EPA Journal.)

Base, now deeded to the City of Denver, is located a municipal landfill and three ponds for industrial waste disposal. The ponds are lined with a layer of sand sandwiched between two layers of clay. In 1981, the company operating the facility found fluid in the sand layer of one pond. The company did not report the discovery, but drained the pond. About a year later, when a state inspector spotted the fluid in a sump which drains the sand, the company said it was not leachate but rainwater that had been trapped there during construction. EPA's regional office in Denver asked the Center to conduct an investigation.

Investigators took samples of the fluid back to the lab and compared them with samples from the pond sump, from the adjacent ponds, and with previous sampling data. Their chemical detective work established that the fluid was pond leachate, not rainwater.

Center personnel can respond quickly. According to Barrett Benson of the technical evaluation staff, private consultants had worked without success for 10 months to identify the mysterious fluid at Lowry. Investigators from the Center identified it in four weeks. Larry Walz of the Center's Compliance Investigations Branch recalls the time a drum ruptured at the Lackawanna Landfill in Old Forge, Pa., and the fumes necessitated an evacuation. "We got a call for help on Tuesday, and left for Pennsylvania that night. We met with state and regional people on Wednesday. On Thursday our equipment arrived, and on Friday we started digging." And Charlene Swibas of the Information Services Branch remembers an urgent call she received from investigator Jim Hatheway, on site in Texas. "The team didn't know if it was safe to open up a drum for sampling because they didn't know what was inside," Swibas says. "Jim said the name on the label looked French. While he held the phone, I checked the Foreign Trades Index on our computer and found that the firm was an Algerian company that manufactured only inorganics. So in a few minutes, we were able to determine that it was okay to open the drum."

Helping the regions prepare enforcement cases is an important function of the Center. Staffers adhere to the Center's extraordinarily detailed policies and procedures, which cover everything from protection of confidential information to use of waterproof ink on sample tags. Quality assurance officer Robert Laidlaw sees to it that chain of custody and document control procedures are followed. The profusion of procedures is necessary to assure that any findings will be admissible during subsequent enforcement actions. "The grunt work is amazing," says Laidlaw of the document



control work. "You just plod along with all this paper. But the results are what count." And the results of a properly controlled paper chase can be a conviction.

Center staff routinely serve as expert witnesses in support of enforcement actions. No matter how many times this happens, however, "You always get butterflies when you go into court," Benson maintains. "You ask yourself, 'Did I cover everything?' Fortunately our attorneys grill us to get us as ready as we possibly can be."

Enforcement support is the Center's main goal. "We look for an enforcement end point in all the work we do," Gallagher stresses. But, because of its unique capabilities, the Center provides other services as well. Staffers train regional office personnel in investigatory techniques and chain of custody procedures, and state agency officials in hazardous waste site investigations.

Laboratory staff assists other agency programs. "We provide backup support to 42 state pesticide enforcement programs," says Dr. Ted Meiggs, Assistant Director for Laboratory Services. "We help them develop their labs so they can do reliable pesticide product analyses. We can also do PCB and asbestos analyses for the toxics enforcement program. And we help the mobile source enforcement program by analyzing gasoline for lead or methanol," either of which can render a car's emission control system ineffective.

Perhaps the Center's most unique laboratory facility is the Regulated Substances Lab. Here workers treat potentially high hazard samples so that they can be safely tested in regional or contractor laboratories. Most of these samples, says Meiggs, come from Superfund sites.

There are strict safety procedures in this laboratory — workers must wear protective clothing, and the air discharge from hoods in the lab is filtered to prevent the escape of any contaminants should an accident occur. These procedures, Meiggs explains, prevent contamination of workers, the facility itself, and any low level environmental samples tested in the Center's other laboratories.

Lab analysis, establishment of a paper trail, use of specialists: the Occidental Chemical case illustrates how the Center manages to pull these resources together in an investigation.

Occidental is a pesticide manufacturing facility in Lathrop, Calif. In the course of its normal operations, the company turned out "off specification" products — process wastes, cleanup residues, and bad lots. These wastes were buried on site, some in the groundwater table

Handle with care: In the Regulated Substances Lab, technicians in protective clothing work with potentially high hazard samples.

Sky watching: An investigator uses a laser transmitter to measure the opacity of smokestack emissions, day or night.

where they migrated and contaminated the aquifer. Residents began complaining about their drinking water. The State of California investigated, found evidence of contamination, and requested assistance from EPA's regional office in San Francisco, which in turn requested help from the Center.

Carroll Wills, Chief of the Center's Enforcement Specialist Office, explains what happens next. "NEIC sent in a team of hydrologists, geologists, and chemists. For three weeks, they ran an on-site investigation. They interviewed people to reconstruct what had occurred. They inspected the facility, took samples to determine where the waste streams were generated. They examined company records to find out about its waste disposal practices, past and present."

As a result of the investigation findings, a complaint against the company was filed. The firm eventually signed a consent decree, agreeing to drill wells to determine the extent of contamination, to submit a remedial plan for abating fur-

ther contamination, to implement the plan, and to allot funds to universities over a 10-year period for environmental research studies. In conformance with the consent decree, the company has built and is now operating a waste treatment facility, and will perform studies of its effectiveness.

When the consent decree was filed, in February 1981, it was the largest monetary settlement a company had agreed to in an EPA civil case. It was also the first major hazardous waste settlement requiring a company to do an extensive plan of study. As such, says Wills, it set a precedent within the Agency, and the Occidental consent decree is being used as a model in several other major cases now in negotiation.

The workload at the National Enforcement Investigations Center is heavy. Many investigators are on the road at least 60 percent of the time. Still, turnover is low and job satisfaction is high. Why?

"We have a clear mission, and a sense that we're doing something worthwhile," says Meiggs. Barrett Benson elaborates. "You can't sell the environment short," he says, "and that's where the Center won't budge." □

Public Servants, Private Eyes

It seemed like a good idea at the time. For four bucks apiece, Mr. Epifanio Martinez of Espanola, N.M. bought about 35 empty barrels from a waste oil processor in Albuquerque. He hoped to make a little money reselling the drums to neighbors for use as burn barrels and barbecue pits.

But Mrs. Martinez, his wife, was worried about the **CAUTION** labels that remained on a few of the drums. She called the New Mexico Environmental Improvement Division to find out what the labels meant. Thus began a lengthy criminal investigation that eventually resulted in convictions of two individuals and a company, Nuclear Engineering Services, Inc., for conversion of government property, contract fraud, mail fraud, felony false statements, and violations of the Toxic Substances Control Act.

EPA's National Enforcement Investigations Center (NEIC) ran the investigation. Criminal investigator Kirby O'Neal was the special agent in charge. He retraces how the Center became involved and how the paper trail he followed led him to Nuclear Engineering.

The state officials contacted by Mrs. Martinez, O'Neal recalls, got in touch with EPA regional officials in Dallas. They learned that the words *McClellan AFB* appeared on some drum labels, and in turn called EPA regional officials in California, where the Air Force base is located. The California office turned to the Center for investigative help. O'Neal, a longtime criminal investigator for the U.S. Customs Service but new to the Center, was assigned the case his first day on the job.

The Defense Property Disposal Service, part of the U.S. Department of Defense, is charged with disposing of hazardous waste generated by the U.S. military. The Service had let a contract to Nuclear Engineering Services, Inc. of Antigo, Wis. to dispose of PCB-contaminated oil from various military installations throughout the United States. Barrels of the highly toxic oil were shipped to McClellan from all over the country. From there, Nuclear Engineering was to transport them to sites in Texas and Alabama licensed to dispose of PCBs.

The Texas facility accepted the wastes for disposal. But the Alabama facility did an on-the-spot analysis of the wastes and found that they contained more than 500



parts per million (ppm) of PCBs although they were falsely presented as containing less. The facility rejected the drums since it was not licensed to dispose of wastes with a concentration higher than 500 ppm.

Accompanied by Nuclear Engineering president Vernon Baseman, truck driver David Faulkner left Alabama. He headed back west with his poisonous load. In Albuquerque, he sold the drums cheap to a waste oil processor, telling him that they contained ordinary, non-toxic waste oil. The Albuquerque dealer drained the drums and sold the oil to another waste oil processor in Denver, who in turn sold it to asphalt paving contractors in the Denver area. The Albuquerque dealer also sold the empty drums, with traces of contaminants, to anyone who wanted to buy them. That's how they ended up in Epifanio Martinez's backyard.

O'Neal had to find all this out and prove it with evidence that would stand up in court. In Wisconsin, he interviewed state environmental officials who had had previous experience with Nuclear Engineering. At McClellan, he interviewed military personnel who had supervised the loading of the PCB-contaminated oil onto Nuclear Engineering's trucks. In Alabama, he took sworn statements from people who had talked to Faulkner and Baseman, and reviewed the files of the on-spot waste analysis. In New Mexico, he interviewed the waste oil processor who had purchased the oil, took statements from other witnesses who had seen the transaction and could identify the company truck, and obtained a truck repair invoice proving the truck had been there. In Utah, at offices of the Defense Property Disposal Service, he obtained the original contract between the Defense Department and the firm, and fraudulent documents the firm had later submitted for payment.

The false invoices, forged manifests, and other evidence O'Neal collected were enough to convince a New Mexico grand jury, which last year handed down a unanimous indictment against Baseman, Faulkner, and the company. But, O'Neal explains, something even more important than the indictments and subsequent convictions has come from this case.

As a result of the Nuclear Engineering investigation, the Defense Property Disposal Service now gives EPA's National Enforcement Investigations Center a copy of every hazardous waste disposal contract that it writes. The Center reviews each contract, looking at the reputation of the contractor, any record of previous violations, the type of hazardous waste involved, and the contractor's disposal plan. This new procedure has already produced indictments of two Florida firms that, like Nuclear Engineering, sold PCB-contaminated oil falsely represented



The first clue: Investigators found this damaged label on an empty drum in a backyard in New Mexico. It started them on the trail of a company that had disposed of PCBs illegally.

as ordinary waste oil to asphalt paving contractors. Four more similar cases are under investigation, and many others involving mishandling or accidents rather than criminal intent are being taken care of administratively.

Criminal Enforcement Agencywide

According to Courtney Price, Assistant Administrator of the agency's Office of Enforcement and Compliance Monitoring, EPA's enforcement apparatus prior to 1982 focused almost exclusively on development of civil and administrative cases. The agency had no trained criminal investigators, and most of the criminal cases EPA did refer to the Department of Justice for prosecution were turned down for insufficient case development or lack of prosecutive merit.

With growing public awareness of the problem of illegal hazardous waste disposal, and with the maturation of other environmental statutes, EPA considered establishing a professional criminal case development capability within the agency. In May 1982 the agency began recruiting investigators. By October of that year, 23 had been hired.

The new investigators have extensive experience with other law enforcement agencies like the U.S. Drug Enforcement Administration, the Federal Bureau of Investigation, and the Internal Revenue

Service. They are public servants, but private eyes.

Since their hiring in October 1982, the scope of EPA's criminal enforcement has increased significantly. As of December 1983, there were 134 open cases on EPA's criminal case docket, and Justice Department rejection of EPA referrals had been virtually eliminated. In fiscal year 1983, indictments were obtained in 13 cases against 34 corporate and individual defendants, equalling the number of defendants indicted in the three previous years combined. Also in fiscal year 1983, convictions of 28 corporate and individual defendants were obtained in 12 prosecutions.

In October 1983, the criminal investigative staff was made part of EPA's National Enforcement Investigations Center. "The record of accomplishments," said Price in a memo to regional administrators, "can only improve through this change."

Carroll Wills, Chief of the Center's Enforcement Specialist Office, agrees. "There is a strong effort now to get the criminal enforcement initiative incorporated in regional enforcement programs," Wills says. "The regions, we hope, will use criminal enforcement as another tool in their enforcement toolbox to achieve compliance with environmental laws." □

Three State Attorneys General Report on Their Programs

What are the challenges in enforcing environmental laws at the state level? *EPA Journal* asked the attorneys general in three states, Massachusetts on the East Coast, Wisconsin in the Midwest, and Washington on the West Coast, to comment. Here are their views:



Francis X. Bellotti

Making the New Cleanup Laws Work

By Francis X. Bellotti
*Attorney General
Massachusetts*

In response to increasing public concern, the Massachusetts General Court has recently enacted legislation designed to forestall the illegal disposal of hazardous wastes.

As do the laws of other states, these statutes impose criminal as well as civil liability on those who handle hazardous waste improperly; they establish a manifest system to allow for the tracking of hazardous waste "from cradle to grave," they hold landowners, generators, transporters and other responsible parties strictly liable for any release of hazardous material, provide for treble damages in the event of such a release and establish a rebuttable presumption that a violation entails irreparable harm to the public health and the environment.

Together with pre-existing water and air pollution laws, these new statutes provide most of the currently identifiable basic tools that I and other law enforcement officials in this state need to protect the environment and the health of our citizens. In this state at least, the legislature and the citizens who have pressed for tough environmental laws have done their part. It is time for the officials who have authority to administer and enforce these laws to prove that these efforts were not futile.

Effective enforcement of environmental statutes is, despite their stringent provisions, no easy task. Judges are, for the most part, not familiar with environmental legislation and need to be educated, both through formal training and through the familiarity bred by frequent exposure to environmental claims and to the strict terms of existing laws. Case law must be

developed which is consistent with the clear legislative desire to impose liability on and reach the assets of all parties accountable for violations. Difficult decisions must be made to ensure that the limited resources available to law enforcement agencies are used in the manner most likely to encourage widespread compliance with the law.

In recognition of the difficulty of establishing the causal connection between contamination of a water supply and a particular unlawful handling of chemicals, statutes may hold parties liable for any improper use of those chemicals or introduction of them into groundwater. But those strict provisions are to no avail if judges, accustomed to imposing liability for concrete, observable harm directly traceable to particular conduct, insist that such a connection be made before they impose liability; likewise, provisions for civil penalties in the context of a civil lawsuit.

And our efforts will lead to empty judgments if judges are not willing to pierce corporate veils, hold corporate officers personally liable and grant pre-judgment attachments where they are appropriate. The common law which has developed in each of these areas in other types of cases must be applied to environmental litigation as well if there is to be any hope of relieving innocent taxpayers of the burden of paying the large sums required to abate and remedy the damage caused by environmental infractions.

Law enforcement officials must be more willing than ever to seek criminal sanctions for deliberate environmental violations. So long as monetary penalties are all that is at stake, there are always those who will simply count that risk as a cost of doing business. Criminal prosecution should not be limited to the most egregious "midnight dumping" case. Especially with the new reporting and manifest requirements which the federal government and many states now impose, there is a class of violations which can and should be treated as routine misdemeanors. Far less labor-intensive than the more celebrated "midnight dumping"

prosecutions, such routine criminal cases would quickly alert individuals and businesses throughout a state to the fact that stiff statutory and regulatory requirements are more than mere verbiage.

In the civil arena, as well, there is a need for more routine, relatively small-scale litigation. Much of the focus to date has been on large-scale litigation over abandoned hazardous waste sites. This type of litigation, while it is clearly important, is a tremendous drain on the legal and technical resources of enforcement agencies and does little to discourage the smaller-scale violations which, in the aggregate, pose a major threat to the environment. Efforts should be made to identify those less serious matters which require relatively little in the way of resources and to develop routine procedures for pursuing them. This routine litigation will also serve to familiarize the judiciary with environmental litigation.

There is a tremendous need for cooperation and coordination among state law enforcement agencies and between state and federal agencies to ensure that limited public resources are applied in the most effective manner possible. Every effort should be made to avoid duplication of effort or, what is worse, actions at cross-purposes. Knowledge and experience in this relatively new field should be freely shared. District Attorneys, who have not historically had the expertise available to them to bring environmental prosecutions, should be placed in contact with environmental agencies and referred cases suited to their resources.

Given the limited resources which are available, decisions as to both civil cases and criminal prosecutions should be made in part on the basis of expected regional impact, for a well-chosen, well-tried case can go far in encouraging voluntary compliance by others. Appropriate efforts should, of course, be made to publicize actions taken so that people are in a position to learn from the mistakes of others.

Finally, and most importantly, law enforcement officials must vigorously pursue violators, seeking the maximum relief that is available and appropriate to the case. In this connection, Attorneys General and District Attorneys can bring at least two things to environmental litigation that the agencies charged with administering environmental laws often do not. First and most obvious is prosecutorial judgment. It is my experience that an agency charged with enforcing a single set of statutes is almost never capable of viewing violations of those laws in the same way as the public and the courts. Nothing can doom a systematic environmental enforcement effort more effectively than turning loose on the

judiciary a group of single-minded zealots with no sense of what is serious and what is not. If we expect judges to impose severe penalties when the cases warrant them, then we must first convince those judges that we can identify serious cases.

Second, agencies accustomed to the give-and-take that typically characterizes the relationship between regulator and regulated often find it difficult to shed that perspective and assume the position of an advocate at the point where litigation is necessary. Unfortunately, the agency often enters the litigation still playing its quasi-judicial, compromise-seeking role, and fails even to ask the court for substantial punitive relief. Given the natural propensity of judges to strike a compromise between the positions advocated by the parties to a suit, the agency is encouraging through this approach a result which affords less relief than what it already perceived as a compromise.

The public is entitled to more vigorous advocacy on its behalf. The more seriously those enforcing environmental laws treat infractions, the more seriously courts will treat them, provided of course that we properly identify serious cases. We should not be reluctant to prosecute "legitimate businessmen" who continue to violate environmental laws. The public is no longer willing to tolerate business activity that sacrifices the environment for economic gain. It is perhaps the greatest challenge facing law enforcement officials today to ensure that the public and legislative determinations of the past several years have a profound effect on the way this Nation conducts its business. It will be the task of the prosecutors to ensure that we meet that challenge by making balanced, professional judgments. □

Groundwater Quality: The Next Regulatory Issue

By Ken Eikenberry
*Attorney General
Washington State*

Over the past two decades, the spotlight of environmental protection has shifted perceptibly from one area of regulation to another. From the mid-1960s through the early 1970s, the federal and state governments centered their attention on development of comprehensive water and air pollution control programs. Gradually, during the early 1970s, they were replaced on center stage by federal and state "shoreline" and "coastal zone" management programs and by efforts to protect the marine environment from oil spills. In turn, the later 1970s and early 1980s has been a period of focus on the regulation and cleanup of "hazardous" wastes and the difficult task of controlling the disposal of radioactive wastes.

The spotlight of environmental protection activity will be shifting shortly, in my view, to the regulation of groundwater, especially the protection of its quality.

The signs of increased governmental emphasis on this important subject cut across federal and state government lines. In the west, several states, e.g., Montana and New Mexico, have recently begun new groundwater protection initiatives under their water pollution laws. The Department of Ecology of my state is presently designing a comprehensive groundwater quality program of ambitious proportions.

Nationally, Congress has under consideration a number of groundwater-related bills among the most prominent of which is one establishing a National Groundwater Commission. The federal executive is also active. Recently, the U.S. Environmental Protection Agency, after several years of internal evaluation, has circulated a draft "strategy" to state officials setting forth the path that the Agency proposes to follow in protecting groundwater quality.



Ken Eikenterry

The Need to Protect Groundwater

In light of the wide array of existing legislation designed to protect water quality, it is surprising to many that there is a present need to emphasize the protection of groundwater quality. The question might well be asked: Hasn't that issue already been addressed?

Part of the answer to the lack of government action in this area is the "out-of-sight, out-of-mind" notion. The public, for the most part, has neither perceived nor enunciated any environmental concern that has been translated to a call for government action. Further, government effort has been nonassertive generally for a very practical reason. Facts available to groundwater managers concerning the geo-hydrologic condition of most aquifer systems, especially in terms of water quality and contaminant contribution, are not only very limited but often attainable only at great expense. In sum, the resources necessary to run an effective regulatory effort have not been provided to the administrators.

A significant shift in public sentiment is now underway both in my state and nationally. Domestic water users, whether they derive their water from a municipal supply or their own private well, are now aware of serious contamination threats to their supplies and have become deeply concerned. One measure of magnitude of the concern centers on the fact that an estimated 50 percent of my state's residents, including 500,000 rural residents, rely on groundwater for domestic supply. More-

over, 34 percent of all water used by municipal systems and 22 percent by industry is derived from groundwater sources. Nationally the figures are just as significant. According to an EPA study, approximately 117 million Americans obtain their drinking water from groundwater supplied by 48,000 community public water supply systems and by 12 million individual wells.

Existing Controls

The federal system's regulatory programs that touch upon groundwater quality protection are, today, split up and largely uncoordinated administratively.

Many states' longstanding all-encompassing water pollution control statutes have been, as to groundwater, in the semi-dormant operating condition of Washington's. While these statutes expressly cover protection of groundwater, their various mandates and requirements have not been applied to groundwater in any effective, comprehensive manner. (Of course, as noted earlier, a number of states have recently activated or are about to activate them.)

Turning to the federal level, there are at least nine recently enacted regulatory statutes that deal with one aspect or another of groundwater quality regulation. The fundamental flaw in this array of federal government programs is that, taken together, they constitute neither a comprehensive groundwater regulatory program nor, for the most part, even a coordinated approach to the subject.

The Challenge

Against this background of a piecemeal federal statutory setting coupled with long authorized but slow-starting state efforts, the challenge today is to develop a comprehensive program that protects all federal and state interests in the regulated resource.

Historically, the cornerstone of federal water policy has been written in terms of longstanding "deference to" and "primacy of" state law based programs. In terms of water quantity programs, Congress has consistently deferred, for more than a century, to comprehensive state water right codes for the allocation of surface and ground waters among various users and to beneficial uses. Likewise, Congress has enacted major water pollution control statutes over the years. Since its active involvement in that regulatory area, the federal legislature has repeatedly emphasized the primary role of the states in the field.

The foundation for these federal policies centers primarily upon the solidly-based proposition that, in terms of our federal system, the successful man-

agement and protection of a water resource can be best achieved through a comprehensive, unitary regulatory program administered by a single agency. The federal policy of deference to state primacy in water quality and quantity regulation is also founded on the recognition that state interests in water generally outweigh federal interest.

The challenge to each of the states is to establish an effective groundwater quality program. If a state program is to reach that objective, all legitimate federal interests in groundwaters of a state must be protected. In this regard, federal interests in groundwater bodies, while appearing to be substantially less than in surface waters, do center upon two distinct areas of legitimate concern: (1) public health, and (2) interstate ground water.

An Effective State Model

The first element to be initiated in any water quality protection program is to determine the level of protection a water body is to receive in terms of quality. To make that determination, it is necessary to decide what beneficial uses are to be made of the water body. Thereafter, measurable receiving water quality criteria must be established to insure that the water quality is satisfactory for the chosen beneficial uses.

Some may argue that a "nondegradation" policy should be applied to all groundwaters. That is, water quality criteria for all groundwater bodies should be set so that no deterioration below existing quality of a body would be allowed. For the most part, it would appear that all groundwater bodies that are now "drinkable" should be protected in that condition. However, it may not be reasonable to retain naturally "polluted" waters in their natural condition where they have already been despoiled by human acts and are not remediable at reasonable cost. (This general approach was set forth in an address by Arizona Gov. Bruce Babbitt in an American Bar Association workshop on groundwater regulation January 11.)

After water quality criteria are set for each receiving water body, the next element required of a state program is the inclusion of a range of regulatory and enforcement tools sufficient to insure that the water quality standards will not be violated. These tools are likely already contained in the codes of many states.

Earlier, I noted several federal groundwater management programs. In order to achieve the successful implementation of a state administered unitary system, it will be necessary for federal agencies to tailor their implementation to insure that they are fully

compatible with the dominant state program. Further, where existing federal programs mandate actions or decisions contrary to those of the state program, federal statutory modifications should be enacted.

The EPA's groundwater strategy draft describes the strategy as being structured "around four main needs" and then, commendably, states the first need as "building and enhancing institutions at the state level." Immediately thereafter the draft provides:

EPA will set aside program funds to support state program development. EPA will draw earmarked funds from existing appropriations to reinforce states with the interest and commitment to develop their own institutional capability. These funds will support necessary information gathering and planning....

The point made by the EPA is an important one. No program of groundwater quality protection can be successfully implemented unless far more is known about physical conditions underground than is now known. Financial support, provided by the EPA to states, is certainly meritorious.

EPA also suggests that it plans to move with some dispatch in the exercise of its existing statutory powers. In so doing, I urge that the Agency follow a policy that contemplates exercises of power which are designed to meet the standards and use objectives set by the state for such waters. Further, this exercise should take place only when state efforts to achieve those ends are not being effectively pursued. In the long run, a policy of state dominance, as espoused by the EPA, cannot be realized unless it and other federal agencies are willing to carry out their programs in fashions which recognize that the basic objectives to be reached are those established by the state.

The Bottom Line

Groundwater quality protection programs must be implemented effectively and soon.

Within our federal system, responsibility for their implementation is, in my view, primarily the role of each of the states. This is a heavy responsibility. Each state is challenged to develop and aggressively pursue a program that promotes and protects all legitimate public

interest including federal interests. The challenge to the EPA and other federal agencies is equally heavy. Their efforts should center upon actions of encouragement to and support of states that are willing to meet their primary regulatory roles. In such situations, federal programs should be implemented, whenever legally possible, so that state programs are indeed dominant.

If a combination of federal and state government efforts is pursued in a spirit of goodwill, unitary state programs can effectively protect groundwater consistent with all legitimate national and state interests. □

Enforcing Environmental Laws

By Bronson C. La Follette
Attorney General
Wisconsin

The Wisconsin attorney general has unique opportunities to shape environmental law through enforcement. This article will explain what I view my role to be, as head of the Wisconsin Department of Justice, in setting and implementing Wisconsin's environmental policies, both through state agency representation and through litigation initiated by the attorney general. My philosophy is that an elected attorney general must constantly weigh the desires of the state agencies he represents against the public interest: the two don't always coincide.

The Wisconsin attorney general's 417-person staff is small as state agencies go and refreshingly understructured. I try to keep the bureaucratic layers thin to keep me in touch with staff and allow good, prompt decisions. The Department of Justice Legal Services Division, charged with the state's litigation responsibilities, consists of 89 assistant attorneys general organized in eight "units" of expertise. Nine of these assistant attorneys general work in the environmental protection unit, and I have appointed two others as "public intervenors" authorized by Wisconsin statutes to protect public rights in the environment.

The Wisconsin Legislature has assigned most of the responsibilities of environmental protection to the Department of Natural Resources (DNR). Criticism of DNR ranges from the redneck ("Damn Near Russia") to well-reasoned debate as to whether the agency is adequately protecting the environment. By statute, the attorney general represents DNR when it is sued. More significantly, we also prosecute DNR enforcement actions in EPA-delegated programs (Clean Water Act, RCRA, Clean Air Act) and in other state-run environmental enforcement programs (conservation, fish and game, Wisconsin Environmental Policy Act, wetlands and other water-regulatory programs.)

Apart from the issuance of administrative orders, DNR lacks authority to force compliance with environmental laws through court action. Only the attorney



Bronson C. La Follette

general has that power. This is what gives the attorney general the responsibility — and unique opportunity — to shape state environmental policy in ways that meet the public's, not just the agency's needs. As an elected constitutional officer the attorney general not only must represent his client but also a much broader interest — the public interest. I always try to remind our staff that we are a Department of *Justice* in every sense of the word. In my opinion, the lawyer's job — and this is no less true when "the client" is a sprawling agency — requires him or her to sometimes steer the client in other directions. And sometimes the attorney's job is to just say "no."

In representing DNR, we steer our client in at least three ways. First, we represent the client to the best of our abilities when we agree to take the case. Second, we decline to represent the agency when we believe it has erred legally or has exercised its powers unfairly. This forces the agency to the unpleasant chore of asking the governor to appoint special counsel — after the attorney general has stated in detail his reasons for declining representation. Since most agencies dread losing face almost as much as a paper shortage, DNR seldom requests special counsel. A happy consequence is that DNR usually consults us before it makes major decisions that may result in litigation so that we can engage in preventive law if need be.

Our third steering mechanism is the attorney general's authority to settle cases on his terms. While the agency must be consulted before settlement, the attorney general has the final word.

The fact that the attorney general calls the shots in litigation makes for a much more coherent statewide enforcement strategy than if each case proceeded autonomously, tuned only to the needs of the agency program.

The delicate balance between our two agencies well serves the people of Wisconsin, with few exceptions. An example of real cooperation and coordination between DNR and my staff is the recent \$500,000 judgment we obtained against Weyerhaeuser for its water pollution at a paper mill in central Wisconsin. Another is our continued push against Milwaukee to provide 20th-century water pollution abatement. Our staffs are working together on groundwater protection legislation and enhanced penalties for hazardous waste violations. Ongoing litigation and negotiation in hazardous waste, air and water pollution absorb most of the environmental protection unit's energies, borne out by court-awarded pollution cleanup remedies and the nearly \$2 million in statutory forfeitures the unit has collected as a result of litigation over the past two years.

The attorney general's environmental enforcement responsibilities do not end with DNR representation, however. We also advise and represent the Radioactive Waste Review Board, which is primarily responsible for negotiating agreements with the U.S. Department of Energy for activities in Wisconsin relating to the disposal of radioactive waste. We appear on Wisconsin's behalf before the Nuclear Regulatory Commission on facility siting and other issues of deep concern to Wisconsin citizens. We actively seek *amicus* opportunities in other states' U.S. Supreme Court cases, most recently the California nuclear moratorium case; the Karen Silkwood case; *In re Kovacs*, which is a case dealing with use of the bankruptcy laws to impede environmental cleanup; and the Natural Resources Defense Council's challenge to EPA's interpretation of new air source review standards.

The Wisconsin attorney general also has limited authority to initiate litigation without an agency request (or over agency objection). One example of attorney general-initiated environmental litigation is *State v. Quality Egg Farm*, a public nuisance case which resulted in an unprecedented Wisconsin Supreme Court decision applying the common law of nuisance to agricultural odors. More interesting than the closure of the chicken farm, however, was the spinoff of chicken manure jokes, puns and paraphernalia that still keep rolling six years after the case began.

Recently in another attorney general-initiated environmental lawsuit, we persuaded the U.S. District Court for the Western District of Wisconsin to enjoin

the Navy from proceeding with an expansion to the Project ELF (Extremely Low Frequency) submarine communications system in northern Wisconsin. We successfully argued that the Navy should have written a supplemental environmental impact statement to address recent medical research suggesting human and animal health impacts from the electromagnetic fields ELF generates. This victory (and the controversy it generated) underscores that there is a need for attorneys general to occasionally step outside of routine agency representation and try out new ways to engage in environmental enforcement.

A discussion of the Wisconsin attorney general's environmental enforcement authority must include a few words on the Office of the Public Intervenor. The public intervenors are assistant attorneys general designated and charged under Wisconsin statute to intervene in Department of Natural Resources proceedings for the protection of "public rights" in the state's natural resources. Since its creation in 1967 and reorganization in 1976, the office has evolved into a leading advocate for environmental protection in Wisconsin. Directed by a citizens advisory committee appointed by the Attorney General, the intervenors have initiated and been key participants in environmental legislation and administrative agency policy making.

They actively file actions in the courts and state agencies on behalf of pollution victims, local governments, citizen groups, business people and farmers who have sought the intervenors' help in environmental matters.

The intervenors not only help preserve the adversarial process needed to improve state agency decisions that affect environmental quality, but they also are a unique and valuable asset to Wisconsin citizens trying to live and work in a healthful environment.

Finally, in addition to the many in-state environmental enforcement responsibilities the attorney general assumes, we try to help maintain good working relationships with other states and the EPA. Generally, EPA already has a longstanding relationship with DNR in each of its program areas. The attorney general's own enforcement perspective and objectivity, though, enable us to help mediate problems between EPA and the state when they arise. In addition, we are now assisting DNR in developing a Superfund program that meets both Wisconsin and federal needs. At times, too, we look to EPA for assistance when litigation raises new technological enforcement problems. We continue to seek out ways to effectively handle the sometimes overwhelming environmental problems this Nation faces. □

Justice Cracks Down on Environmental Crimes

By F. Henry Habicht, II
*Assistant Attorney General
Land and Natural Resources Division
U.S. Department of Justice*



F. Henry Habicht, II

My staff and I recently had the opportunity to attend the EPA's National Compliance and Enforcement Conference held in Alexandria, Virginia. It was an important event which underscored the significance of our mutual work in the area of environmental enforcement. Although our vantage point is from the Department of Justice, my staff and I feel that we are part of EPA's enforcement mechanism, a feeling which the recent Enforcement Conference underscored. We support the effort which the EPA is making to enforce the important environmental laws under the Agency's jurisdiction.

EPA is often thought of only or primarily as a regulatory agency. And of course a large and important part of the Agency's work is in the area of rule-writing and standard-setting. But EPA is also a law enforcement agency. It is clear that the best crafted rules would be virtually meaningless if they were not obeyed. Likewise, the evidence, unfortunately, demonstrates that without an active enforcement program reliance upon voluntary action alone will not result in compliance with environmental statutes. Thus, there has always been, and in my view will always continue to be, a need for an active, aggressive enforcement program at EPA.

With that in mind, I would like to share my thoughts about enforcement and relate it to our joint effort. First, environmental enforcement is a part of the overall responsibility of the President to see that the law is enforced. There are obvious reasons for this. Vigorous enforcement in this important area of public concern is not only important to the credibility and effectiveness of EPA's regulatory program, but is also important to promoting public respect for law enforcement in all areas. The Attorney General's historic role as the attorney and prosecutor for the United States places a special obligation on him to insure that the laws are vigorously enforced. This is a role which we at the Department welcome and consider to be among our highest priorities.

Second, failure to enforce environmental statutes often confers a substantial competitive advantage on law-breakers. Firms which fail to comply gain an unfair multimillion dollar edge over competitors who have complied. It is difficult to explain to the good corporate citizen why it should spend millions of dollars on pollution control equipment when its competitor down the road has not.

Third, the public demands and deserves to know that the Executive Branch is following the mandates of its elected representatives. Congress writes the laws we enforce. There may be legitimate policy differences between the Executive and Legislative Branches, but once the laws are on the books they should be obeyed and enforced as written.

Fourth, law violators must be deterred and punished whenever appropriate. This does not, in my view, merely mean that they should be required to do what everyone else has been doing all along. There should be a real sting for the violator. In that regard, we favor the assessment and collection of penalties as well as injunctive relief in our cases. We seek to insure that our settlements account for the advantage which violators have received from non-compliance.

Fifth, a prosecutor clearly must be "fair" by not overreaching or disregarding the rights of a defendant, but we must recognize that our first duty is to serve the public welfare by enforcing the law as enacted by Congress and the President.

There has been a lot of talk about the meaning of the term "fair" within the context of EPA's enforcement program. I think we *must* be fair in our treatment of defendants. But fairness connotes consistent treatment for those similarly situated. Moreover, Congress undoubtedly advanced a conception of fairness to the *public* in seeking by law to shift the economic and public health costs of pollu-

tion control from the citizens to those who have created the problem. There will always be policy differences between the government and defendants. Each is entitled to its viewpoint, but sometimes the law as written by Congress and interpreted by the Executive Branch and the Courts may result in what some defendants would call "unfair" results. The remedy for those defendants is to appeal to the Congress, not to the prosecutor.

This issue frequently comes up in hazardous waste cases. Defendants have said that the government's position on joint and several liability under Superfund is "unfair." District courts which have examined this question disagree with them. Defendants have a policy view based upon understandable self interest. The positions we have taken in our Superfund cases, in turn, reflect the government's interest in vigorously and effectively advancing the public health and enforcement goals set forth in this important statute, including ensuring that responsible parties, rather than the public, bear the costs of response to the extent possible.

Our joint record of achievement during the past fiscal year is something to be proud of. EPA referred 143 cases to the Department. We filed 200 cases in FY 1983 alone, cutting into a then-existing backlog of cases. We obtained 105 settlements during the same year, including 15 in hazardous waste cases totaling nearly \$70 million.

In the past few years EPA and the Department have also started some important new initiatives. The Department's Environmental Crimes Unit which works with EPA's Office of Criminal Enforcement obtained more indictments and more convictions than in all previous years combined. I strongly support this effort. There simply is no excuse for chronic and serious violations of environmental laws. Moreover, respect for the law will inevitably erode if the most severe sanctions are not brought against the most deliberate, serious violators. In one of our cases last year in Region 1, we obtained convictions against the company, its president, vice-president and other offi-

cials. While the jail time was probated, the Court imposed the largest fines ever in that district. I think the message has gotten out that EPA and the Department are serious about criminal enforcement. We will continue to work with EPA's fine investigative and enforcement staff to expand our criminal enforcement effort. We will seek jail time for individuals charged with criminal violations of the environmental statutes.

An important element of any enforcement program is the knowledge by violators that they will be swiftly prosecuted. We at the Department have worked hard to expedite the referral and filing of enforcement cases. We understand EPA's frustration about delays in case analysis and filing. In that regard, I am happy to report that the average time between referral from EPA Headquarters to the Land and Natural Resources Division and filing last year was 70 days. The new procedure of direct referrals from Regions to the Department is intended to streamline the existing system even more. It will be important to the success of this trial program that all offices of both Agencies work hard to insure that litigation reports are complete, accurate, and updated as new information is received. We are committed to staying in close contact with both Regional and Headquarters personnel to ensure that we are responsive to any of EPA's program or case-specific concerns, and that our winning ways continue.

The Land and Natural Resources Division is growing more effectively to serve EPA's enforcement needs. We currently have 192 attorneys and 166 support staff for a total of 358 personnel. Of this total, 86 persons are devoted to doing environmental enforcement work. These cases are resource intensive. But they are too important not to devote necessary resources to make them succeed. The Lands Division attorneys understand that vigorous prosecution of these cases is

necessary and have instructions to move them quickly to trial. In our view, once we receive a case from EPA, our joint efforts are aimed at the litigative process. We want to settle them and avoid unnecessary litigation if we can. But we can only negotiate from strength if we are pushing the other side in the litigation and demonstrate to the other side, as we have with great success in several recent cases, that we are ready and able to try the case if an adequate remedy cannot be negotiated. This sort of commitment, whether the case is settled or tried, will send a strong signal and pay significant dividends in future cases.

Administrator Ruckelshaus has urged top EPA management to redouble their efforts in the enforcement area. I want to echo this sentiment. Both agencies' staffs are comprised of superb public servants who have the ability and the resolve to give the public the environmental protection it deserves and demands. We are at the cutting edge of the environmental law and the public is looking to us to protect their health and environment. Just as the Administrator has pledged his support for environmental enforcement, I want also to observe that this is an important area of law enforcement generally. We at the Department look forward to working with EPA and are confident that the EPA's efforts and accomplishments in the coming year will be exemplary. □

National Municipal Policy Set to Protect Water Quality

EPA Administrator William D. Ruckelshaus has approved a new policy to make sure that all publicly owned wastewater treatment plants comply with Clean Water Act requirements as soon as possible.

Latest estimates show that more than 400 major and 1,300 minor publicly owned treatment works (POTWs) are not operating in compliance with their pollution control limits. In addition, a large number of municipalities still need to build treatment facilities (more than 1,300 major and 3,400 minor public sewage treatment plants) in order to come into compliance.

Under the National Municipal Policy, owners of public sewage treatment facilities that aren't meeting the law will be required to submit schedules spelling out steps they will take to comply with their discharge permit requirements. The Agency's goal is to have enforceable schedules established for all such municipalities by the end of Fiscal Year 1985.

Where extraordinary circumstances make it impossible for a municipality to meet the July 1, 1988, deadline, EPA will work with the affected state and municipality to establish a schedule for achieving compliance as soon as possible thereafter. Such municipalities will be required to do all they can in the meantime to abate pollution from their treatment facilities.

Ruckelshaus explained, "EPA is committed to a course of action that fulfills the intent of Congress and results in maximum improvement in water quality.

We also are committed to protecting the public's very large financial investment in these facilities. This policy with its enforceable compliance deadlines will help the Nation achieve these goals."

The policy requires all publicly-owned sewage treatment plants to meet statutory requirements whether or not they receive federal funds.

Since the Clean Water Act was passed in 1972, EPA has provided approximately \$37 billion in construction grants which has been allocated to communities to build improved wastewater treatment facilities. This program is one of the largest non-defense public works projects in U.S. history and has resulted in substantial progress in protecting the Nation's water quality.

However, many treatment plants have not met deadlines set by the Act for compliance with effluent limits.

The National Municipal Policy states that EPA regional offices will cooperate with the states to develop strategies for bringing facilities into compliance. Such strategies should include developing an inventory of noncomplying facilities, identifying the affected municipalities and describing a plan to bring them into compliance as soon as possible but no later than July 1, 1988. Regions and states then will use the annual state program grant negotiation process to agree on specific actions needed to carry out the strategies.

According to the policy, one of the following plans must be developed:

A municipality that has already constructed a treatment works which is not now in compliance with its permit effluent limits must develop a *Composite Correction Plan*. This should describe the causes of noncompliance, outline corrective actions needed, and provide a proposed schedule for completing the required work.

A municipality that needs to build a treatment facility or upgrade the existing

facility to achieve compliance must develop a *Municipal Compliance Plan*. This should describe the necessary treatment technology and estimated costs for construction and operation, outline the proposed sources and methods of financing the facility (both construction and operation and maintenance costs), and provide a schedule for achieving compliance as soon as possible.

The policy declares that the authority issuing the permits (either the EPA regional office or a state) will use the information in the plans and work with the municipalities to develop a "reasonable schedule for compliance." Where a municipality is unable to achieve compliance promptly, the authority will set a schedule for achieving full compliance and ensure that the facility takes interim steps that lead to this goal as soon as possible. Where extraordinary circumstances make it impossible to meet the July 1, 1988 deadline, the authority will work with the municipality to set an enforceable, fixed-date compliance schedule.

The Clean Water Act originally set July 1, 1977, as the deadline for municipal facilities to comply with either water quality-based or technology-based permit requirements. However, Congress later authorized EPA to extend the deadline for some municipalities, under certain conditions, but no later than July 1, 1983. In 1981, Congress recognized the need to provide additional time for eligible facilities and again authorized an extension of the deadline to no later than July 1, 1988. Any municipality that is not now in compliance with its permit requirements and has not received such an extension is in violation of the July 1, 1977, statutory deadline. It is this deadline that a large number of facilities have not met.



A 52-million-gallon-a-day treatment plant handling wastewater from the Metropolitan Sewerage District of Green Bay, Wis., as it started operation in 1975

In 1981, the Act also was amended to allow municipalities to install less costly facilities to meet secondary treatment requirements. EPA later published proposed regulations providing design criteria for such "equivalent" secondary treatment works.

The National Municipal Policy takes into account these deadline extensions and the new, more reasonable treatment requirements for certain types of facilities.

In setting priorities for the enforcement effort, the National Municipal Policy de-

clares that EPA will focus on treatment works that previously received federal funding assistance and are not currently in compliance with their applicable effluent limits, on all other major plants and on minor facilities that are contributing significantly to impairment of water quality.

Once compliance schedules are in place, the responsible authority will monitor progress and take follow-up action as needed. EPA Headquarters will oversee the process to ensure that the policy is being followed and that municipalities are making progress in meeting statutory deadlines and achieving the water quality objectives of the Act. □

The Role of EPA's General Counsel

(An Interview with A. James Barnes, EPA's General Counsel)



A. James Barnes

Q. What is your most important role as General Counsel?

A. There are several roles that I consider equally important. First, the General Counsel needs to be an effective manager. The recruitment, training, advancement, motivation and direction of the attorneys and staff in the office are critical. I believe OGC is most likely to deliver high quality legal service to the Agency if it has first-rate people who are given an opportunity to perform to the maximum of their ability and who can take professional pride in their roles and the contributions they make.

Second, as the Agency's chief legal officer, the General Counsel has an obligation to work closely with EPA's policy and program officials to make sure they are aware of the limits and obligations of the law. At the time a policy maker is considering various possible courses of action, OGC should advise him or her of the legal strengths and weaknesses of the alternative actions. Once the policy option is selected, we should work to enhance its defensibility—and if it is challenged, to defend it. In short, OGC's job is "to provide knowledgeable counsel to help the policymakers implement EPA's mandate."

Q. How many suits are pending now against EPA?

A. Several hundred at present.

Q. Who brings most of these suits?

A. The lawsuits are brought primarily by trade associations and environmental groups. It is not unusual to have challenges by both to major regulations promulgated by the Agency.

Q. Is all this activity a sign that the Agency is still a vital force?

A. It certainly indicates the Agency is making decisions that are regarded as critical to the protection of the Nation's public health and the environment and that those decisions can have a very significant impact on industry, on various communities, and on individuals.

Q. How does your office relate to the Office of Enforcement and Compliance Monitoring?

A. In the 13 years of EPA history, the enforcement function and the general counsel function have been combined and split several times. When he returned to EPA last May, Bill Ruckelshaus concluded that both of these functions could be more effectively performed if they were separated and placed under two Presidential-level officials. I concur in that judgment. As you know, the Office of Enforcement and Compliance Monitoring now has the lead in establishing enforcement policy for the Agency, in providing guidance to the Regions, and for tracking the Agency's compliance efforts. It also has the primary responsibility for working with the Department of Justice to prosecute enforcement actions in federal court.

The General Counsel's office shares a number of areas of interest with the enforcement office. On questions of substantive law we work closely with them to make sure we are consistent in our interpretation of EPA's statutory authorities. We also share an interest in the quantity and quality of the legal staff in the Regional Counsel offices. Although we have been separated, we have tried to retain a close and effective working relationship with the enforcement office.

Q. What is your philosophy in handling freedom of information requests?

A. First, we should be responsive to the intent of Congress. Congress has made it clear that, with a few specified exceptions, citizens are to have access to the work product of the government they are financing. Those exceptions include documents that involve, among other things, confidential business information, personnel information and national security. The Administrator's philosophy—that the Agency operates best in the open so that the public can have confidence it is doing its job properly—further buttresses our view of how the Freedom of Information Act should be implemented by the Agency.

Q. Has the Agency lost its zip?

A. No. The protection of public health and enhancement of the environment are critical and vital issues in American life, and I think the Agency is doing a pretty good job of responding to its mandate. One of the things that has impressed me on my return to EPA is the number of dedicated people I knew before who are still here. Many of them are still working long hours and bringing expertise and judgment to address some of the most complicated and difficult problems our society faces.

Q. Why did you return to EPA when you held a key post in the Agriculture Department as General Counsel?

A. Frankly, it was not an easy decision for me to make. At USDA I had one of the most enjoyable jobs I have ever

had. The Department probably has the broadest range of issues of any Government agency—international trade, housing, food safety, welfare and feeding programs, economic regulation, utility financing, and natural resources, among others—and the work was enormously interesting. Yet having been at EPA at its inception, I have deep affection for the Agency. I want to see it succeed, to be respected and to have credibility. When Bill Ruckelshaus and the White House asked me to return to EPA, I was attracted by the challenge. There was an opportunity to help the Agency perform its mission and to convince people that the Agency was being responsive to its mandate to protect public health and the environment.

Q. How many attorneys are there in the General Counsel's office?

A. Approximately 100 in the Washington office and about 200 in the ten Regional Counsel offices.

Q. What kind of future do you see ahead for practice of environmental law?

A. While the growth days for environmental law may well be over, it should remain a very solid area of legal practice for the foreseeable future. The range and nature of current environmental problems—and the emergence of new problems—indicate the need for lawyers who specialize in environmental law.

Q. Is it a good field for aspiring attorneys?

A. Yes. It is an area in which many issues can have a direct effect on the kind of world we live in and our children will inherit. Another point to consider is that the legal issues in the environmental field are among the most intellectually challenging in the field of law.

Q. Do you think Bill Ruckelshaus is enjoying his current term at EPA?

A. He, of course, is the best one to answer that question, but I suspect that he is enjoying it in a different way than when he first served as Administrator in the early 1970s. The challenge of setting up a new agency, trying to address the problems effectively and working to establish credibility with the public was exhilarating. Now the Agency is more mature and the problems we face seem to be more complicated. Either we got the easy issues out of the way the first time—or we now know a lot more and realize better what we don't know—or a little of both. In the early days the issues arrived in such a steady stream that he tended to pick them off one by one. Now I see Bill Ruckelshaus being more selective in deciding which issues require his personal attention. He marshalls his time very deliberately to focus on major problems and issues where he can make a maximum contribution: issues such as acid rain, EDB, risk assessment and risk management, and reauthorization of EPA's statutory authorities. Effective communication of major agency decisions—and targeted efforts to educate the public—are also notable features of his second stint as Administrator. Consistent with his selective focus on issues, he delegates extensively to the Assistant Administrators and Regional Administrators, expects them to do the same to their subordinates, and holds them accountable for the results. Thus, I hope he is taking satisfaction from the knowledge that he is using his impressive public managerial skills as well as his prior experience to maximum advantage to help the Agency deal with some very complex and important societal issues. □

Missouri Dioxin Cleanup Progresses in Courts

The Department of Justice and EPA recently announced a civil suit against 19 individuals and nine companies to force the cleanup of dioxin contamination at six sites in Missouri. EPA Assistant Administrator for Enforcement Courtney M. Price called the step "part of a government-wide strategy to reduce dioxin contamination in Missouri."

The government filed the suit against companies and individuals whose former manufacturing, storage or disposal practices led to dioxin contamination at four horse arenas and two additional sites, the Bliss Tank Site in Frontenac, Mo., and the Rosati site in St. James, Mo.

Meanwhile, in another dioxin case in Missouri, a Federal district judge has ruled that EPA is entitled to recover some dioxin cleanup costs from a defunct chemical manufacturing company, its officers and a waste hauler. EPA had sued to recover the costs it has incurred in cleaning up a dioxin-contaminated waste disposal site near Verona, Mo. It sought \$400,000, including the fees of the attorneys who brought the suit.

In 1980, the site, a trench on the farm of James Denney near Verona, was discovered to contain eighty five 55-gallon drums of waste with high concentrations of dioxin. The chemicals had been buried there, with Denney's consent, in 1971 by Ronald Mills, a waste hauler hired by the Northeastern Pharmaceutical and Chemical Company, Inc. (NEPACCO).

Defendants in the new suit filed by the government include NEPACCO, which produced dioxin-contaminated wastes as a byproduct of its manufacture of hexachlorophene in Verona in the early 1970s, and Russell Bliss, who sprayed dioxin-contaminated waste oil from NEPACCO's wastes to control dust.

Price said the government is asking the defendants to take immediate joint action to prevent further exposure to contaminated soil at the sites. In addition, Price said, the government is requesting long-term remedial relief at each site, including disposal, treatment or removal of the substances, restoration of the sites and continuous monitoring of the sites after cleanup. EPA will maintain oversight of these activities, she said.

"It is important to point out here," Price said, "that, in line with Bill Ruckelshaus' policies, the Agency will not enter into protracted negotiations at hazardous waste sites, but will move quickly to pursue either enforcement actions or Superfund remedies in the cleanup of all sites." Settlement negotiations with those named as defendants in the Missouri case had not proved fruitful, she added.

In the event the defendants fail to clean up the sites under this enforcement action, EPA will clean them up using Superfund monies, recovering costs from the responsible parties through additional legal channels, Price said.

"We are moving as quickly as possible to clean up dioxin contamination throughout Missouri," Price said, "combining both Superfund resources and available enforcement measures against responsible parties. We still have a great deal to do, but the people of Missouri can be assured that the federal government is moving as expeditiously as possible to bring this widespread contamination to an end."

The dioxin cleanup suit was filed by the Justice Department in U.S. District Court in St. Louis, Mo., on behalf of EPA. It alleged that the defendants' former manufacturing or disposal practices led to the dioxin contamination at the sites.

Assistant Attorney General F. Henry Habicht II, head of the Justice Department's Land and Natural Resources Division, said the suit was filed under the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation and Liability Act, frequently referred to as the Superfund law. In addition to cleanup of the sites, the suit seeks reimbursement of the government's costs in connection with the sites.

"This action is particularly significant," Habicht said, "because resolving dioxin contamination is an important element of EPA's Superfund program. In addition, it reflects the strong shared commitment of the Department and EPA to use all our resources to enforce the Superfund law and to bring lawsuits to secure prompt cleanup of hazardous waste contamination nationwide."

The following six sites were the targets for dioxin cleanup in the suit:

- The Bliss Tank Site in Frontenac, Mo., a suburb of St. Louis, where hazardous wastes and substances were stored in bulk tanks;
- The Rosati site, a number of properties in Rosati, Mo., allegedly contaminated when substances being transported by truck were sprayed, leaked or otherwise deposited on them;

- Shenandoah Stables, a horse arena near Moscow Mills, Mo.;
- Timberline Stables, a horse arena near New Bloomfield, Mo.;
- Bubbling Springs Ranch, a horse arena in Imperial, Mo.; and
- Saddle and Spur Club, a horse arena near High Ridge, Mo.

The horse arenas are structures for the stabling, exercising and showing of horses. Dioxin-laden oil was sprayed at the arenas to control dust, the suit said.

All of the dioxin wastes at these sites, according to the suit, were generated as by-products in the manufacture of hexachlorophene by NEPACCO at its Verona plant. These wastes, the suit said, were subsequently transported from that facility by Independent Petrochemical Corp. and Russell Bliss.

The dioxin at the six sites remains a hazard, according to the suit. EPA has confirmed the presence of dioxin in the soil at all six sites.

Trichlorophenol, another hazardous substance, is present at some of the sites, the suit said.

At the Denney farm, the waste site involved in the recent district court decision, the concentration of dioxin was as high as 319 parts per million.

Officials of EPA predicted that the decision would create an incentive for chemical companies to clean up sites themselves.

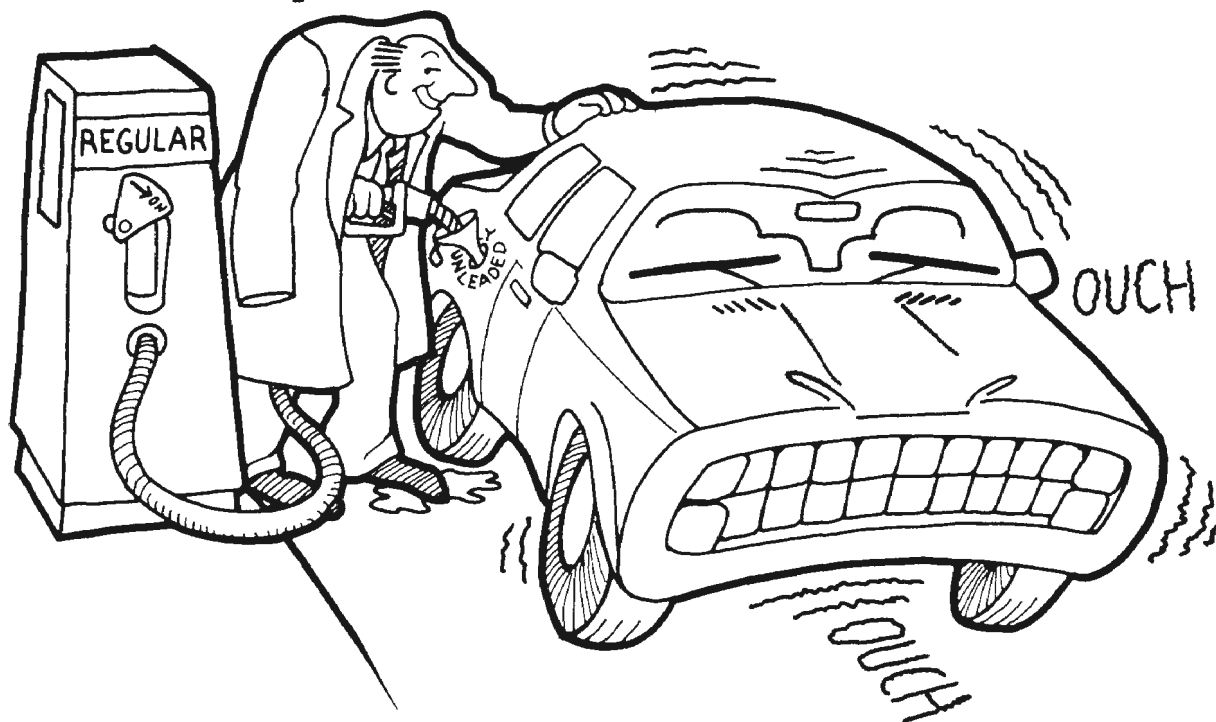
David R. Tripp, regional counsel for EPA in Kansas City, Mo., said, "It would seem that it would be cheaper for the responsible parties to do the cleanup themselves, because the court has now given EPA the legal right to recover all investigative and litigation expenses involved in cleanup suits." In its decision in favor of EPA, the court also gave the Agency the right to recover future costs of monitoring and assessing the ongoing maintenance at the farm site.

The government had considered the Denney farm case as a test case with major implications for its efforts to clean up toxic waste sites, including 37 dioxin sites in Missouri.

The ruling by Russell G. Clark, chief judge in the U.S. Western District in Missouri, came in a non-jury trial, which was one of the first to involve the Superfund created by Congress in 1980 to clean up toxic waste sites. The Act also provided that the government could seek to recover its money from those responsible for creating the waste sites.

The government had sought to recoup about \$400,000 that it spent from 1979 to the present at the Denney farm. But Judge Clark ruled that it was only entitled to reimbursement for expenses incurred after Dec. 10, 1980, when the Superfund law became effective. □

Fuel Switching Doesn't Pay



It may look like the smart thing to do. Just make the unleaded-only opening bigger, or use a funnel, and put in some old-fashioned regular leaded gasoline. It will save a little money and make that car run like a dream.

It doesn't work. EPA is trying to alert the public to the fact that fuel switching not only hurts a car's performance but could wind up costing more than it saves.

It isn't a trivial problem. EPA is alarmed at statistics showing that 13 percent of American motorists are fueling their unleaded-only cars with leaded gasoline.

Fuel switching may have once boosted performance or fuel economy, concerned EPA officials say, but cars are engineered differently now and the wrong fuel may actually harm their efficiency.

Meanwhile, an even bigger worry to EPA is that leaded gas seriously damages the catalytic converter put on most modern cars to control exhaust emissions. EPA officials say the damage can increase emissions from a car by as much as eight times, devaluing the big national investment in cutting pollution from automobiles and hobbling EPA's clean air efforts.

To illustrate the importance of the fuel switching threat, EPA officials point out that parts of 31 states won't meet national air quality standards for carbon monoxide or ozone and that a big part of the

problem is due to auto emissions.

Following up on its concerns about fuel switching and related steps that disable emission controls, EPA is cracking down.

Last November, for instance, the Agency told the County of Greenville, S.C., that it would be fined \$630,000 for 90 alleged instances of misfueling in county cars. At the same time, EPA announced that it intends to fine the City of Philadelphia \$327,500 for allegedly disconnecting emission-control systems on 131 police vehicles.

Then in early December, EPA filed a complaint against the Atlantic Richfield Co. of Philadelphia charging that the refiner removed 12 catalytic converters from company-owned vehicles and that leaded gasoline was used on numerous occasions in 28 vehicles which require unleaded fuel. The requested civil penalty is more than \$330,000. The same day, EPA charged that Lew Smith Muffler and Parts, Inc. of Covington, Ky., had removed catalytic converters from 46 of their customers' vehicles and had enlarged the gasoline filler inlets on seven of the vehicles so they could use leaded gasoline. The government is seeking \$132,500 in fines in the case.

Continuing its enforcement measures, EPA in early January issued notices of violations against 17 gasoline blenders in the Detroit area for allegedly selling

gasoline containing alcohol levels exceeding federal limits. EPA proposed fines totaling \$550,000. Alcohol is used in place of lead to boost octane, but EPA officials believe that too much of it results in increased auto emissions and higher smog levels.

EPA faces a limit to what it can do to stop the damage to emission controls—the Clean Air Act didn't make it illegal for individuals to switch fuels or tamper with catalytic converters. Forty states have made the activities illegal for their residents although the rules are proving tough to enforce.

To deal with this hurdle, EPA is taking educational measures, pointing out that according to oil industry tests, unleaded gasoline is easier on cars and means lower maintenance bills for carburetors, exhaust systems, spark plugs and oil changes. The net result, EPA is explaining to the dollar-conscious, is that the pennies that might be saved by fuel switching and emission control tampering are unimpressive compared to the repair cost savings from sticking to good pollution control practices.

EPA officials emphasize that educational steps—such as requiring offending gas stations to post signs praising the benefits of good emission control behavior—could have more impact over the long run than simply fining violators. Enforcement and education are both needed to get the message across, EPA believes. □

Enforcement Innovations Adopted for Superfund, RCRA

(The following article is excerpted from remarks by Lee M. Thomas, EPA Assistant Administrator for Solid Waste and Emergency Response, to EPA's recent National Compliance and Enforcement Conference.)

"We are instituting a number of new ideas that we think will help us to address the unique aspects of Superfund and its mission.

"The first is the process of site management planning, in which the individual aspects of each facility on the National Priority List are taken into account in developing site-specific response, cleanup and enforcement strategies. The states, the public, EPA's regional counsels, the technical enforcement personnel and others all contribute to the development of the site management plan for each of these projects.

"We recognize the need for careful planning and effective resource allocation processes in managing and conserving the Superfund. After all, while \$1.6 billion is a sizable sum of money and a major responsibility, we already have learned that it is far less than we will need to address all sites currently on the National Priority List. Keep in mind that in the years to come, this list may grow to include well over 1,000 sites.

"An effective enforcement mechanism is a cost-effective technique for ensuring sound site cleanup, and we will rely on it increasingly in the future. By developing a strong enforcement posture in negotiations with responsible parties, we can provide a necessary incentive for private-party settlements and discourage costly cleanup delays. We are learning that responsible parties are much more inclined to perform voluntary cleanups when they know they face a credible and determined agency enforcement policy. In the years ahead, we anticipate that as many as half of all site cleanups will be conducted voluntarily by responsible parties, due in no small measure to the effect of a commitment to enforcement.

"A second effort we now have underway is the development of a Superfund case budgeting process to help us utilize our legal resources more efficiently. Through case budgeting, we will plan how we will use the contract resources we have available to support the development of litigation, coordinating with the EPA Office of Enforcement and Com-

pliance Monitoring and the Justice Department. We will identify the cost elements of case development, establish known standard costs and use these data to set our priorities.

"We have learned that we do not work in a 'budget-free' environment under Superfund. We recognize that we must live with resource constraints, and we see case budgeting as a way of undertaking more effective enforcement planning activities.

"The Resource Conservation and Recovery Act (RCRA) established a more traditional regulatory program, with a built-in state role as well as permitting and compliance components not unlike those of several other primary EPA statutes. We fully recognize the need for an effective federal/state partnership in order to ensure the widest compliance with RCRA standards throughout the waste management community.

"We have developed a process for turning over significant authority to the states to manage their own hazardous waste programs. Recently, Delaware became the first state to achieve final RCRA authorization. Many more are seeking to follow Delaware's lead in earning full authorization for their programs. Forty-four states and territories and the District of Columbia currently operate programs under the interim authorization provisions of RCRA.

"As we move toward granting final authorization to more states, I am especially sensitive to the need for high-quality programs if we are to make RCRA serve the public interest as Congress intended. Last October, I established a task force within the Office of Solid Waste and Emergency Response to examine this issue and to develop a formal policy on RCRA program quality. This task force, chaired by Carl Reeverts, has developed a draft policy which I have distributed to the EPA Regional Administrators. The draft policy is being widely discussed and modified to reflect input from a variety of headquarters, regional and state sources.

"Basically, the policy will establish a national framework for overseeing the quality of state RCRA programs under final authorization. It will be consistent with the fiscal year 1985 agency program guidance and will be the basis for headquarters oversight of regional activities with respect to state programs.

"Overall, a quality program capable of enhancing and complementing federal activities is one that knows and understands the regulated community; leads to the permitting or closure of all treatment, storage and disposal facilities as quickly as possible; achieves compliance; and fosters a strong EPA/state relationship. Enforcement will be a significant element of any quality program, for those in the regulated community must be convinced that there is risk involved in non-compliance. Those who comply willingly must be assured that their good faith actions will not put them at an economic disadvantage with competitors who make no attempt to meet our regulations.

"As far as state enforcement programs are concerned, the criteria we plan to use to determine quality are the following: (1) the level of compliance; (2) existence of a multi-year compliance monitoring strategy that delineates the number and types of compliance monitoring activities; (3) operation of the program in accordance with the monitoring strategy; (4) inspections and record reviews that are thorough and properly documented; and (5) enforcement actions that are timely and effective.

"Once this program quality policy is established, a series of supplemental enforcement guidance documents will be developed and distributed throughout 1984. This series of guidance packages will address federal enforcement actions in authorized states, the definition of Class I violations, oversight inspections, groundwater compliance evaluations and closure/post-closure and financial compliance evaluations. An inspection manual also will be prepared.

"Specific performance measures and expectations are being developed for each enforcement criterion. We will use these measures to operate an enforcement program which achieves the levels of compliance we feel are necessary to protect public health and the environment as early as possible.

"The first criterion we will address is the level of compliance. Is it improving over time, thus showing promise of a high rate of compliance in the future? We will measure success in this area using a straightforward evaluation formula.

"Perhaps most important of all, in this area, will be the determination of just how sound a given state's compliance numbers are.



Hazardous waste dump in Oriskany, N. Y., being cleaned up in EPA remedial action under Superfund law.

"We also want states to have a multi-year monitoring strategy in place that delineates annual numbers of inspections, record reviews and followup inspections. Annual work programs specify compliance monitoring priorities. A state strategy should call for inspections of all permitted and non-permitted major facilities each year. In addition, multi-year time frames should be provided for completing inspections of all generators, transporters, and non-major facilities, focusing on those which pose the greatest public health and environmental threats.

"We will be looking for states to inspect a certain percentage of all permitted facilities annually, to evaluate and verify all facilities that submit closure plans or request withdrawal and to identify those facilities that have not provided notification, as well as those operating without permits or manifests.

"State inspections should be conducted in accordance with the compliance strategy. We will look at the actual number and types of inspections and record reviews conducted quarterly as they relate to the planned number and types promised in state grant agreements. We expect evaluations and verifications for all facilities that submit closure plans or withdrawals.

"Inspections and record reviews must be thorough and properly documented. By reviewing state files, we will check to see that quality assurance program procedures are followed and that the inspection checklist for each has been completed. Inspectors should undertake in-depth evaluations of groundwater monitoring, financial responsibility and closure/post-closure plans for major facilities. Files are to be maintained and made readily accessible. All major violations should be identified and thoroughly documented.

"Finally, enforcement actions, in order to foster compliance, must be timely and effective. Initial enforcement action, which may include the assessment of penalties, should take place soon after the detection of violations. Class I violations should be resolved, or a compliance schedule negotiated and agreed upon, within a set period of time. If the Class I violation is not resolved or a compliance schedule agreed upon expeditiously, or if the agreed-upon schedule is not met, enforcement action should be escalated, including the assessment of penalties.

"Another measure of enforcement program effectiveness will be the ratio of criminal and civil actions filed in court to the number of cases referred to legal authorities. We will also look at the average length of time it takes to resolve groundwater monitoring, closure/post-closure and financial responsibility violations.

"EPA regional offices will use these criteria and performance measures to monitor state programs for quality and effectiveness. Where the region feels state performance has been satisfactory or better, it will be encouraged to reduce its degree of oversight in that jurisdiction. For example, if the state's inspections consistently follow the established procedures, the region may reduce the number of oversight inspections it conducts. This will give the state a greater sense of autonomy and allow the region to focus its attention on problem areas.

"On the other hand, where a state fails to meet performance criteria, the regional office will take corrective action ranging from a modest increase in federal oversight or providing formal written comments on proposed state actions to a di-

rect EPA enforcement response, depending upon the frequency and extent of failure. The appropriate response action will be determined upon examination of the particular circumstances of the situation.

"Where a state is not authorized for certain or all activities, and EPA is thus responsible for the hazardous waste management program, the Agency's regional office will be expected to meet the criteria I have listed.

"Regional evaluations conducted by headquarters will emphasize these criteria, and headquarters may increase or decrease its oversight based upon regional performance. In the enforcement area, if the region consistently fails to meet performance criteria, headquarters may take a direct role in enforcement either by initiating its own actions or by requiring concurrence on some or all regional actions.

"Our purpose here is to respect the integrity of state and regional enforcement programs while, at the same time, assuring the quality of those programs as a guarantee that the goals of public health and environmental protection will be achieved.

"Let me say in closing that, while our programs are new and our experiences in the enforcement arena are limited, we have already learned a number of things. We know that inspections alone do not ensure compliance. We know that follow-up is critical. Where violations are detected, it is necessary to come back expeditiously with some type of enforcement action. It may be the issuance of a warning letter or a compliance order and penalty. Or, if warranted, it may require that we take aggressive action in court.

"The regulated community must see that we have a credible enforcement program and that violations of hazardous waste management laws and regulations will not be tolerated. Our compliance goals require that we be flexible in how we implement our laws and regulations. Our purpose, after all, is to help those who are regulated to meet our protective standards. But there must also be a cost imposed on violators, and that cost must exceed the benefits of ignoring government requirements.

"Program quality is an important key to success in achieving compliance and building a credible enforcement capability. We will pursue it." □

EPA Acts to Reduce EDB in American Diet

"If we act carefully, calmly and responsibly, we can work our way through this bleeding out of EDB from the public diet," EPA Administrator William D. Ruckelshaus said recently.

At a press conference Feb. 3, he announced the immediate emergency suspension of the pesticide, ethylene dibromide, for use as a grain fumigant and recommended residue levels for grain and grain-related products to protect the Nation's food supply from EDB contamination.

"We are not faced with a public emergency," Ruckelshaus cautioned. The danger, he said, is not from eating one cupcake or a grapefruit. "It's a lifetime of exposure that we're concerned about."

The actions Ruckelshaus announced at the Feb. 3 press conference call for:

- effective immediately, the emergency suspension—the strongest action the Agency can take under the law — of the use of EDB as a fumigant for stored grain and grain milling machinery, halting at once all further sales and uses of the chemical;
- the establishment of recommended maximum acceptable residue levels for raw grains, milled grain products and finished ready-to-eat products;
- initiation of a rulemaking process to revoke the exemption that currently prevents the Agency from setting tolerance levels enforceable by the Food and Drug Administration.

Ruckelshaus said, "The most important thing we're doing is getting EDB out of the food chain." With the actions EPA is taking, EDB will disappear from grain products in the American diet in three to five years, Ruckelshaus said.

The Administrator noted that the action, "coupled with our emergency suspension of EDB's use as a soil fumigant this past September, will eliminate about 97 percent of the chemical's agricultural use."

"I expect the residue levels on all grain products will begin to decline almost immediately as a result of the actions we are announcing," Ruckelshaus said. "In

fact, in the very near future, that rate of decline should become quite pronounced." He added that he believes the guidelines EPA is recommending to the states for levels of EDB "are fully protective of public health."

Ruckelshaus said he was recommending the following maximum permissible residue levels for EDB on grain and grain-related products:

- for raw grain intended for human consumption — wheat, corn, oats, etc. — the level should not exceed 900 parts per billion;
- for intermediate level products such as flour, various mixes for preparing baked goods, soft cereals, and other products that require cooking before eating, the recommended residue level is 150 parts per billion;
- for ready-to-eat products such as cold cereals, snack foods, bread, and all baked goods, the residue levels should not exceed 30 parts per billion.

"Many of the data upon which these guidelines were built were provided to us by a number of states," Ruckelshaus said. "I hope now that our three recommended levels will help those and other states effect a consistent, coherent approach to what is clearly a national problem." Additional data were provided by the U.S. Department of Agriculture, the Food and Drug Administration, the Grocery Manufacturers Association and other industry groups. On Sept. 30, 1983,

EPA announced the suspension of the use of EDB as a soil fumigant to control nematodes (root worms), which accounted for an estimated 90 percent of its pesticide uses in agriculture. At the same time, the Agency ordered cancellation of its uses as a fumigant for stored grain and on grain milling machinery. Nine parties appealed the cancellation of grain uses and asked for a hearing before an Administrative Law Judge. By statute, the products subject to that hearing can continue to be used until the hearing is concluded and a final order is issued — typically a two-year process.

In its Sept. 30 order, the Agency also called for cancellation by Sept. 1 of this year of EDB's uses as a quarantine fumigant on citrus fruits, tropical fruits such as mangoes and papayas and other fruits and vegetables which can be host to tropical fruit flies.

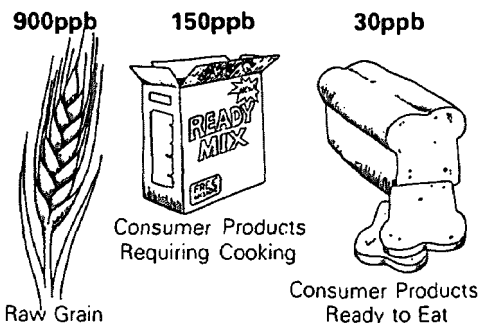
Ruckelshaus said most of the remaining three percent of EDB is used as a quarantine fumigant on fresh citrus and other tropical fruits. However, he added that the majority of fresh citrus grown in this country is not treated with EDB. Generally less than two percent of the total fresh citrus consumed in the U.S. is treated with EDB, most of it imported.

The six states which have fumigation requirements to control fruit fly infestation are Florida, California, New Mexico, Texas, Arizona and Hawaii.

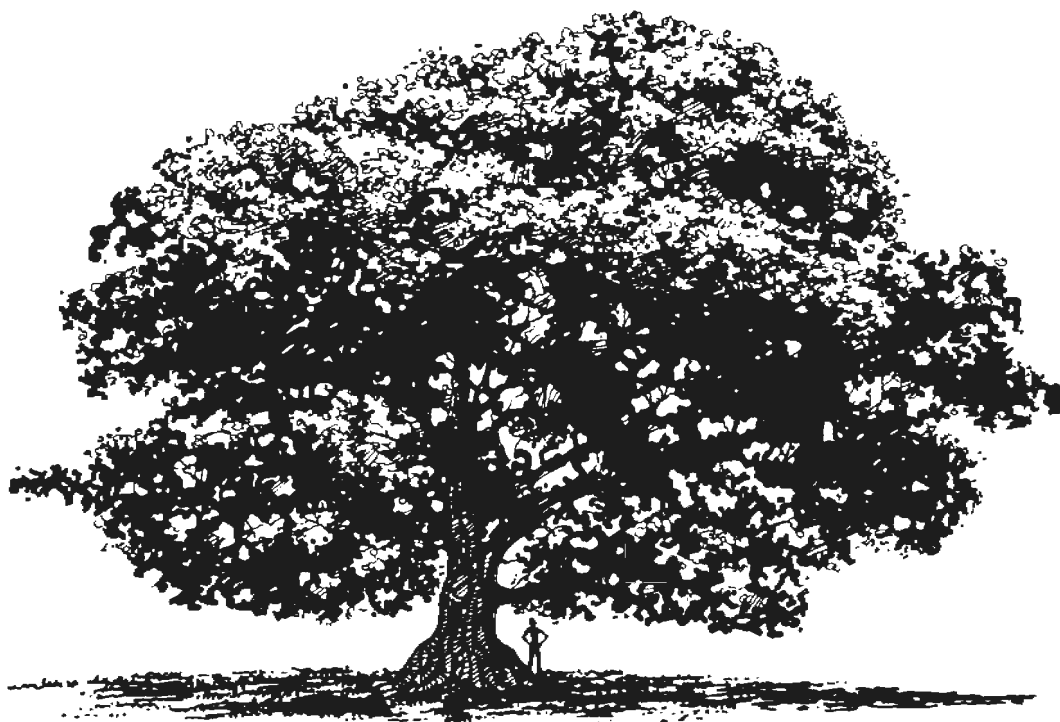
EDB, a persistent halogenated hydrocarbon, has been registered as a pesticide since 1948. At the time of last year's suspension order, over 280 million pounds (140,000 tons) of EDB were being produced annually in this country. Of this, some 20 million pounds were used as a pesticide, and the remainder as an additive in leaded gasoline. Exposure to EDB from its use in gasoline, however, is minimal compared to that from its use as a grain fumigant, because virtually all of the EDB in gasoline is destroyed in the combustion process.

Studies in laboratory animals have indicated EDB to be a carcinogen and mutagen that can cause reproductive disorders. □

National Standards for Permissible Levels of EDB



Monarch of the Eastern Shore



In a rural hamlet on Maryland's eastern shore a champion oak tree will soon be offering its young green leaves once again to the sun, signalling another triumph for the continuity of its life force.

The new leaves attest to the defeat of another winter's destructive ice and cold by this approximately 400-year-old oak at Wye, Md., some 25 miles east of Annapolis, Md.

A symbol of permanence in an age of trendy fads this ancient oak was, after careful measurements, declared by the American Forestry Association in 1909 to be the largest white oak in the United States.

The circumference of this massive tree is more than 37 feet when measured at a height of four and a half feet above its base. Its vast leafy crown shades approximately half an acre.

The relatively low height of the tree of 95 feet is characteristic of white oaks which tend to spread out their growth when not cramped by the presence of other nearby competing trees.

The tree's growth pattern has led to speculation that it may have developed from an acorn which took root in a clearing in the woods made by Indians in pre-colonial days. Hunting by the Indians could also have kept in check the rabbits and deer which frequently kill or stunt young saplings by eating their bark in winter.

Donald E. Peattie, a noted authority on trees, has written that "the great oak of Wye is a monarch of superbly sym-

metrical beauty with a spread of 184 feet, a dimension unequaled by any other oak...." He added that this oak's appearance of great antiquity is enhanced by great growths or "knees" three or four feet high that mark its base.

These large burls may have been caused by injuries to the roots from the hooves of horses once tethered to a country store located near the giant tree. The present good condition of the tree is a result of the special care it has received since it was found to be the largest white oak. Tree experts now promptly trim any dead branches. Approximately 50 cables have been stretched in the tree's enormous crown to help prevent the stiff limbs from cracking during storms.

Foresters feed approximately 900 pounds of fertilizer to the roots every two years. A lightning rod was placed high in the crown many years ago to help protect it from a bolt from the sky.

The inside of the Wye Oak's lower trunk was eaten away by a fungal attack many years ago and is now hollow. A molded steel sheet seals off the trunk opening at the base. A manhole in the sheet permits a forester to enter periodically to apply insecticides and fungicides. Charcoal has been placed in the opening to help absorb excess moisture.

In another step to preserve this ancient oak, Maryland has purchased 21 acres surrounding the tree for use as a state park. The park is just south of Wye Mills, Md., on State Route 622. Pictures, de-

scriptions and measurements of the Wye Oak are recorded in the "Hall of Fame" of the American Forestry Association and in such publications as "The Big Tree Champions of Maryland."

The Wye Oak was a fair-sized tree when Maryland was founded as a colony in 1634. Its growth has been unaffected by either the storms of nature or the depressions and wars that burdened the human race over the last four centuries.

Long a symbol of strength and indomitable resistance to outside forces, the oak has an enormous tap root and spreading root branches which help it withstand buffeting by winter winds.

The Wye Oak's glory is the great spread of crown foliage which provides leafy shade for the people who seek shelter from a burning sun on a sweltering summer day. In the evenings as emerging stars spangle the night sky, visitors to the tree are lulled by a great chorus of music from the cicadas, katydids and other insects.

A white oak is a tree you can tip your hat to. The Wye Oak, in particular, provides a rare opportunity for the legitimate use of such adjectives as "grand," "majestic," and "splendid."

Yet like all living things, it awaits the inevitable hour when it will at long last thunder back to the earth from which it grew. Meanwhile, the young year is producing this oak's first yellow catkins which will spread their golden pollen by spring breezes to help start a new generation of oaks. — C. D. P.

Cleanup Rules and Industrial Growth: Two Viewpoints

Are pollution control rules stalling construction of new plants and slowing down economic growth? This question has emerged as the country has begun to clamp down on pollution. Two leaders with somewhat different views about this question are William K. Reilly, President of The Conservation Foundation, and John Quarles, a Washington, D. C., attorney and former Deputy Administrator of EPA. The Foundation prepared a report on the subject. Quarles is a leading spokesman for the National Environmental Development Assn., a group of industries which has concerns about some portions of the Clean Air Act.

EPA Journal asked Reilly and Quarles to express their positions about this issue in a pro and con format.



In this series, the two sides of a controversial issue are presented in a pro and con format. The series is edited by EPA.

Growth Without Environmental Sacrifice

By William Reilly

The environmental decade of the 1970s witnessed impressive strides in cleaning up the Nation's air and water, but it closed with an increasing number of people asking hard questions about the economic impact of environmental laws and regulations. Critics, with visions of car queues at gas stations in their heads, claimed these laws were hobbling the Nation's search for secure energy supplies. Others expressed some very un-American gnawings:

The United States no longer seemed to be the number one industrial power. Many mainstays of the economy—steel, autos, mining, and smelting—appeared unable to compete with firms from Japan and emerging industrial countries in the Third World. Industrial leaders pointed an accusing finger at the panoply of environmental regulations with which domestic firms had to comply. Celebrated battles over the siting of big energy and industrial facilities—the trans-Alaskan pipelines, oil refineries on the East Coast, and a Dow Chemical complex in California—seemed to confirm the worst fears:

The same regulations that led to environmental progress were stifling needed investment in industry and eroding the U.S. competitive position internationally. The regulatory system, it was alleged, did not work because it was put together and implemented by people who do not understand its effect on industry, particularly on planning and building big manufacturing and energy projects.

A careful review of these complaints indicates that some of them are quite correct, although the extent of adverse impact, and the role of environmental regulations relative to other factors inhibiting U.S. economic competitiveness, have been exaggerated.

These exaggerations or myths, we believe, are obscuring the real path to effective reform.

Myth No. 1: Environmental quality regulations cause industry to flee to other countries. Our research failed to turn up any credible evidence that environmental

regulations have precipitated, or are about to precipitate, a widespread exodus of American industry. In decisions about whether to build abroad or continue operating a facility in the United States differentials in environmental-control costs are generally outweighed by production and other capital costs. For the most capital-intensive and polluting manufacturing industries, pollution control costs are only a small fraction of total capital investment and production costs. In 1981 environmental control costs for selected sectors came to 6.2 percent of capital costs for the chemical industry, 6.4 percent for paper, 8.5 percent for petroleum and 13.5 percent for the primary metals industry. Thus, even if environmental control costs could be eliminated completely (which Mr. Quarles and others in industry recognize is not possible), savings would not greatly reduce total capital costs. Moreover, other traditional locational factors such as access to markets, proximity of supplies and natural resources and political stability are almost always far more important than environmental regulations. At most, such regulations affect a decision only when all other factors are equal—which is rarely the case.

Myth No. 2: Environmental lures lead to interstate industrial flight. The issue of regional competition based on weak environmental laws and lax enforcement helped persuade Congress to adopt uniform national pollution control standards. Lately the issue has flared again, the concern being that lax enforcement of these supposedly uniform regulations by some states and enactment of additional state and local laws might give some jurisdictions a competitive advantage over others. Again, the research by The Conservation Foundation's Industrial Siting Project says no: a margin of relative laxity or stringency in pollution control is not an important locational determinant. (Obviously, severe differentials in enforcement and standards among states and regions might well lead to a different result; but uniform national standards preclude such gross regional disparities.)

No evidence of a migration of industry from one state to another in search of "pollution havens" was unearthed, and, during the 1970s, there was no significant correlation between an individual state's environmental "stringency" and the number of manufacturing jobs it attracted or lost.

Myth No. 3: Environmental red tape is strangling industrial development. From a sampling of recent headlines, articles and speeches, it might seem that industrial projects no longer get built in the United States, thanks to environmental laws and other assorted regulatory ills. The research for The Conservation Foundation's Industrial Siting Project, however, contradicts this conventional wisdom: environmental and land-use regulations are not the primary cause of long delay in most industrial development. In fact, a significant number of industrial facilities have been built relatively quickly over the past decade with few or no serious environmental problems. For the record, it is well to recall that the number of manufacturing establishments in the United States rose from 311,000 in 1967 to 360,000 in 1977 (the latest year for which figures are available). Success stories are often overlooked in the clamor over celebrated siting battles. Even in the headline-making disputes, delays caused by environmental quality regulations are often less significant than those attributable to financing problems, labor disputes, construction and equipment delivery snafus, lack of consensus regarding need, and regulatory hurdles not associated with environmental protection. When regulations do cause delay, that delay may be essential to protect legitimate public interests. Moreover, a good deal of the regulatory delay of the 1970s can be attributed to "teething pains" that are likely to ease as the players in the siting game learn the new rules.

It is worth considering the implications of these findings and the acknowledgment of their validity we have had from many in industry, including Mr. Quarles. Because most people, including environ-

Regulatory Delays

By John Quarles

mentalists, do not fully understand how firms develop industrial projects and the role of environmental regulations therein, they are often at a loss to counter demands that environmental standards be lowered to facilitate needed industrial development, even in the absence of evidence that such standards have caused delays and impeded the siting of new industry or expansion of existing facilities.

We believe our findings should help quiet that debate and refocus national concern on the real problems in the regulatory process. There are compelling reasons to avoid complacency. We agree with Mr. Quarles that the United States cannot ignore the significant costs of environmental protection, just as it cannot ignore the important benefits. And, as Mr. Quarles points out, businesses may decide against significant new investments because of the mere prospect of environmentally induced delays—what might be called “stillborn” projects. There is no real way to measure this phenomenon, although the theme recurs frequently in discussions with industry representatives.

What we have learned about the real problems in the regulatory system is surprising and at the same time reassuring. When we began the project, our eyes were cast, quite frankly, toward problems generally associated with government regulation—overlapping and contradictory permit reviews, changing laws and regulations, and never-ending judicial review. We have found that there are a number of ways government can improve (and we discuss these methods at length in the book *Environmental Regulation of Industrial Plant Siting*). An important element in effective government reform will be to eliminate the dearth of properly trained government personnel overseeing the siting regulatory process. Experienced regulators should have incentives to stay in their positions. Their jobs must be given greater prestige, and they must be better paid. But we have concluded that government cannot do it alone. Companies, too, have an essential role to play. They have an obligation to

understand better the demands on regulators and to improve the way they plan and execute big industrial projects. Without improvements by the private sector, true relief will never come.

Perhaps most important, the United States must avoid the lure of panaceas that promise to cure all of our regulatory ills quickly with little pain. Experience shows clearly that the path to success lies in “quiet” reforms that do not ignore citizens, override or weaken laws or preempt government agencies.

We are encouraged by the fact that companies and government agencies are adapting, learning from their experiences, and overcoming the teething pains of the 1970s, when traditional industrial expectations clashed with untried environmental policies. Already some of the most innovative government agencies and the most progressive corporations have begun exciting initiatives that hold promise to improve not only the way environmental laws work but also their effectiveness in protecting the environment.

We believe the issue here is not whether industrial growth will occur, but how. Industrial development in the United States benefits not only the American—and, indeed, the world—economy, but also the environment. Replacing old industrial plants with new capacity offers the promise of reducing pollution. Failure to do so may increase the technological obsolescence of U.S. industry, exacerbating an already serious economic situation and forsaking progress in cleaning up the environment. Our work indicates that environmental quality regulations need not stand in the way of this growth, nor need they be sacrificed on the altar of recovery. □

(This article draws on information from a 1983 report by The Conservation Foundation titled “Environmental Regulation of Industrial Plant Siting: How to Make It Work Better.” The report was prepared by Christopher J. Duerksen, a senior associate at the Foundation.)

The interrelationship between environmental regulations and economic growth has been distorted by exaggeration on both sides. There is a need to put the whole subject in perspective. We need to begin with a few basic realities.

The first point is that industrial modernization is beneficial—not detrimental—to environmental quality. This is almost universally overlooked. Yet the truth is that new plants are clean plants. New plants incorporate the latest and most advanced pollution control technology. The law requires this, and it is commonplace.

This point was highlighted by the report, “America’s Industrial Future: An Environmental Perspective,” released in 1982 by The Conservation Foundation. The Foundation’s press release on that report opened with the statement, “The modernization of U.S. industrial capacity is important for the environment, not just the economy.” The report itself concluded that “Replacement of old industrial capacity with new, whether through reconstruction of old plants or building new ones, promises to significantly reduce the amount of pollution per unit of output.”

A second point of fundamental importance, insofar as the Clean Air Act is concerned, is that its regulatory framework reflects an irrational preoccupation with restrictions on new industrial facilities. One of its basic provisions, Section 111, establishes the sound principle that all new plants should be built in accordance with tight emission control standards. It is in Parts C and D of Title I of the Act, however, that one encounters the full sweep of provisions designed to make certain that no new plant or plant expansion has an adverse effect on air quality. Here are found the requirements of PSD (prevention of significant deterioration) and nonattainment. The complexities of these requirements are notorious. In areas meeting the air quality standards, they include requirements to demonstrate compliance with “increment” limitations, in addition in some cases to obligations to analyze possible effects on visibility,

on soils and on vegetation. Nonattainment areas entail requirements to come up with offsets, and in some instances the need to demonstrate that the benefits of a proposed expansion will "significantly outweigh" its environmental and social costs.

Without undertaking here to critique these manifold requirements, it seems beyond dispute that in the Clean Air Act we have created an elaborate set of regulatory screens which a project must pass through before it can be built. The most conspicuous elements of these regulatory constraints are added on top of the sound technological requirement that every project must incorporate the best available control technology.

These features of the Clean Air Act place a disproportionate emphasis on new sources, with relatively less detailed emphasis on cleaning up existing sources, even though those plants are far more serious contributors to actual air pollution problems. We need to ask: Why all this worry over new construction? When one examines actual facts it is striking that the emissions from new sources, even over a period of many years, typically represent only a tiny fraction of emissions in any given area. As obsolete facilities are replaced, the net effect of new plant construction is highly beneficial to the achievement of cleaner air. One would think the Clean Air Act should encourage the reindustrialization of America, rather than to retard it.

It is important to note that the Clean Water Act does not place such burdensome restrictions on new industrial growth. Yet it may well represent a more effective regulatory framework. The contrast underscores the questionable value of these features of the Clean Air Act.

Turning to the effects of such regulation on economic growth, the first statement to make is that such regulation is not a dominant factor. It is absolutely clear that environmental regulation in general, and the Clean Air Act in particular, do not prevent industrial development from occurring.

Having said that, it is important to look more closely at the way the regulatory

process impacts on the dynamics of industrial development. The most significant of these effects is on the lead time of corporate decision making. The permitting process does interpose delays in the schedule for designing and constructing new facilities. Those delays may be as short as a few months or as long as several years.

In some instances the regulatory processing can occur simultaneously with other steps in the developmental schedule, but often it cannot. Much of the regulatory processing cannot begin until the engineering design work has been finished. That is the point at which a project is essentially ready to go into construction, but the regulations prohibit the commencement of construction until air quality and other permits have been obtained. Therefore, most of the processing time is a direct addition to total lead time for industrial projects.

In evaluating whether these regulatory delays and uncertainties are inhibiting capital investments, one must understand the basic nature of industrial decision making. In corporate America, every investment decision requires a demonstration that the project promises an adequate return on investment. These decisions are tied to prospective profitability.

The direct costs of environmental controls have an obvious impact on these calculations. More subtle, but I suspect more important, are the effects of regulatory delay. The key point here is the extension of lead time before a proposed project can reach completion and bring products to market. If two years are added to the lead time, that can cause severe effects on both the arithmetic of projected return on investment and also the confidence backing up such arithmetic. For any project the near term provides the most solid part of projected return. Beyond five years, projections are highly uncertain. Any factor that delays project completion and chews up a couple of years at the front end severely erodes the foundation of projections on which corporate investment decisions

can be made. Environmental regulatory requirements have exactly that effect.

Much is made of the fact that few projects have been blocked during the regulatory review of their permit applications and that in those cases where applications have been withdrawn the decision was largely made for economic reasons. That misses the point: All investment decisions are made for economic reasons. What counts is the manner in which the economic attractiveness of a project may be negatively affected by either the additional costs or the additional delays of regulation. If a project becomes economically unattractive during the regulatory delays, the country loses that project—and those jobs—however it may be rationalized.

Far more likely than the public defeat of a project, however, is the private decision never to propose it. Corporate executives will not deliberately repeat others' mistakes. Both the costs and the delays of environmental regulation are now well known. The effects of regulation have been incorporated into the internal corporate screening mechanisms. Projects which cannot sustain the add-ons of pollution control costs, regulatory delays, and permitting uncertainties never see the light of day.

This critical review is not intended to suggest that specific environmental requirements should be removed. It is definitely sound national policy, in my view, that all new industrial projects should incorporate excellent, albeit costly, pollution controls. This also entails a need for a preconstruction permitting process with thorough, and public, review of proposed plans. Yet there is no free lunch. This process entails a cost, and the cost is a drag on economic vitality.

Moreover, some of the regulatory controls are excessive. The overall effect of the regulatory framework, especially several features of the Clean Air Act, unnecessarily discourages private investment. In so doing it slows down the reindustrialization of this country. It costs us jobs. It also retards environmental progress. □

Facing the Issue of Acid Rain

Helicopter dumps lime out of bucket to help restore acid balance in lake in Adirondack Mountains in northern New York. Project is pilot effort by New York Department of Conservation to restore lakes polluted by acid rain.

Recently EPA Administrator William D. Ruckelshaus testified before the Senate Committee on Environment and Public Works on acid rain. Excerpts of his comments follow:

"As the President said in his State of the Union speech, there is great concern in this country and in Canada about the problem of acid rain. I share that concern as does the President. I am determined to forge an understanding of the causes, effects and solutions to acid rain as quickly as possible. Several members of this Committee already believe we know enough about the problem to fashion a solution. This belief is shared by many in the country. Others in and out of the Congress believe otherwise. On the basis of the current state of scientific knowledge, the Administration is not prepared to recommend additional sulfur oxide controls.

"That does not mean the door is closed. It simply means that before launching the country on an expensive and potentially divisive control program, we feel we need more scientific information.

"Such questions as the scope and pace of the damage are at the top of the list of our research agenda. In addition, a better understanding of the mechanism whereby deposition affects sensitive areas and of the acidification process itself would be helpful in finalizing any control strategy. We do not believe that pursuing these scientific puzzles as diligently as possible will cause an unacceptable delay. The Administration is in favor of finding a solution to the complex problem of acid rain. When the fundamental scientific uncertainties have been reduced, this Administration will craft and support an appropriate set of measures to solve the acid rain problem.

"Based on my study of this problem over the last few months, I would summarize what we know about acid rain at this time by the following major points:

- The northeastern United States and southeastern Canada receive rainfall that is, on average, more acidic than rainfall

elsewhere in the country. Rainfall in much of the Northeast has a pH of 4.2 compared with rainfall with a pH of approximately 5.0 to 5.6 elsewhere.

- This same region is located downwind from the area in the U.S. and Canada which has the greatest density of sulfur oxide emissions.
- There are acidified, clear lakes (otherwise unaffected by man's activities) in areas which receive heavy acid deposition. In contrast, there are few, if any, affected lakes where acid deposition is less.
- Most scientists active in the field believe that acidic deposition has been a major contributor to acidification of these lakes.
- Not all areas in the eastern United States are sensitive to acid deposition. The areas at risk are those which both receive high levels of acidic deposition and have limited alkalinity or buffering capacity.
- We are seeing damage to some tree species in parts of the United States. Several environmental stresses, including acid rain, ozone, trace metals, and drought, may be interacting or acting alone to cause these effects.

"Let me highlight a few of the areas where the unsettled state of knowledge appears to be particularly important to the development of policy.

The Scope of the Problem: We really do not know the extent of damage to our aquatic resources from acid deposition. Based on the data available, we know of approximately two hundred lakes, almost all of which are in the Adirondacks, that are acidified nationwide. This covers a very small percentage of the surface water of the country. I have no doubt that others will be identified as acidic, but we have not yet made a systematic search for them. Certainly our water quality models would suggest that such additional surface waters susceptible to damage by acid deposition do exist. We need to get a more accurate picture of the scope and extent of this damage.

Trends: Our knowledge of the pace at which the environment is changing is very thin.

"There are four components of the environment where trends are particularly important: (1) the sulfate and nitrate concentrations in deposition, (2) the pH (a measure of acidity) of rainfall, (3) the sulfate and nitrate concentration in water bodies, and (4) the rate at which water bodies are becoming acidified.

"In the area of deposition trends, efforts to monitor trends began in earnest in the United States during the late 1970s. Today, the National Trends network includes 120 monitoring sites in 48 states, including most of the early monitoring sites established in the 1970s. Several more years of data are needed before any conclusions can be reached from this network about trends in the sulfate and nitrate concentration in precipitation.

"Longer time trend analysis has been made on the basis of results from the Hubbard Brook Ecosystem Study, which ran from 1963 to 1977. The Hubbard Brook data indicate a decrease in sulfate concentrations and an increase in nitrate concentrations in rainfall, but the data did not indicate any trend in pH in the rainfall during the same period.

"These limited deposition data suggest that sulfate and nitrate concentrations in deposition reflect changes in emissions and that the net result of decreasing SO₂ emissions and increasing NO_x emissions has been a relatively stable average pH of precipitation.

"Turning to the sulfate and nitrate concentration in water bodies, the U.S. Geological Survey recently published its study of water-quality records collected over a 10-to 15-year period from the Hydrologic Bench-Mark Network, a nationwide network of sampling stations in predominately undeveloped stream basins. The data indicate declines in stream sulfate in the Northeast and increases in sulfate in a number of sites in the Southeast and the West. The U.S.G.S. concluded that the geographic trends in sulfate concentrations at Bench Mark Stations approximately coincides with trends



in emissions of SO₂ during the period from 1965 to 1980. In contrast, the trends in pH did not follow any pattern. Among the explanations for the lack of a pH trend are the possible effects of nitrate deposition on pH and the neutralizing capacity of many basins which resist changes in pH.

"Our knowledge of the trends in the number of water bodies becoming acidic is even thinner. Recent data show a number of lakes having low pH and high sulfate concentrations. Most scientists believe that condition to be the result of acid deposition. We have other data which identify a number of acidified lakes in areas of high acid deposition. These data show a number of other lakes with low alkalinity measurements. But we do not have any long-term data to indicate how the present chemistry of these lakes was established, or over what time period.

"Obviously whether we are dealing with a rapidly deteriorating situation or a decades-long phenomenon is important in deciding what to do.

Source/Receptor Relationships: No discussion of acid rain would be complete without a discussion of the relation be-

tween the sources of emissions and the sensitive receiving areas. Our present knowledge is based, as you know, on very simplified transport/transformation models. The recent National Academy of Sciences panel dealt with this issue at length. Everyone, including the Academy, agrees that further research in this area is important. It is fair to say that current models and data analysis cannot accurately predict the impact of a particular group of emission sources on particular receiving areas several hundred miles away. The assumptions upon which these models are based tend to produce results which indicate that local sources are more important than distant sources of the same size. The relative importance of local versus distant sources as well as many other factors have to be addressed in order to adequately predict source/receptor relationships.

The Role of Dry Deposition: Related to the transport/transformation issue is the quantitative and qualitative relationship between 'wet' and 'dry' deposition. To date most of our data relate to 'wet' deposition in rainfall. We do not know the extent of 'dry' deposition that is occurring because reliable field

monitoring techniques are not yet available. ('Dry' deposition is acidic gases and particulates settling on a surface.) From the data available, we estimate that the amounts of dry deposition occurring may be from one half to 7 times the level of wet deposition, depending upon the particular location. In remote areas, estimates are that the dry deposition contribution ranges from equal to half that of the wet deposition. We should learn more about all forms of deposition, particularly dry deposition, if we are to control the precursors to acid rain effectively and efficiently.

The Acidification Process: Over the last year and a half, as the result of new knowledge from our present acid rain research program, an issue has been emerging from the scientific and academic communities; it involves two different hypotheses about how the acidification process actually takes place in watersheds and at what pace. For the purpose of this discussion, I'll call them the 'delayed response' hypothesis and the 'direct response' hypothesis.

"The 'delayed response' hypothesis holds that the acidification of lakes is a long-term process. The accumulation of

acid deposition over many years eventually depletes the available acid neutralizing capacity in the surrounding watershed. As that point is reached, more and more acidity will flow unneutralized into the waterbody leading to rapid acidification.

"The implication of this hypothesis is that unless acidic deposition is decreased, we will see more and more lakes and streams becoming acidic as the neutralizing capacity is depleted in individual watersheds.

"The 'direct response' hypothesis is suggested as especially applicable to the Northeast. It holds that acidification of lakes is more immediate than long-term in nature. Under this hypothesis, the sensitivity of a watershed depends upon the rate at which it can neutralize acidity, not upon some limited neutralizing alkalinity capacity. Equilibrium between the rate of acid input and output is established fairly rapidly as precipitation passes through the receiving soils.

"This hypothesis implies that the acidification which has already occurred in our lakes and streams is all that will occur unless future levels of acidic deposition increase. I am told by our scientists that there is not enough empirical evidence today to substantiate either of these hypotheses. There are obvious policy implications if the latter hypothesis is true.

Effects on Forests: The final area where additional research is especially important is that of effects on forests. Beyond knowing that there has been an apparent decline in the condition of some of our forests, we know little about the scope of the problem or its causes. Acid deposition may be a primary cause, and then again it may not. We need to examine not only the direct impact of the deposition on the foliage but also the indirect impact of deposition through changes in chemistry of the soils.

Future Actions

The budgetary history of the National Acid Precipitation Assessment Program is impressive:

Fiscal Year	\$ million
1980	\$11.5
1981	\$13.0
1982	\$18.2
1983	\$22.6
1984	\$27.6
1984 Supplemental Request	\$ 5.5
1985 Request	\$55.5
TOTAL:	\$153.9

This money is aimed at increasing our knowledge of the causes and effects of acid rain.

"Important to a cost-effective control strategy will be success in developing new technology. The Administration's budget includes \$67 million for this purpose in Fiscal Year 1985.

"The President has also committed \$5 million for an experimental program to help restore the buffering capacity that has been reduced in affected lakes over the years. This program, to be administered by the Fish and Wildlife Service, will be closely tied to our overall research effort and will build upon existing experience. Several countries in Scandinavia have had some experience in employing lake restoration techniques. The states will be involved in the design and implementation of this program. It will involve restoration of a number of lakes. We will seek to protect certain sensitive lakes from further deterioration and help others recover from dangerously low pH levels. While we do not view restoration as a permanent or long-term solution to the acid rain problem, it may prove to be an essential component to addressing acid rain now as well as in the future.

"With the \$55.5 million for the inter-agency research effort, \$5 million for effects mitigation, and \$67 million for control technology research, the President is requesting a total of \$127.5 million in FY 1985 for efforts to address acid rain.

New Research Initiatives:

"Now I would like to focus on how we have been using our research resources to fill some of the key information gaps I have already identified. **Scope:** To improve our knowledge of the effect that acid rain has had on the Nation's aquatic resources, I directed the EPA staff last November to immediately begin the design and implementation of a National Lake Survey to measure the water quality of some 2000-3000 lakes located in areas of the Nation we believe are potentially sensitive to acid deposition. This includes lakes in all of the sensitive regions of the United States. Pilot sampling has already been carried out in New England and New York to test out field procedures. These water quality measurements are scheduled to be completed by the end of 1984 and will be the first phase of a planned three-phase program. The second phase will extend the survey to the chemistry of streams in these areas and will also include a biological survey of a subset of the lakes in the initial survey. The final phase will be the long-term monitoring of a representative number of lakes and streams to record trends in the chemistry and biota of these waters as well as acid deposition.

"This study is designed to answer these important questions: (1) How many surface waters today show evidence of acidification? (2) What influence does acid rain have on surface water chemistry and biota? (3) what percent of these sensitive surface waters now support fish? and (4) what impact do changes in acid deposition levels have on lake acidity over time?

Trends: Our planned research program includes several major elements designed to fill the gaps in trend data which I outlined earlier:

Sulfate and Nitrate Concentrations in Deposition: In fiscal year 1985, the wet deposition monitoring effort will expand the number of wet deposition monitoring sites under the National Trends Network. The original network was to have had approximately 150 sites established by the end of 1985. With the additional research funding, the network will be expanded by 40 to 50 additional sites within the same time period. The expanded number of stations will provide the deposition data required at the long-term lake and ecological monitoring sites.

"Up to this time we have had no measured data on dry deposition. The research program calls for the establishment of a number of pilot dry deposition sites. These sites will be part of an accelerated effort to develop and validate dry deposition monitoring techniques, and they will provide the first data on dry deposition in 1985.

pH of Rainfall: This same expansion of the National Trends Network will give us much better information on the trends in pH of rainfall across the country.

Sulfate and Nitrate Concentration in Receptors, Including Water Bodies: Current plans call for the establishment of 40 to 50 long-term environmental effects monitoring sites. These will include Lake Survey 'phase three' sites and a number of additional sites where we will monitor for terrestrial, soil and surface water effects. They will be coordinated with the additional National Trends Network wet deposition monitoring sites. These data will provide extensive information at the process level on trends in chemistry and effects. These sites will be established in 1985 and will be designed to provide an early warning of any dramatic environmental changes that might occur.

Number of Water Bodies Becoming Acidified: The National Lake Survey to be carried out this year will provide us a baseline of water bodies now acidified. It will also provide us with the information to select long-term monitoring sites, which will be representative of watersheds nationwide for the purpose of discerning trends in lake acidification.

Source/Receptor Relationships: To attempt to help resolve important questions regarding sources and receptors we plan to conduct field studies to try to relate pollutant sources to acidic deposition. Studies now under way should help us understand the processes that govern the formation of acidic pollutants in the atmosphere and their transport and deposition in sensitive areas.

"We are planning a large-scale atmospheric investigation to obtain empirical data on source/receptor relationships. As part of this research, a major experiment has just been completed in which inert tracers were released in the Midwest and Canada and then tracked in air masses moving across the Northeastern U.S. and Southeastern Canada. Initial findings will be available later this year.

The Acidification Process: We are asking the National Academy of Sciences to convene a scientific meeting as soon as possible to review the two hypotheses regarding aquatic acidification (the 'delayed response' and 'direct response' hypotheses) and determine whether they are legitimately in dispute, and, if so, to recommend additional research initiatives to help resolve the areas of disagreement.

Effects on Forests: In order to learn more about possible terrestrial effects, we are planning extensive long-term studies to determine whether acid rain has caused damage or changes in rate of growth and species composition in forests. Detailed planning for the forest survey began in 1983. The forest survey is being designed now, and it should be available for implementation in about a year.

"The FY 85 research program includes a large expansion of the effort on terrestrial effects. In addition to the forest survey which I just described, the program calls for extensive new research to examine problems of nutrient leaching, metal mobilization, soil chemistry, and the physiology and pathology of trees. Obviously this testimony cannot include all the research in which we are engaged, but I have sought to highlight how we are attempting to fill some gaps in our knowledge important to the development of policy." □

\$295 Million More for EPA

President Reagan has proposed a \$4.2 billion fiscal 1985 budget for EPA, including a 27 percent boost for enforcement and a 7 percent overall increase. The general raise for EPA is one of the largest proposed percentage increases in the domestic federal budget for the coming year.

The EPA budget "recognizes the high priority the environment has with the President, the Congress and the American people," Administrator William D. Ruckelshaus said.

The proposed EPA budget is \$295 million more than the 1984 budget of \$3.9 billion. It calls for spending increases in nearly all of the Agency's programs, including a 124 percent increase in spending for acid rain research. Other increases in the budget include:

- Spending for the Superfund program grows to \$640 million, up \$230 million from the 1984 budget of \$410 million, or an increase of 56 percent. The President is also asking for an additional \$50 million for the Superfund program for fiscal 1984.
- The Agency's operating budget increases by 9 percent to \$1.2 billion, \$95

million more than last year's \$1.1 billion budget.

- EPA's research and development budget grows to \$278 million, \$33 million more than the 1984 budget, or 14 percent.

- EPA's funding for enforcement increases to \$152 million, \$32 million over the 1984 budget.

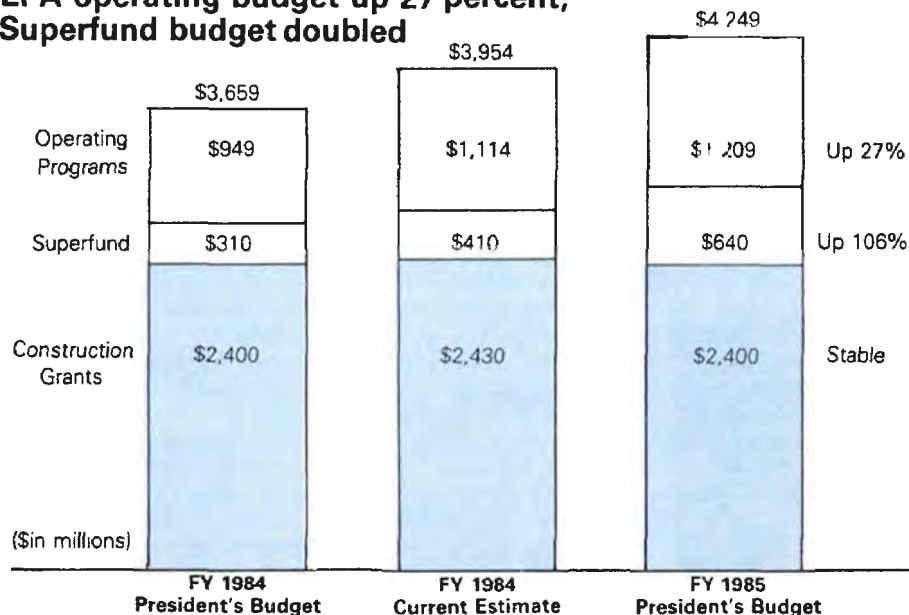
- EPA's support for the Chesapeake Bay cleanup program increases to \$10 million, a \$5.8 million gain over last year's budget.

- Funding for municipal sewage treatment construction grants remains stable from last year's budget at \$2.4 billion.

Ruckelshaus said the expanded budget, together with the \$295 million provided in the amendment to the President's 1984 budget, increases EPA's resources by \$590 million since he returned as Administrator of the agency.

"My long-range priorities reflect specific charges the President gave me when I returned as Administrator last May, and the press of problems—some old, some new, and all difficult—that the Agency

EPA operating budget up 27 percent; Superfund budget doubled



must try to solve in carrying out its mandate," Ruckelshaus said. "Our 1985 budget represents careful analysis by myself and top Agency managers to focus our resource investment to achieve specific environmental improvement."

"EPA's 1985 budget is the result of the second set of budget-related decisions and initiatives I have taken since becoming Administrator. With the help of Congress and the strong support of the Administration, we were able to significantly increase the Agency's budget for the fiscal year that started in October 1983. Our 1985 budget continues a period of expansion for the Environmental Protection Agency, an expansion necessary for the Agency's talented employees to do their job and to restore the public's trust in EPA."

Ruckelshaus said the budget reflects the Reagan Administration's commitment to the cleanup of hazardous wastes, as well as its intention to seek reauthorization of the Superfund program. Most of the 56 percent increase in the Superfund budget over current 1984 levels will be used to support a threefold increase from last year in the number of sites where remedial cleanup will begin. Other proposed Superfund program increases would fund EPA's expanded enforcement efforts, particularly for cost recovery and for Superfund research and development. In addition, the President's budget also requests a 1984 supplemental budget of \$50 million to support the continued expansion of the Superfund program. The increased funds will provide for more site investigations, design and construction.

Based on current EPA estimates, there will be sufficient funds to support the Superfund program through the end of fiscal 1985, when Superfund taxing authority expires. Ruckelshaus will submit a study recommending changes in the Superfund Act to Congress by the end of this fall, as required by law.

"The control of hazardous waste continues as the environmental issue of most concern to Americans," Ruckelshaus said. "It is a technically complex and highly emotional issue. Unless we

address the most critical needs in an efficient and effective manner now, our course will be set by the crisis of the moment. We must manage these challenges in a thoughtful and rational way."

President Reagan's budget also more than doubles EPA's funding of acid rain research to \$34.3 million in 1985, and it calls for a 1984 supplemental increase for acid rain research of \$5.5 million to support the National Lakes Survey. The Lakes Survey will measure acid rain damage to approximately 3,000 lakes around the country. Funding for acid rain research throughout the federal government, including EPA, would also double to \$55.5 million from \$27.6 million in 1984.

"Many questions still remain unanswered about the causes, effects and methods of mitigating or controlling acid rain," Ruckelshaus said. "In 1985, we will expand the basic research program in order to develop the necessary data to fully understand the sources and characteristics of acid rain, to define the extent of damage caused by acid rain and—most importantly—to provide realistic options for mitigating its effects."

Under the proposed budget, EPA's Office of Research and Development would receive additional resources to strengthen research in four areas: acid rain, risk assessment of toxic and hazardous chemicals, the assessment of technology for the control of pollutants and the human health effects of environmental pollutants.

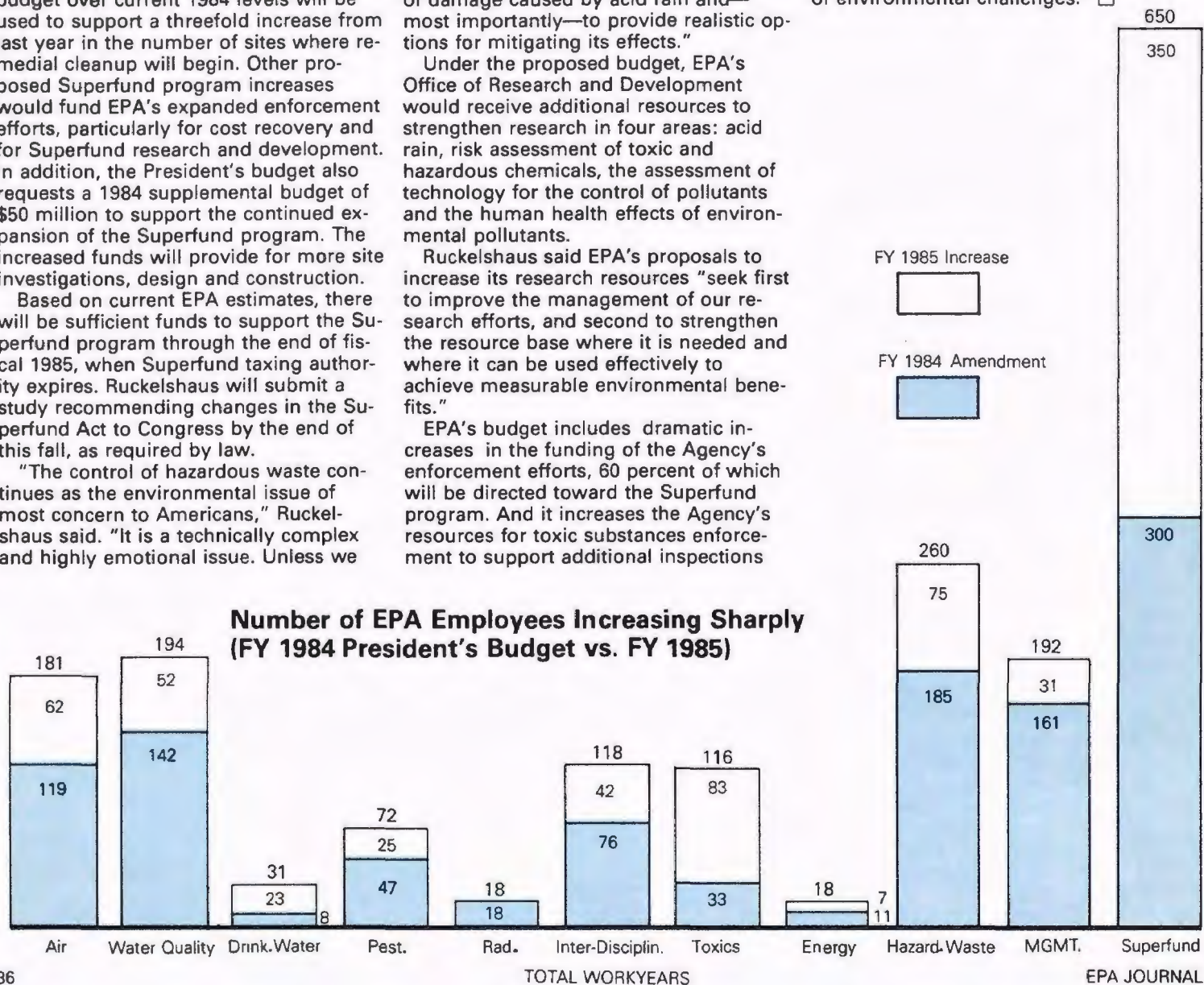
Ruckelshaus said EPA's proposals to increase its research resources "seek first to improve the management of our research efforts, and second to strengthen the resource base where it is needed and where it can be used effectively to achieve measurable environmental benefits."

EPA's budget includes dramatic increases in the funding of the Agency's enforcement efforts, 60 percent of which will be directed toward the Superfund program. And it increases the Agency's resources for toxic substances enforcement to support additional inspections

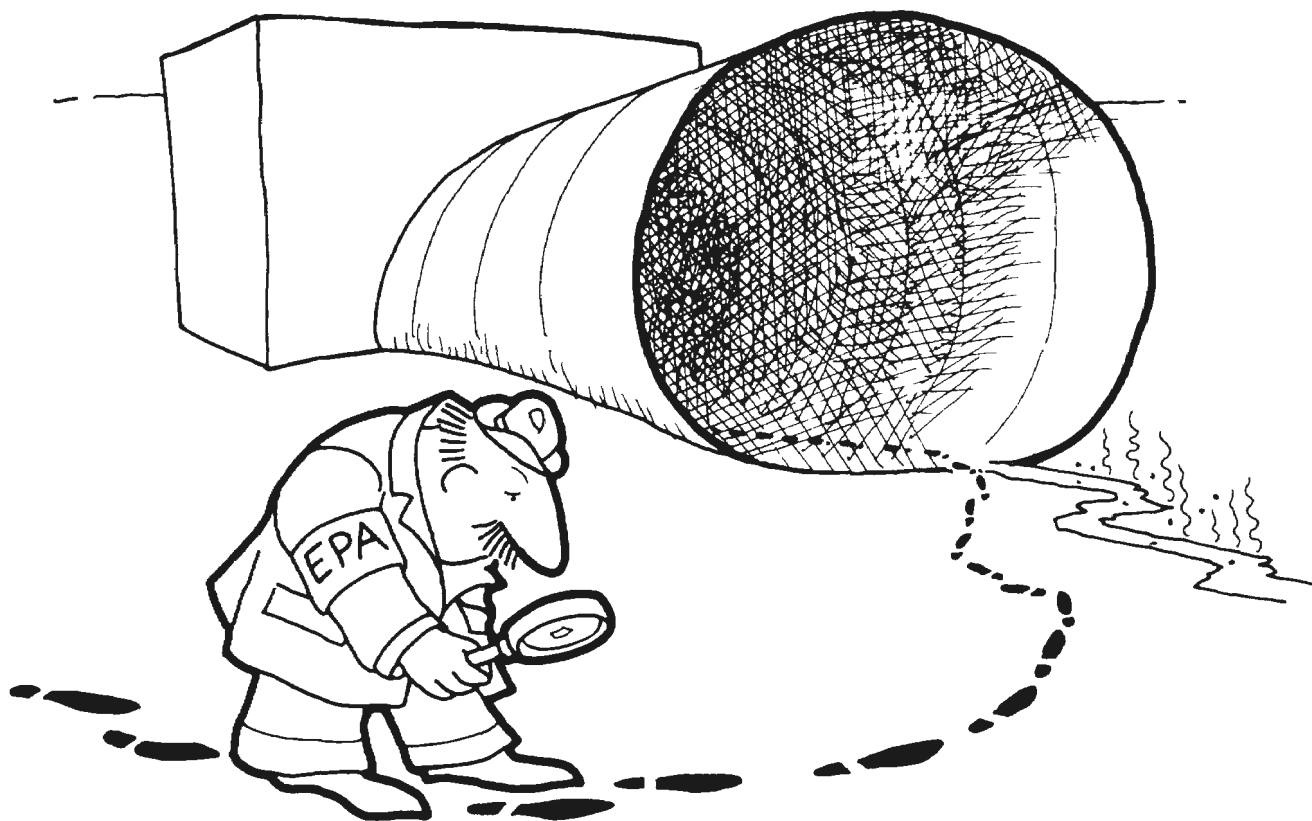
and case development for polychlorinated biphenyl (PCB) and asbestos-in-school rules. So that industrial and municipal dischargers have permits in time to comply with water statute limits, EPA's increased enforcement budget is aimed at eliminating the backlog of major water permits by the end of fiscal year 1985.

The 1985 budget contains an initiative to clean up the Chesapeake Bay. "We are proposing a \$10 million program for the Chesapeake Bay, designed to support the Bay states through cost-sharing grants while continuing EPA's role in monitoring and modeling," Ruckelshaus said.

"Our budget proposals are most significant in that they are very clearly focused on the emerging needs of the Agency," Ruckelshaus said. "With these resources, we will be able to achieve the objectives that the President, the Congress and the people have set for the Agency. These resource needs are a solid foundation for the policies and strategies we as a Nation must pursue to assure continued progress across the spectrum of environmental challenges." □



Skulduggery in the Sewers



Last year, when investigators from EPA's Office of the Inspector General excavated sewer lines in three states, they dug up more than the pipes themselves. They unearthed evidence of fraud, and the fraud smelled as bad as the sewers.

This article describes how the Office of the Inspector General (IG) uncovered a scheme to defraud the United States of millions of dollars.

Six years ago, Congress passed the Inspector General Act of 1978 to prevent and detect fraud and abuse in certain government programs. The law established independent units to audit and investigate the operations of 14 major federal agencies, including EPA. An Inspector General's unit is located within each agency itself but, to preserve independence, the law states that no one in the agency "shall prevent or prohibit the Inspector General from initiating, carrying out, or completing any audit or investigation, or from issuing any subpoena during the course of any audit or investigation." Only the President of the United States can appoint an Inspector General, or remove one from office.

EPA established its Inspector General's Office in 1980. Today, under the leadership of current Inspector General John C. Martin, the office is initiating a major effort to combat fraud in the wastewater construction grants program.

Sewerscam

That effort paid off in a big way in January this year, when three persons were fined and sentenced to prison in one of the largest fraud cases EPA has investigated.

The three were officers of a firm called Municipal and Industrial Pipe Services, Ltd. (MIPS). The case involved a scheme to defraud the United States and state and local governments of some \$8 million for sewer rehabilitation work, much of which was never done at all.

Sewer rehabilitation can save taxpayers money. To clean up the Nation's waterways, EPA, under the Clean Water Act, provides federal funding for construction of sewage treatment facilities and installation of sewer pipe. But the Agency also funds "rehab" of existing sewer systems if this is determined to be more cost-effective than upgrading existing facilities or building new ones.

The MIPS investigation began in October 1981. Two former employees told city officials in Marietta, Ga., that David Wirt, company owner and president, was defrauding the federal government on an EPA-funded sewer rehabilitation project in Marietta. According to court documents, they said they had observed "deliberate pinching of test hoses and the failure of grout to be used in sealing sewer lines." They also testified that, at

AIR

Clean Air Sanctions

A proposal was recently announced by EPA to withhold federal highway construction funds and air quality planning grants from Fresno County, Calif.

EPA is taking this action because it is the Agency's opinion that county officials have not made reasonable efforts to have a motor vehicle inspection and maintenance (I/M) program implemented in Fresno County as required by the Clean Air Act.

Under the Act, six areas of California were required to include I/M programs in their 1979 State Implementation Plans to meet federal ozone and/or carbon monoxide standards. These areas include the Los Angeles air basin, the San Francisco Bay Area air basin, the Sacramento area, and San Diego, Ventura, and Fresno counties.

Fresno County is the only remaining California area not meeting the standards for ozone and/or carbon monoxide which, as yet, has not requested implementation of the I/M program. Because state law requires such a request before the program can be implemented, EPA is proposing to withhold certain federal funds as required by the Clean Air Act.

Service Campaign

Subaru of America will conduct a voluntary campaign to improve the performance of the emission control system on certain 1979 model vehicles, EPA recently announced. The campaign will include approximately 78,000 vehicles.

The service campaign includes all 1979 models, except those registered in Arizona, Hawaii, Idaho, Montana, Nevada, North Dakota, Oregon, South Dakota, Washington and Wyoming. California vehicles also are not included in this action because they do not use leaded gasoline.

The vehicles, which are designed to use leaded or unleaded gasoline, tend to develop deposits in the exhaust gas recirculation (EGR) system. EPA said a build-up of the deposits on some of the vehicles has clogged the EGR system

the time they were hired, Wirt had told them that the sewer rehabilitation business "was just a scam anyway."

EPA's Office of the Inspector General, Southern Division — which is based in Atlanta and covers 13 southern states — began a criminal investigation. When evidence showed that about half of the company's contracts were with U.S. military installations, the Inspector General's office requested assistance from the Defense Criminal Investigative Service of the Department of Defense.

Rehabilitating sewer pipe involves cleaning by high-pressure water jet, followed by television inspection with remote cameras drawn through the pipe from one manhole to the next by cable, air-testing each joint for leaks, and sealing leaking joints with two liquid compounds that, when combined, gel into a grout substance. Televising, testing, and sealing are accomplished from inside a van parked near one of the manholes. City inspectors monitor these procedures while sitting beside the TV operator in the van.

Wirt manipulated his contracts whenever possible to provide for payment according to the number of pipe joints found to be defective by air-test and requiring sealing. His main effort thereafter was to thwart inspection efforts — to keep inspectors off the trucks, to "blitz" job sites with more TV trucks and crews than there were inspectors to monitor them, to spread out his trucks and crews as far as possible over the project, to keep inspectors in travel status between units, to fake equipment breakdowns when inspectors approached a unit, or to devise strategies to make the inspectors extremely uncomfortable in the TV trucks.

When these and other tactics failed, repair crews and Wirt himself at times resorted to intimidation of the inspectors, sometimes threatening violence, physical injury or lawsuits.

To corroborate the testimony of former employees, sewer pipes were dug up at Air Force bases in Mississippi and Texas and at an EPA-funded project in Moultrie, Ga. Analysis of pipe samples at EPA's National Enforcement Investigations Center in Denver showed that, in places where grout was said to have been applied, there was actually little or no grout at all.

Fraud in the family

In the spring of 1982 a federal grand jury in Atlanta began hearing evidence in the case. In November 1982, the grand jury returned a 47-count indictment against Wirt, his wife Judith, company secretary and treasurer, and his son Gordon, company vice-president. The indictment listed 32 locations around the world where the company had defrauded the government, involving \$8 million in contracts. Of the 47 counts, 24 involved EPA-funded projects.

The indictment charged that the Wirts had falsified reports to indicate completion of work that had, in fact, never been done. Other counts included claiming to have sealed defective sewer pipe joints with grout when none was applied; faking equipment breakdowns or other delays until inspectors left job sites, and installing hidden switches in the company's television inspection trucks to re-route grout back into the truck tank while the meter registered it as going to seal sewer pipe joints. There were also several counts of mail fraud with respect to city funds.

On January 13, 1984 — 27 months after the case was first brought to the attention of EPA and 14 months after the indictment was handed down — U.S. District Court Judge Robert L. Vining sentenced the three Wirts to prison terms and fined each one \$10,000.

In this case, investigators from the Inspector General's Southern Division had arranged for actual excavation, with backhoe and shovel, of EPA-funded sewerline projects. According to Inspector General John Martin, this was the first time EPA had conducted such an investigation. "Our investigators took soil samples from the area surrounding pipes for lab analysis to determine whether or not the joints had been grouted as claimed," Martin explains. "This company had been defrauding the government for 10 years in the belief that no one would ever start digging for evidence." Martin said he hopes the convictions will have a chilling effect on any other companies out to defraud the Environmental Protection Agency. □

which reduces the gas flow and increases nitrogen oxides emissions from the tailpipe. The degree of clogging appears to be related to the concentration of lead in leaded gasoline which the vehicles have used during their lifetime. The system operates by recirculating a small fraction of exhaust gases from engine combustion back through the combustion process.

Subaru has volunteered to correct the problem at no cost to the owners by cleaning the EGR system or replacing parts if necessary. Subaru has sent notification to the owners of the approximately 78,000 vehicles it estimates to be involved.

Diesel Standards

EPA is postponing for two years more stringent standards for diesel particulate emissions from passenger cars and light duty trucks.

A final rule signed by EPA Administrator William D. Ruckelshaus moves the compliance schedule for additional reductions of particulates from 1985 to the 1987 model year for the vehicles.

EPA said it has determined that the delay is necessary to provide adequate lead time for manufacturers to complete development and testing of trap-oxidizer systems which will be required for many light-duty diesels in order to meet the standards.

The Agency said little environmental harm should result from the delay, since it is limited just to the 1985 and 1986 model years. Light-duty diesel vehicle sales have dropped to about two percent and should not rise significantly in this interim period. In addition, many light duty diesel vehicles are actually emitting levels well below current requirements.

Videotape on Bicycling

"Bicycling to Work", a videotape which encourages bicycle commuting as a way of reducing urban air pollution, is being released by EPA.

"Bicycling to Work" features bicycle commuters who tell about finding a good bike route, safety, bike parking, keeping a professional appearance, commuting equipment, maintenance and rain and night riding.

EPA also has available an information packet about how to put on a bicycle commuting seminar. "Bicycling to Work" is part of the presentation. The packet describes the logistics and content for a seminar. Commuting seminars can be organized in conjunction with a "Bike Day," for which EPA also has an information booklet: "How to Organize a Bike Day."

The "Bicycling to Work" videotape (3/4 inch) may be borrowed from any of EPA's Regional Offices and from EPA's Headquarters. The "Information Packet" and "How to Organize a Bike Day" are also available at any of these locations. Those who would like a permanent copy of the "Bicycling to Work" tape may either copy from the loan tape or send a blank tape, any format, to N. Dianne Rowe, EPA (ANR-445), Washington, D.C. 20460.

HAZARDOUS WASTES

Waste Site Investigation

EPA recently announced an award of \$698,589 to the State of California to determine possible sources and the extent of contamination by PCBs (polychlorinated biphenyls) and heavy metals at the Purity Oil Sales site in the town of Malaga, located two miles south of Fresno, Calif.

The state will also look for possible air pollution hazards, since nearby residents have complained about strong odors emanating from the six-acre waste site.

Purity Oil Sales is one of 546 sites targeted for priority action under EPA's Superfund program. Oily liquids and sludges have been disposed of at the site for many years, and some liquid wastes remain in storage there. An unknown sludge-like substance is oozing from filled areas and has entered adjacent properties.

Soil samples containing significant concentrations of PCBs, lead, copper, zinc, and various volatile compounds have been collected by EPA at the site, which was a waste oil refinery and reclaiming facility from 1940 until it was closed almost 10 years ago in 1974.

Toll-free Telephones

Plans were announced by EPA to upgrade significantly its toll-free telephone service, which provides information on the Agency's Superfund cleanup and hazardous waste regulatory programs.

Under a new three-year, \$1 million contract awarded to Geo-Resource Consultants of San Francisco, the hotline will become a computerized information management system capable of storing data on inquiries and responses for quick access and reference.

The toll-free number can be used by anyone with a question concerning the federal hazardous waste management activities carried out under the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (Superfund). A separate toll-free number is available to report spills and other releases of hazardous substances.

Under the new Hotline contract, five specialists will be available to handle the approximately 3,500 questions per month over four toll-free lines and two local lines.

The RCRA/Superfund Hotline service is located at EPA headquarters in Washington, D.C. Phone lines are open from 8:30 am to 4:30 pm Eastern Time, at (800) 424-9346. For callers from the Washington, D.C., metropolitan area or outside the United States, the Hotline number is (202) 382-3000.

The numbers to report hazardous substances spills and releases are (800) 424-8802 nationally and (202) 426-2675 in the Washington, D.C. metropolitan area.

PESTICIDES

Action on DBCP

EPA has moved to ban the remaining uses of the soil fumigant DBCP on pineapple fields in the Hawaiian Islands after obtaining significant new information showing groundwater contamination by the pesticide.

Accordingly, the Agency has proposed its intention to cancel registration of pesticide products containing DBCP (dibromochloropropane), a pesticide used to control nema-

todes (root worms) which damage pineapple plants.

EPA is taking this action after new evidence was produced from two years of groundwater monitoring that shows detectable levels of DBCP in groundwater at approximately eight new sites. The monitoring program, undertaken with the State of Hawaii, has identified wells and shafts which tap aquifers in Oahu and Maui as being contaminated. Such aquifers are the principal source of fresh water in Hawaii.

Under EPA's proposal, DBCP products registered for use on the pineapple fields in the Hawaiian Islands would be cancelled. This is the only remaining use of this pesticide. All other uses were cancelled on March 5, 1981.

Use of existing stocks of DBCP would be permitted until Dec. 31, 1986, only on the island of Maui and only on fields where it has been determined that contamination of drinking water will not occur.

The proceedings to ban the soil fumigant are based on information showing that male plant workers exposed to DBCP had experienced low and zero sperm counts. Laboratory animal test data indicated that the substance is a carcinogen. In addition, laboratory studies have demonstrated that DBCP causes genetic damage which is capable of being inherited.

Pesticide Exemption Rules

EPA held public hearings in January on its regulations which grant emergency exemptions for using pesticides.

The Agency is planning to revise its regulations for emergency exemptions and is soliciting public comments prior to publishing any proposed changes.

Requests for emergency exemptions are for using pesticide products not registered by the Agency or, if registered, for application in emergency conditions.

The following are some of the issues that are being considered:

- the criteria for risk and economic loss which must be shown to support a claim of emergency exemption;

- the exemption criteria for use of cancelled and suspended pesticides, for limiting the length of time exemptions may be granted for the same pesticide and for requests of multiple chemicals to combat a single pest;

- requirements for information concerning available registered alternative pesticides when an exemption is sought;

- reporting and enforcing requirements;

- the addition to the regulations of a description of how the agency considers potential risk in the processing of exemption requests.

TOXIC SUBSTANCES

New Toxics Rule

EPA is taking its first action under Section 5(f) of the Toxic Substances Control Act to regulate immediately human health risks.

The Agency's action, signed by EPA Administrator William D. Ruckelshaus on Jan. 19, and published in the Federal Register Jan. 23, was effective immediately.

The 5(f) action involves proposing a rule to protect metalworkers from unreasonable health risks by prohibiting the addition of nitrites to a new chemical substance intended for use as a corrosion-inhibiting additive in fluids used in metal cutting.

Under Section 5 of TSCA any manufacturer of a new substance must notify EPA at least 90 days before manufacture begins. If EPA identifies health or environmental risks, Section 5(f) gives the Agency the authority to regulate those risks immediately.

In this case the Agency has evidence that nitrosamine compounds are carcinogenic and are formed when nitrites or other nitrosating agents are mixed with cutting fluids containing certain amines, such as this chemical. Workers would be exposed to the carcinogenic nitrosamines during machining operations. Nitrosamine derivatives are known animal carcinogens. The route of exposure for workers is through the skin, the lungs and gastrointestinal tract.

The new rule is the first of three related steps under way in EPA to address nitrosamine-related health risks from metalworking shops. As a second step, the Agency will soon issue a Chemical Advi-

sory to warn about the risks of nitrosamine formation associated with the addition of nitrosating agents to all amine-based metalworking fluids.

The final step will be to issue a general rule under Section 6 of TSCA to control the formation of nitrosamines in metalworking fluids.

Chemical Imports Policy

EPA issued a policy announcing how it will assist in enforcing the U.S. Customs Service's chemical substances import rule. EPA's policy statement on the new Customs Service regulation explains the means by which an importer may fully meet all certification requirements and sets forth the actions the importer should take to verify the identity of the imported chemical and how to determine if it is subject to the rules of the Toxic Substances Control Act (TSCA) which EPA administers.

The Customs' rule requires all importers of chemical substances in bulk or mixtures to certify on entry documents or invoices that each shipment complies with all applicable rules and orders under TSCA.

Importers of chemicals not subject to TSCA must certify at the port of entry that the shipment is being imported for non-TSCA use (for example, as a pesticide).

WATER

Aquifer Designations

Six aquifers have been designated by EPA as sole or principal sources of drinking water. The designation will provide additional protection to aquifers serving parts of New Jersey, Massachusetts, Rhode Island, New York, and Arizona.

The purpose of the designations is to provide an extra level of federal protection to sources of drinking water, in addition to other federal, state, and local laws guarding against contamination of drinking water.

As part of the protection of sole source aquifers, EPA is required after designation to review projects funded by the Federal government's assistance programs, such as highways, sewage treatment works and large housing developments, to determine if they would have an adverse effect on the aquifer. The EPA Administrator is authorized by law to veto such a federal project if he finds that it may contaminate the aquifer

through a recharge zone so as to create a significant hazard to public health.

Although the veto has not been employed to date, a number of projects have been modified to incorporate greater ground water protection features as the result of EPA reviews.

Waste Pond Report

A national Surface Impoundment Assessment Report is being published by EPA. The study, based on data collected between 1979 and 1980, assesses the magnitude and severity of groundwater problems posed by nearly 181,000 waste ponds identified in the survey.

The study is the most comprehensive look at this practice on a nationwide basis that has been done to date. The report's descriptions of state programs, while accurate for the time the study was done, have been superseded by changes that have been made in many state programs in recent years.

In view of potential threats to groundwater by surface impoundments and Congressional interest in regulating these facilities, the Agency plans to conduct a follow-up study to assess current state regulatory programs and to define the problem in greater depth.

EPA initiated the report in 1978 and provided grants to the states to conduct the assessment.

It is expected that this report will be useful in development of future policies to protect the Nation's groundwater supplies. Copies of the full report are available from the EPA Press Office.

AGENCYWIDE

Appointments

Paul G. Keough was recently named Deputy Regional Administrator of EPA's Region 1 office in Boston. Keough's previous service with EPA in Region 1 included experience as Acting Deputy Regional Administrator, Acting Regional Administrator, Senior Policy Advisor and Director of the Office of Public Affairs. Before joining EPA he had worked as press secretary to the Governor of Massachusetts, press secretary to the Massachusetts Senate President, news director for the Newton Broadcasting Company in Newton, Mass., and reporter

for the *Patroit Ledger* in Quincy, Mass. He graduated with a B.A. degree from Northeastern University in 1968 and an M.P.A. from this university in 1975.

Douglas P.J. Rentschler Blazey was named Regional Counsel in EPA's Region 2 in New York. His previous jobs include chief counsel for the Pennsylvania Department of Environmental Resources, director of the Bureau of Administrative Enforcement in the Department, chief of the Eastern Division in the Bureau of Litigation in the Department, Special Assistant Attorney General in the Pennsylvania Department of Health, an attorney in a Philadelphia law firm and a teacher in the Trenton, N.J., public schools. He graduated with a B.A. degree from Wesleyan University and a law degree from Yale Law School. □



View of frozen Lake Superior from one of the islands in Apostle Islands National Lakeshore in northern Wisconsin.

Back cover: A male wood duck photographed by Steve Delaney of EPA's Office of Public Affairs.



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