

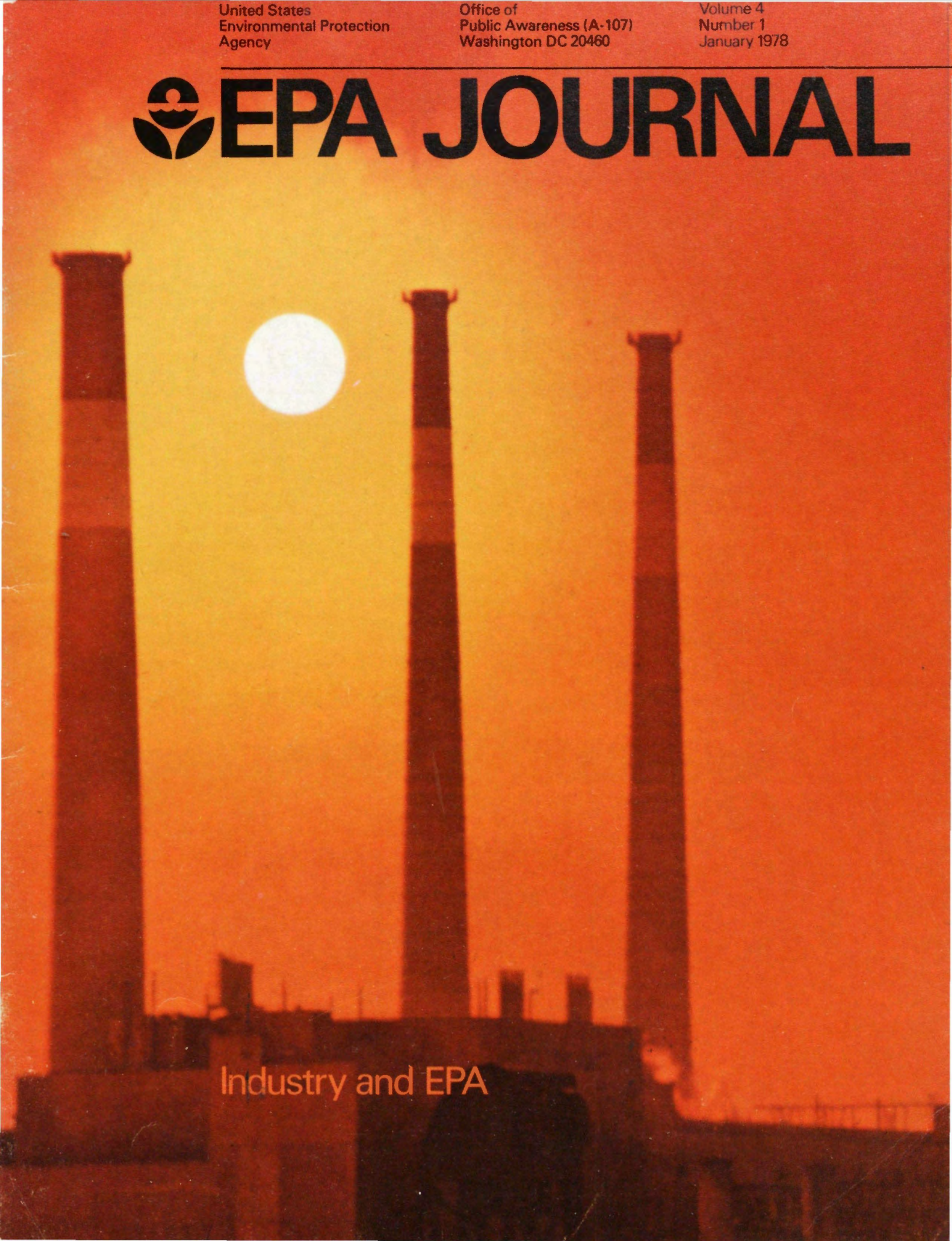
United States
Environmental Protection
Agency

Office of
Public Awareness (A-107)
Washington DC 20460


Volume 4
Number 1
January 1978



EPA JOURNAL

The background of the cover is a photograph showing three tall, dark industrial smokestacks against a bright orange and yellow sunset sky. A large, bright white sun is visible between the first and second smokestacks. The foreground shows the dark silhouette of industrial buildings.

Industry and EPA



Working with Industry

In this issue EPA Journal takes a look at some of the problems involved in the massive effort being made to clean up industrial wastes.

Administrator Douglas M. Costle outlines plans to achieve industrial pollution control more effectively and efficiently.

The Administrator also discusses in an interview in the magazine where he believes EPA is heading in the new year.

One of the articles on the magazine's main theme of industry and the environment is a report on the resolution of the Reserve Mining Co. case after the longest and most expensive environmental trial prosecuted by the Federal Government. The article reviews this epic struggle between environmental and economic values.

The magazine also carries articles on the viewpoints of representatives

of major industrial and environmental organizations about the environmental cleanup effort.

A new approach using "the rule of reason" to reconcile differences between industry and environmentalists is discussed in another article.

The prospects and costs of clean up in two major American industries, steel and paper, are reviewed.

The magazine also reports on several business-industry meetings sponsored by EPA to exchange information on a variety of pollution control technologies. Also discussed is the Environmental Industry Council established in Washington by the growing national industry which produces pollution control equipment.

In addition, programs financed by the Small Business Administration to help companies get low-rate loans for pollution clean up expenditures are reviewed.

EPA JOURNAL

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With this issue, EPA Journal is using for the first time process color and new design and typography based on a graphics system developed by Chermayeff & Geismar Associates of New York.

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EPA'S PURPOSE: 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.

Text printed on recycled paper.

COVER: A New York City power plant.

ILLUSTRATIONS:
Susan Foster

PHOTO CREDITS:
Bob Jones, Ernest Bucci,
Documerica

The EPA Journal is published monthly, with combined issues July-August and November-December, by the U.S. Environmental Protection Agency. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget. Views expressed by

authors do not necessarily reflect EPA policy. Contributions and inquiries should be addressed to the Editor (A-107), Waterside Mall, 401 M St., S.W., Washington, D.C., 20460. No permission necessary to reproduce contents except copyrighted photos and other materials. Subscription: \$10.00a

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Industry and EPA

By Administrator Douglas M. Costle

I was pleased to be asked to make the opening remarks for the business/industry issue of the *EPA Journal* because there are two messages I want to convey not only to the American corporate community but to the general public as well.

The first message is that the Environmental Protection Agency's preeminent mission as a health-protective regulatory body is as strong as it has ever been. I am firmly committed to that mission. In fact, I believe it is more necessary now than ever before. As we begin to control more effectively what are considered the "conventional" pollutants, we are becoming increasingly aware of the problems of toxic pollutants dispersed throughout the environment—although we often have little understanding of their effects and the pathways they follow.

Our learning curve regarding these toxic substances will be very steep, and we are only beginning to climb that slope now. I am convinced that in the next ten years this agency will be driven by the need to control toxic materials in the environment. With that concern in mind, I am determined that there will be no relaxation of health standards nor of our enforcement efforts.

There is no denying that cleanup costs. But we need to rethink the old notion that environmental expenditures are nonproductive; that is, that capital used for pollution control is not used to generate more products or demand. I would challenge that notion and argue that we must start viewing these expenditures in a different and more fundamentally realistic way. We must consider not only corporate economic growth stimulated by jobs and expenditures for pollution control, but also by the increased productivity of a healthier workplace and, therefore, a healthier outside environment.

In addition, although I realize that such calculations are difficult, a more appropriate determination of the costs of pollution control would balance those costs with the social and economic benefits of a healthier environment. For example, when natural systems become so contaminated that higher local and State taxes must be spent to clean them up, people have less to spend as consumers. Furthermore, corporations and consumers must pay higher health insurance premiums, greater production time is lost due to illness, more energy is needed to make water safe for drinking, community income from recreational activities is lost—these are just a few of the considerations overlooked when the plea is made that environmental controls are unproductive corporate costs.

The second message I want to stress is that while relaxation of environmental standards and enforcement is unacceptable, I believe that we have to look openly and pragmatically at ways in which pollution control can be achieved equitably, effectively *and* efficiently.

President Carter's determination to introduce maximum efficiency in the regulatory process is one which I share. Over the last nine months, EPA has established a regulatory reform agenda applicable to all industries it regulates. Instituting a number of major, generically important reforms is one of the great opportunities I have while here. My goal is to make our programs as reasonable and rational as we can. I want the business community to have more confidence in the regulations that are set; that means that our standards should be defensible and that the business community should know with certainty that these regulations *will* be enforced sensibly and fairly.

I also want to encourage creativity and innovation in the regulatory process—as well as simplicity. If standards can be met by using unconventional technologies or techniques, I would welcome their use.

With these objectives in mind, EPA is taking some new initiatives to develop more efficient environmental regulations:

- **Openness and access.** We want to create new opportunities for dialogue with the public, including those whom we regulate. Our goal is to have "open-air" decision-making, taking advantage of the expertise of and listening to the concerns of those affected by our programs. We have been working constructively with industry, particularly on implementation of the Toxic Substances Control Act (TSCA) and on effluent guidelines under the Federal Water Pollution Control Act. We hope to increase those opportunities for participation in the future by: (1) funding public participation under the Toxic Substances Control Act; (2) listing semi-annually an agenda of upcoming regulatory actions—with a designated EPA contact person for each; (3) uniformly extending to 60 days the comment period for proposed regulations; (4) issuing proposed guidelines for public participation under the Resource Conservation and Recovery Act in order for an agency to receive public assistance; (5) holding nationwide public hearings in formulating product labeling re-

quirements of the Noise Control Act; (6) starting a procedure of having Regional Offices elicit public comment on their activities; and (7) instituting an intra-EPA group to determine ways to further increase public access to the rule-making process.

• **Procedural reform.** I want to see that the regulatory process is streamlined and coordinated internally. We want to eliminate duplication, unexpected and unwelcome side-effects, and we want to look at the whole problem—not at piecemeal parts of it. Programs will be integrated to address comprehensively and appropriately the various media by which specific pollutants move and their total impact on man and the environment. Some of the specific areas we will address are: (1) Reducing both internal and external reporting requirements; (2) reducing reporting burdens for new regulations, and providing “sunset” provisions in all new regulations calling for automatic expiration of the regulation after 4-5 years; (3) simplifying and reducing the reporting burden on effluent dischargers under the Federal Water Pollution Control Amendments; (4) using plain English, which is comprehensible to the lay person; (5) considering revision of the adjudicatory hearing process to address more appropriately the decision at issue without endangering due process rights; (6) reducing delays in granting permits; (7) consolidating grants to states and localities, now allocated separately by programs, into one statewide grant to be allocated as the State determines; (8) comprehensive industry studies of the cumulative economic impacts of EPA’s air and water pollution control regulations on major polluting industries; and (9) addressing the impacts of EPA’s regulations on small businesses and trying to mitigate adverse impacts of those regulations.

• **Coordination with other agencies.** In addition, we will be working with other government agencies to eliminate duplication and streamline the regulatory process. EPA has pioneered along with the Occupational Safety and Health Administration, the Consumer Product Safety Commission and the Food and Drug Administration in a major agreement to work together on regulating toxic chemicals. We will be developing common approaches to testing, methodologies, risk assessment, research and development, and enforcement. The principals of the four agencies have been meeting regularly to coordinate policy and exchange information as have several groups of counterparts from these agencies (e.g. general counsels, budget officers, Regional Administrators). A major objective has been to act together *now*, rather than *studying* the need to act together in the future. Some of the joint actions which have already taken place are a hearing on the regulation of chlorofluorocarbons, regulation of DBCP and consultation on EPA’s proposed lead standard.

In addition, we will be coordinating with the Department of Transportation on Clean Air Act-related matters, with the Small Business Administration on ways to reduce

any adverse impacts of our regulations on small enterprises and with the Council of Economic Advisers and the Council on Wage and Price Stability on optimal formulation of our standards.

We will also be working in appropriate areas with the Department of Energy in order to ensure that environmental and energy development considerations—especially increased use of coal—are addressed appropriately; early, and, therefore, more effectively, in the policy process.

• **Economic incentives.** We are exploring a number of alternatives to the direct regulatory approach. There ought to be a range of options available to achieve our environmental goals so that we can provide opportunities to use the marketplace—which is a very effective mechanism—advantageously. The marketplace options we are examining include: (1) An “offset” policy for nonattainment areas, affirmed by the 1977 Clean Air Act amendments. This policy, which allows growth in areas not meeting the health standards if it can be shown that new emissions are more than offset by a reduction in emissions from existing sources in the area, could result in the establishment of local markets for potential emission reduction. (2) Marketable permits for chlorofluorocarbons, which would allow permits or quotas to be allocated—perhaps by auction—to producers or users and then traded. (3) Product charges for solid wastes, which would consist of levying a charge on the material content of products that enter the municipal solid waste stream. We are only in the preliminary stages of assessing this scheme now, but its objective—if adopted—would be to provide an economic, rather than administrative correction for the failure of market prices to adequately reflect the costs of solid waste management. (4) Federal procurement incentives, to encourage the development of environmentally superior products, are being used in the noise control program. (5) Non-compliance penalties, which represent an enforcement approach that assesses penalties against violators in order to recover any economic savings that they might have realized by virtue of failing to meet emissions regulations. The non-compliance penalty is intended to *supplement*, rather than *supplant*, the present regulatory scheme by eliminating the competitive advantage non-complying sources have had over those that have met the requirements of the law.

Overall, I think that this set of regulatory reform initiatives we have begun will go a long way toward achieving one of my primary objectives during my time at EPA: that is, eliminating the uncertainty and confusion that tends to develop in the regulatory process. I want to be able to give the corporate community a green light or red light. I will signal a green light when I can, and a red light when I must, but I will do my best to minimize the flashing yellow lights which are, understandably, anathema to a businessman. In a world of scientific uncertainty, it is difficult to keep those flashing yellow lights to a minimum, but I am determined to try to do so. □



Protecting Lake Superior

After a six-year struggle between Reserve Mining Company and Federal and State agencies, dumping of polluting taconite wastes is being shifted from Lake Superior to a lonely site seven miles inland.

The move, preceded by seemingly endless court battles, is being greeted with sighs of relief throughout the Lake Superior region.

Not only will the change in waste disposal halt an environmental threat that brought a cancer scare to the 100,000 residents of Duluth, Minnesota, but it also promises to spur the economy of northern Minnesota where jobs are scarce.

As EPA Journal reported in 1976, the Reserve case even then was the longest and most expensive environmental trial ever prosecuted by the Federal Government. Before it was over, Reserve had briefly shut down operations at its plant in Silver Bay, and the spectre of 3,000 employees there being thrown out of work had turned the case into a classic environment-versus-jobs conflict.

Now, construction of the new disposal method not only will keep Reserve's operations going but will add some 1,600 temporary new jobs and a smaller number of permanent new employees to the company's payroll.

Carving the new disposal site out of a birch and aspen forest valley is a major construction project involving not only special dam-building technology but a transportation network to serve it. In addition, Reserve is modifying its Silver Bay plant to separate

Truman Temple is Associate Editor of the EPA Journal.

fine particles of waste so that this material can be pumped in a water slurry up to the new site, instead of being dumped into the lake.

Since health officials also have worried about airborne particles from the plant, Reserve is installing electrostatic precipitators and other equipment to prevent dust from escaping into the atmosphere. Various types of grasses also have been successfully grown on existing taconite wastes at the dumping site to make sure they can be planted to hold down fugitive dust. The State also has required Reserve to cover all fine and most coarse tailings with water throughout the life of the tailings basin inland.

When the project is all in place and operating by April 15, 1980, Reserve will have spent more than a third of a billion dollars to solve the environmental problems associated with extracting taconite needed for steel-making. The expense and worry have not been limited to the company, however. A unique new filtration plant, designed specifically to remove asbestos-like fibers from drinking water, has been built with Federal, State, and local money in Duluth to protect the health of residents. One nearby community, Cloquet, doesn't have any filtration plant and still depends on well water several days a week for its drinking water. Citizens use water from Lake Superior for other household purposes. But the level in the wells is dropping, and some believe Cloquet ultimately will have to find several million dollars somewhere for a plant to remove the fibers from lake water.

How did the Lake Superior region ever get into such an expensive mess?

Why is it that other taconite producers managed to avoid the problem? And how could Minnesota, so clean and healthy a State compared with other industrialized areas, let itself be polluted with such a hazardous substance?

The story began almost exactly 30 years ago when State agencies granted Reserve permission to discharge taconite "tailings"—the waste left after extracting taconite—into the lake. At that time it was believed the tailings would create a dense current in the lake that would carry all the tailings to the bottom where they would do no harm.

Lake Superior is a peculiar body of water in many ways. Although it appears to the visitor as a beautiful recreational resource, swimming is a rare occurrence along its shores.

The reason is that the lake is dreadfully cold. Because of its extreme depth—1,300 feet in places—it never warms up much above 40 degrees Fahrenheit and the swift currents around Duluth make the lake even more hazardous. This writer was told by a commercial fisherman that a man whose boat capsizes in the lake cannot expect to live more than a few minutes in the water because it is so cold. The bodies of those who do drown are preserved underwater for a long period for the same reason, since the cold inhibits decay.

The lake's depth and the principle of a dense turbidity current were therefore factors in the decision to permit Reserve to dump its wastes, and nine years after the permits were issued, the company began commercial operations at Silver Bay, some 65 miles northeast of Duluth. Initially, residents welcomed the industry, as jobs were scarce. Over the years, State permits were amended to allow larger volumes of

Aerial view of discharge of taconite tailings into Lake Superior.

Earthmovers clearing dam site at Reserve Mining's Milepost 7, where taconite tailings will be dumped.

Students at the Duluth campus, University of Minnesota, sampling filtered water during period when new filtration plant was under construction.



dumping until Reserve was pouring 67,000 tons of solid tailings a day into the lake

In 1969, 13 years after full operations began, the Department of Interior disclosed that fine tailings were not sinking to the lake bottom as originally believed but were drifting some distance from the discharge point. Interior's report concluded that Reserve should be given three years to build another disposal site on land. The battle was joined.

The problem was not limited to nearby towns using Lake Superior for drinking water. Five communities in Minnesota including Duluth, two in Wisconsin, and one in Michigan used the lake water for drinking. By

May 1969, Interior Secretary Walter J. Hickel convened the Lake Superior Enforcement Conference to consider inter-State pollution of the lake.

Location of Milepost 7 where tailings will be deposited inland.

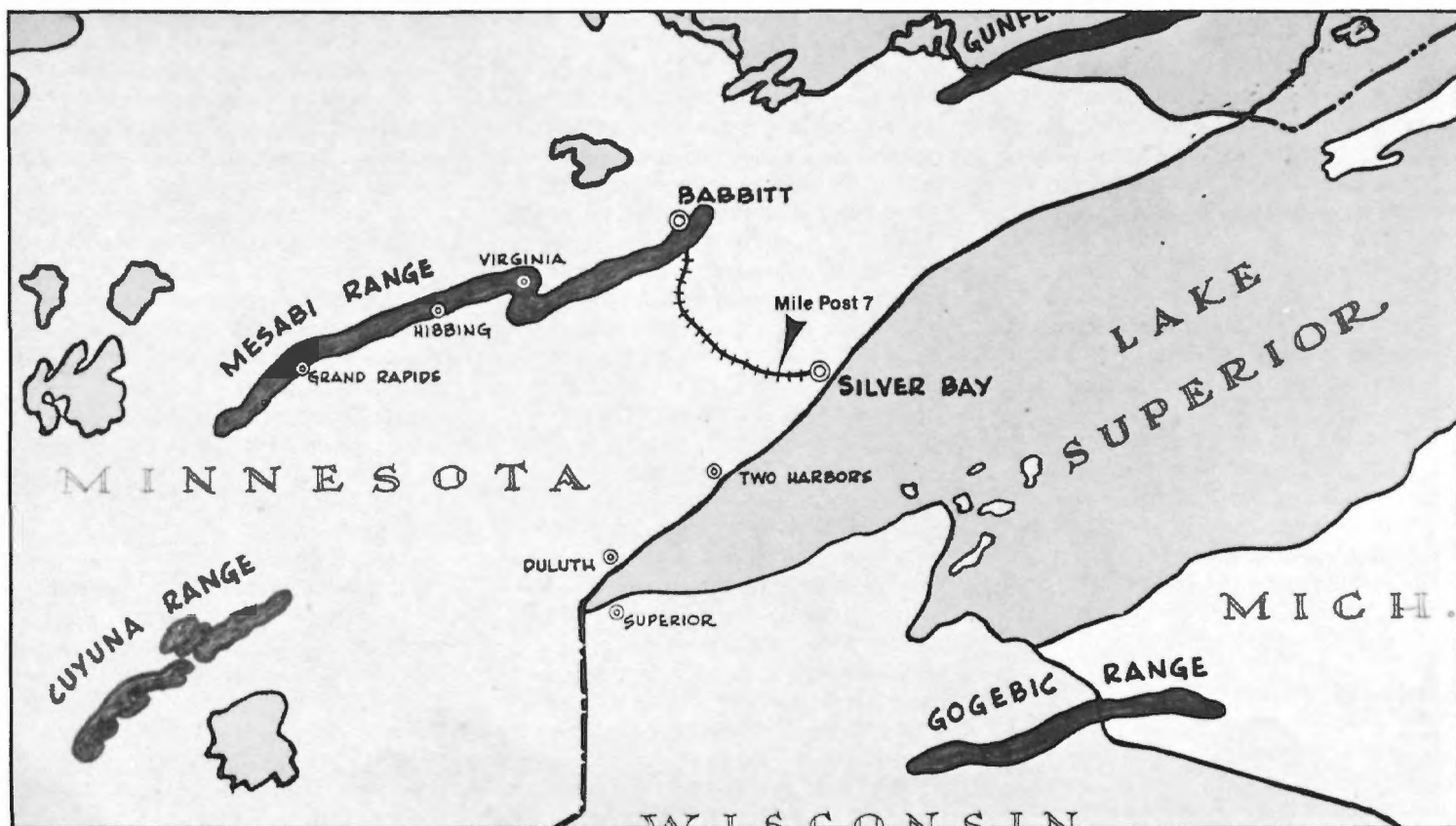
Conferees included representatives of Minnesota, Wisconsin, Michigan, and the U.S. Government.

In September of that year the Conference determined that based on the evidence, the discharge from Reserve potentially endangered the health and welfare of persons in States other than Minnesota. In the meantime, the company had begun a study of on-land disposal sites.

A complex series of claims and countercharges began in the courts, and among other things a proposal to pump the tailings 150 feet below the surface of the lake was considered. The Conference rejected this idea.

EPA in January 1972, asked the Justice Department to sue Reserve

Continued on page 8





Taconite pellet in form used for shipment to blast furnaces.

Highlights of the Reserve Case

December, 1947—Minnesota State agencies grant permission to Reserve Mining Co. to take 130,000 gallons per minute from Lake Superior and discharge it with taconite tailings in suspension back into the lake. The permits specify this must not result in any adverse effects on public water supplies.

1956—Reserve begins first full year of commercial operations at Silver Bay. Permits amended to permit 260,000 gallons per minute discharge.

1960—Permits amended again to permit discharge of 502,000 gallons per minute.

April, 1969—Department of Interior reports that some fine tailings are not carried to the bottom of the lake by the heavy density current, as originally believed. Report says Reserve should be given three years to study and construct on-land waste disposal facilities.

February 3, 1971—Reserve report rejects on-land disposal and proposes deep-pipe discharge 150 feet below surface into lake.

April 23, 1971—Lake Superior Enforcement Conference Technical Committee rejects deep pipe proposal as not complying with pollution abatement regulations.

April 28, 1971—EPA notifies Reserve it is in violation of Federal and State water quality standards.

February 18, 1972—U.S., at request of EPA, brings suit against Reserve in U.S. District Court in Minnesota seeking abatement of discharges into lake.

June 15, 1973—EPA issues a statement that Duluth's drinking water contains large quantities of asbestos-like fibers believed to originate from Reserve's discharge.

July 3, 1973—Duluth mayor announces that discount coupons under a Federal grant

are available for purchase of bottled water by local low-income families.

August 24, 1973—EPA recommends building a pilot plant to determine needs and costs of filtration of Duluth's drinking water.

January, 1974—Duluth begins distributing filtered drinking water at fire stations.

March 13, 1974—Filtration units supplied to all Duluth schools.

April, 1974—EPA rules that Duluth water is unfit for interstate use as drinking water.

April 21, 1974—U.S. District Court Judge Miles Lord orders Reserve to cease dumping tailings into lake. Reserve shuts down. Three days later Lord's order is stayed by 8th Circuit Court of Appeals.

May 8, 1974—Duluth approves ordinance requiring restaurants to post whether their water is filtered.

January 23, 1975—EPA and Corps of Engineers release studies recommending unique water filtration plant in Duluth.

May, 1975—Congress and Minnesota approve \$4 million and \$2.5 million respectively to build Duluth plant.

December, 1975—Duluth Mayor announces \$3 million program to provide free drinking water in cartons at grocery stores until filtration plant is operating.

November 29, 1976—Duluth water filtration plant formally opened, the only facility of its kind in the United States.

April, 1976—Minnesota Supreme Court affirms lower court ruling that Reserve can use on-land disposal of wastes at Milepost 7.

June, 1976—Reserve begins three-year project to phase out dumping of waste rock in lake and deposit it 7 miles inland.



Four steps in processing taconite including particle reduction, magnetic separation, formation of pellets and firing them to withstand rough handling.



because the company's discharge of tailings "endangers a unique natural resource," and Justice filed suit a month later.

Then in 1973, after scientists at EPA's National Water Quality Laboratory in Duluth began measurements, they noticed a doubling of the tailings concentration in the Duluth water supply. At the same time, they found the tailings contained large amounts of fibrous material. They sought the advice of an asbestos specialist, Dr. Irving J. Selikoff, head of the Environmental Sciences Laboratory at New York City's Mount Sinai Hospital. He warned that the amosite variety of asbestos in question could be a health hazard if ingested. Since the cancer rate is high among asbestos workers, the findings alarmed scientists.

On June 15, 1973, EPA issued a brief statement that Duluth's drinking water contained large quantities of asbestos-like fibers. Within a week, prompted by rising public concern the mayor of Duluth announced the location of various well and spring supplies where people could get drinking water free of the fibers.

But what about shut-ins and people without cars who had no way of getting pure water? Within another ten days the city was making discount coupons available under a Federal grant for low income families to buy bottled water. Six months later filtered water was being distributed free at city fire halls, and in 1974, filters were installed in schools, restaurants, and hospitals.

In December 1975, a citizen's group, "Families for Safe Drinking Water," demanded that the city provide filtered water to anyone who wanted it, after one couple refused to pay its water bills on the grounds that the water was contaminated by fibers.

The city announced a \$3 million Corps of Engineers program to provide pure water in cartons free at grocery stores.

What was it like for Duluth residents to suddenly find their tap water might be carrying carcinogens?

"I was concerned," says Mrs. Donald Pfeiffer, now a cashier at a Duluth restaurant. "I was pregnant at the time. I'd been drinking Duluth water all my life and wondered why they suddenly decided it was unsafe. So we all began drinking water that had been brought in. The stores had it in half-gallon cartons, labelled in big red letters. It was free, and you could take a case home if you needed it. But it was a hassle."

Mrs. Pfeiffer said her family is all healthy today, adding with a smile, "so far as we know."

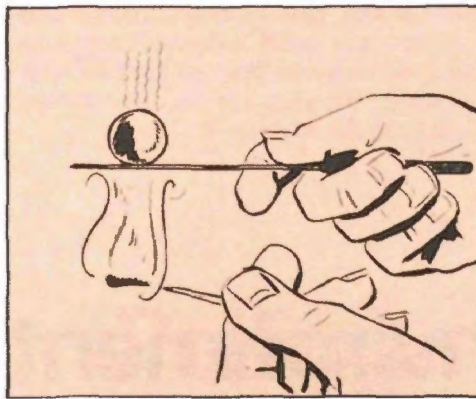
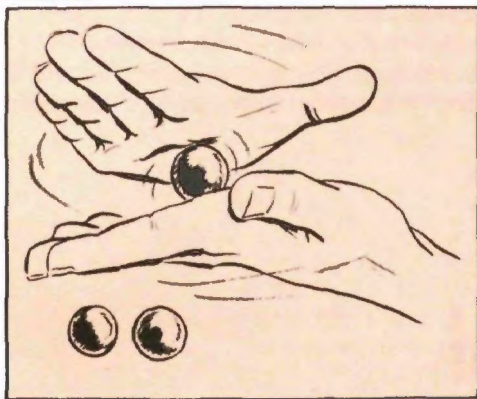
Barbara Beckrich, a senior at the Duluth campus of the University of Minnesota, commented, "One shock to me was that all the spigots on campus were suddenly labelled. There

was an orange sign above some that said "Not filtered," and a blue sign at drinking fountains that said "Filtered." So you would at least have knowledge of what kind of water you were drinking."

For some time there was doubt that anyone could prove the fibers in the Duluth water system actually came from Reserve's operations far up the lake. But by a sophisticated bit of detective work, scientists at the EPA Laboratory were able to show through x-ray diffraction that a unique mineral tracer in the water called cumingtonite grunerite could only have come from the company's tailings.

Trucking in water cartons was never considered more than a stop-gap measure in Duluth. Responding to pressure from the entire Minnesota delegation, including Senator Humphrey, Congress voted \$4 million and the State legislature \$2.5 million to help build a unique filtration plant capable of removing virtually all the fibers from Duluth's water. Formal





dedication of the plant took place November 29, 1976. Gradually the cartons and signs began disappearing and citizens breathed easier.

The problem is not yet solved, however, for residents of nearby Cloquet. The community has switched from pumping Lake Superior water to well water several days a week so that residents can fill containers to tide them over. But according to Paul Wagtskjold, a member of the community's citizens advisory committee for drinking water, the water table for the wells is dropping.

"We still use lake water three evenings a week so we don't over-pump our wells," he explains. "We have filters furnished by the Corps of Engineers at all schools and the fire station."

Cloquet is now seeking some way to finance a filtration plant like Duluth's because the wells can't fill future needs. "It will cost \$4 million," he says, "and we can get \$1.3 million of that from the State, but we don't know where we can get the rest.

Cloquet only has 10,000 people and it would bankrupt us."

Meanwhile, Reserve Mining is pushing ahead with work at its Milepost 7 site to meet the court-ordered 1980 deadline for ending its dumping in the Lake.

The company already has added 320 personnel and expects the construction payroll will hit 1,600 next year in addition to the 3,000 normally employed at the plant. About 65 permanent employees will be needed to run the on-land operations over and above the present 3,000.

Reserve is spending nearly \$41 million on the waste dump itself and \$51 million on pipelines, railroad tracks and roads to serve it. The company also is investing more than \$200 million to modify the Silver Bay plant so that coarse dry wastes can be separated from the fine particles that will be pumped in water to Milepost 7.

Finally, Reserve is adding \$72 million worth of electrostatic precipitators and other equipment to prevent dust and fibers from escaping into the atmosphere during processing. At the insistence of the State, the disposal plan has been modified to provide for covering all fine and most coarse tailings with several feet of water to prevent fugitive dust emissions.

The decision to build at Milepost 7 is the final result of a prolonged court battle after a U.S. appeals court found that lake dumping was incompatible with environmental standards and ordered it halted.

Today the bulldozers and trucks are busy constructing two dams at either

end of a valley where the taconite wastes will be stored permanently. The company is using sand for the dam bases and packing it with diesel rollers. Special lines extending through the base are attached to instruments that will monitor any movement of the dam as well as water pressure and angular displacement. Later coarse tailings from the plant will be carried in rail cars to build the dams to their projected height of 180 feet. A layer of 10 feet of water will cover wastes dumped in the basin at all times to prevent asbestos dust from blowing into the atmosphere.

"Basically the basin is like a bathtub," says Clinton Maxwell, supervising engineer for the Milepost project. "We've got the sides already there and now we're building the two ends."

And so, after an estimated \$370 million for pollution control and many years of costly litigation, Reserve Mining seems to have its worst troubles behind it.

During a recent visit to Silver Bay, this writer asked Reserve's president, Merlyn Woodle: In hindsight, would you have done anything differently, knowing what you do now?

"No, I don't think so," he replied. Reserve officials have consistently denied that the plant created a cancer hazard.

Nevertheless, the Minnesota Department of Health, under a grant from the EPA Industrial Environmental Research Laboratory in Cincinnati, is doing a continuing study of the Duluth area population to see if any rise in the cancer rate has occurred. So far, no increase has been detected. These studies will have to continue for many years, since the lapse time from initial exposure to observation of cancer can range from 20 to 40 years. □



Reserve's Silver Bay plant where ore vessels are loaded.

One of the healthy characteristics of a democracy is full dialogue and review of the many options we as a society possess. This is a luxury guarded by the First Amendment.

In the best American tradition as we face our painful environment/economic/energy trade-offs, to cite a few, it is useful to pause and consider

Environmental Journey

By Richard P. Nalesnik

A look at the environmental map indicates that we have come far, far enough to justify stopping to ask questions about which direction to now take.

Some of the emotionalism that has clouded our journey appears to have been tempered. We must now view the balanced approach not as an option but rather an imperative.

Unfortunately, our national environmental laws do not give very good clues as to just where "balance" is. As a result, we seem to be confronted by an unending series of crises with no ready or easy formula for their resolution. To the extent that we have an articulated national environmental policy, it appears to be replete with inconsistencies.

The purpose of national environmental policy should be to provide a framework which encourages rational solutions to our environmental problems.

Since these problems are fundamentally engineering ones, the solutions ought to be rational from the standpoint of sound engineering practice. That is, the solutions ought to employ practical means which will truly be effective in the technical sense in eliminating or minimizing some real problems.

Since the costs of pollution control enter into our national accounts and affect our international trade position



and balance of payments, solutions should also be rational from the standpoint of being cost-effective. Such costs are ultimately borne by the purchasers and consumers of products. Thus, the producer has a trustee-like responsibility to resist pollution control proposals which would impose costs that are excessive in contrast to the environmental benefits which would be achieved or in contrast to alternative methods of achieving the same environmental benefits.

Costs may be so high that they threaten social and economic dislocation. If a single-plant producer finds that his costs of production will exceed the value which he will receive from his production, he faces a decision to cease production. In a free society, he has this option. In a totalitarian society, a producer may be forced to continue production until his physical and financial resources are reduced to zero. This may provide a temporary solution to an employment problem, but it does not

contribute to the long-term efficiency and prosperity of a society. A multi-plant producer may be confronted with the same problem at one or more of his plants. If he is forced to cease production at the plants, unemployment problems will be created for individuals and economic problems for dependent businesses and governments. Sometimes, but far from always, the multi-plant producer may be able to offer employment at his other operating plants. This will help the unemployment problems of some individuals, but does not help the dependent businesses and governments at the original location.

These observations are made while keeping in mind the fundamental principle that no producer should be permitted to operate in such a manner that his operations will impair public health.

On the other hand, forcing a producer to use up capital resources so that he may discharge clean water into a dirty stream does not make sense.

One may also question the entire departure from the regional conference approach under the Water Quality Act of 1965 to an approach under the Federal Water Pollution Control Act Amendments of 1972 characterized by criminal penalties. The conferences resulted in expenditures of millions of dollars under regional cooperative efforts based on the water quality needs of particular water basins. Today, the regulators take pride in the size of fine levied against individual dischargers. The

Continued on page 36

Richard P. Nalesnik, Ph.D., is Vice President, Resources and Technology, National Association of Manufacturers.

other points of view. In this issue we report the viewpoints of Richard P. Nalesnik, a Vice President of the National Association of Manufacturers

as well as those of a well known environmentalist and former President of the Sierra Club, Laurence I. Moss.

Pulling Together

By Laurence I. Moss

This issue of the *EPA Journal* contains several heartening examples of what can be accomplished when man's ingenuity is brought to bear in solving problems. I believe, however, that as a Nation we have not done a satisfactory job of encouraging similar ingenuity in the solution of some of our most important environmental and energy problems. This is because the institutional mechanisms we select often fail to properly motivate those whose performance is crucial to success. It is as though we hitched up a wagon with two teams—at one end the "public policy" team, at the other the "private sector" team, yelled "giddyap," and expected to get to our destination! How much more likely we would be to get there if the teams were hitched to pull together!

Let's say that as a society we have decided on certain environmental quality standards and goals. Examples for air quality would include the national ambient air quality standards, prevention of significant deterioration, allowable increments, and protection of visibility in certain areas. The institutional mechanism almost inevitably chosen to implement such goals is that of a "limits" system. That is, a limit is specified, in regulations such as those embodied



in the State Implementation Plans, beyond which each emitter must not go. If present emissions are in excess of the limit, then reductions are required, as in a compliance plan.

If the limit can be achieved with technology that is obviously available, and at a cost that is low, then this system will work rather well. But consider the case when the reverse is true.

Remember that, despite lots of talk about social responsibility, the primary motivation of the corporation is to make money.* (I am not at all sure that it can or should be otherwise. It is the job of the government, not the corporation, to set limits on certain actions and intervene in the market so that social goals are met.)

The corporate manager, in the

case of uncertain technology and prospective high costs, generally has two strategic options. One would be to invest in the desired research, development, demonstration, and then the major new facilities needed to solve the problem. The benefits of this option include reducing the adverse environmental impact (which, however, the corporate manager often thinks is exaggerated by society) and getting the regulators off his back. The costs include a definite short-term reduction in profit, and a likely long-term reduction as well, because even with the new technology the reduction in emissions will usually require some net increase in the costs of production. Consequently, the industry leader in pollution control is likely to be at a competitive disadvantage. (The non-compliance penalty provision of the 1977 Clean Air Act Amendments will help with this problem, but will not fully solve it.)

The second option, the one it seems is more often taken in such cases, is a strategy of delay. Every doubt (reasonable and unreasonable) about the availability of the technology is exploited, investments to resolve the doubts are put off, and a battery of lawyers and lobbyists is employed to exhaust every possible administrative, legal, and legislative remedy. The cost of this option to the company is low compared with the cost of the first option. Thus, man's ingenuity is brought to bear in a way that frustrates solution of

*This is not meant to imply that a government agency organized to perform a similar function would act differently. The policies of Tennessee Valley Authority (TVA) and American Electric Power Company are not appreciably different regarding the environmental impact of hydro facilities or the use of scrubbers.

(Laurence I. Moss is an energy-environmental consultant and former president of the Sierra Club, who serves as chairman of the Environmental Caucus of the National Coal Policy Project.)

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Using 'The Rule of Reason'

By Francis X. Murray



The large red and white charter bus pitched and bounced along the rutted dirt road, winding its way down into the strip mine at Big Sky, Montana. As it reached the bottom of the mine next to a large coal-loading shovel, the bus stopped, and out poured some 30 passengers in every conceivable form of dress—from suits and ties, to jeans and torn T-shirts.

In the group were nationally known environmentalists, coal company presidents, Montana State officials, academicians, local ranchers and mine operators, members of the press, and Indian representatives. This meeting of the Mining Task Force of the National Coal Policy Project was held in the Northern Great Plains to provide a first-hand look at mining problems in that region as well as an opportunity to talk with local ranchers,

(Francis X. Murray is project director, National Coal Policy Project, Center for Strategic and International Studies, Georgetown University.)

Representatives of industry and environmental interests touring a coal strip-mine site, under the auspices of the Georgetown University Center for Strategic and International Studies, are: (l to r) Mike McCloskey, president of the Sierra Club; Dale Shelly of Georgetown University; John Corcoran, former Chairman of the Board, Consolidated Coal Co.; and Larry Moss, former president of the Sierra Club.

county managers, businessmen, environmentalists, and mine operators.

During their two-day trip through parts of Wyoming and Montana, the Task Force covered 350 miles, inspected five strip mining operations, spent time in several alluvial valleys and rail junctions, and met with scores of local citizens. From these discussions and experiences, the 14 members of the Mining Task Force (seven industrialists and seven environmentalists) will seek to reach a consensus as to how the mining problems peculiar to this area can best be addressed. Their agreed-to positions will then be reviewed and incorporated as part of the Project's

overall recommendations.

The Mining Task Force is one of five Task Forces which constitute the basic working units of the National Coal Policy Project. This is an attempt to bring together leading industrialists and to discuss the environmental issues surrounding the use of coal. The meetings and discussions are low key, problem-solving working sessions, devoid of the rhetoric and public pronouncements which so often receive maximum media coverage. The participants are employing a technique or code of behavior referred to as the "rule of reason." Under the guidelines of this rule, the parties first seek to develop relevant facts and data, then proceed to search for resolution of the issue or problem.

This Project was formally initiated on January 18, 1977, with an official chartering meeting of the 26 members of the Project's Plenary Group. In fact, the National Coal Policy Project had been germinating for almost a year prior to this meet-

ing. The idea for a dialogue on coal issues was first conceived by Gerald Decker, Corporate Energy Manager of the Dow Chemical Company.

Gerald Decker's interest in finding a better way for industry and environmental groups to resolve their differences grew out of the frustrating experiences which Dow has had with the Midland Nuclear Plant. This plant, a joint venture by Dow and Consumers Power, was designed to meet Dow's expanding needs for electricity and steam as well as Consumers' expanding needs for electricity. However, after more than ten years of continual court battles and the expenditure of hundreds of millions of dollars, the facility is scarcely half completed. The latest forecast calls for the plant to be on line in 1983, at three to four times its original estimated cost (assuming that there are no further delays).

With this experience so vividly etched in his mind, Gerald Decker sought to find a better way to resolve these types of problems. Subsequently, two important events occurred which were instrumental to the inception of the idea for a National Coal Policy Project.

The first event was the publication of a book by Milton Wessel, entitled *The Rule of Reason*, which proposed an alternative to the adversary process widely used in legal and legislative proceedings. The book called for a reasoned approach whereby both parties would openly present and weigh all the facts prior to seeking agreement on how best to resolve an issue. The approach required complete openness and willingness to search for the best solution—although this could be significantly different from either party's initial position. The concept of the rule of reason had a very strong appeal to Decker.

A second instrumental event was the decision by Gerald Decker to serve on the FEA Environmental Advisory Committee which was chaired by Laurence I. Moss (former president of the Sierra Club). At one of the Advisory Committee meetings, Decker approached Moss and presented his ideas on the rule of reason approach and its potential as a method for resolving coal-related issues before disagree-

ments over coal development degenerated to the emotional level of the nuclear debate. Laurence Moss was interested in the proposal, although he was uncertain that such discussions could prove fruitful.

Shortly thereafter, Decker and Moss approached the Georgetown University Center for Strategic and International Studies to serve as the institutional home for the National Coal Policy Project. The Center's role was to coordinate and administer the Project's activities, and to provide whatever support was needed to make the process work.

Before launching a full-scale effort, all parties to the process felt a test or demonstration meeting was essential. In July 1976 at Airlie House, Virginia, 14 industry representatives and 11 environmentalists met for two days to discuss two very specific topics—namely, energy pricing policy and the prevention of significant deterioration. The discussions were forthright and open, and some general points of agreement were reached. At the conclusion of the meeting, both sides decided overwhelmingly to continue the effort and expand it to cover a broad range of issues.

Following the July meeting, a series of informal organizational meetings were held by both sides to expand membership in the Project and fill the Task Force positions. The Task Force leaders then met to determine which issues should be addressed by each of their groups which include: Mining, Coal Transportation, Air Pollution, Fuel Utilization and Conservation, and Energy Pricing. At the Project's charter meeting, the Task Forces presented their lists for discussion and approval by the Plenary, and the Project was officially underway. Envisioned as a one-year effort, the National Coal Policy Project will conclude with publication of the Project's findings in March 1978.

The objective of the National Coal Policy Project is to bring together leaders of industry and the environmental community in an effort to reach consensus on the key issues surrounding the use of coal in an environmentally and economically acceptable manner. When the

Project was first initiated, it was realized that coal was likely to be a much more important fuel in our energy future. As a result of President Carter's Energy Plan, the Project has taken on increased importance and some sense of urgency.

For many years the adversary approach has been used by both sides as the primary method of resolving environmental disputes, be it in legislative hearings or court rooms. It is generally conceded (even by many business leaders) that adversary tactics were very necessary in the early phases of the environmental movement to achieve environmental goals and attract public awareness and support. Given the success of this effort, a general awareness and sensitivity to environmental problems now exist in our social and political institutions. This changing situation calls for a thoughtful review of the methods and tactics which should be employed to solve environmental problems. The belief (among many of those not firmly anchored in either camp) that there must be a better way is widespread and growing. Disenchantment with current methods of conflict resolution is based on the feeling that the adversary approach often does not serve the public interest, but rather serves only the objectives of the victorious party.

The National Coal Policy Project is attempting to develop a process which will be an alternative to the adversary method. In many respects it is a first step with many limitations and short-comings. This process involves only two elements of our social-economic-political structure, namely industry and environmental organizations. Many other important groups do not have representatives in this effort. Moreover, the Project does not address all environmental coal issues, but has concentrated on those which are believed to be important and at the same time amenable to the rule of reason method. Nevertheless, despite these limitations, the process is meeting with much success. With luck, patience, and hard work, it may well provide a viable alternative for solving some of our difficult environmental problems. □

The Path Ahead

An interview with Administrator Douglas M. Costle

What will be the future of EPA? Is the jobs vs. environment issue waning? Are EPA's town hall meetings worth while? What must EPA do to improve its credibility? What were the Agency's major accomplishments during the past year?



What is your opinion of the current mood in Washington?

In general, there is a more open, problem-solving orientation. The new Cabinet and other Administration leaders are asking basic questions about what we're doing as a government. It means that fresh perspectives are being brought to the whole debate on major issues. And I think the approach is basically quite pragmatic.

Do you think this is helpful to EPA and its cause, then?

Very definitely. And we share our experience with our colleagues in other agencies. Solving water pollution problems in municipalities, for example, has given us insight into questions of urban planning, urban policy and growth management. This makes us a credible participant within the Administration in the debate about our overall urban policy.

What were EPA's major accomplishments during the past year?

We found that more than 85 percent of major industrial dischargers in the United States met water quality treatment deadlines under the Water Act.

Of those that didn't, a large percentage came very close to meeting the requirements. In fact, they were so close that many would probably be in compliance before we could ever bring litigation.

Some industries, of course, couldn't comply for reasons completely beyond their control. A number are scheduled to discharge their wastes into municipal systems which still have not been completed.

Finally, about 300 industries could be classified as essentially non-performing. We are preparing to move against these companies in a very aggressive enforcement program.

Another major accomplishment in the water area is that we

have successfully obligated \$1.8 billion, the original appropriation, for construction of municipal waste treatment plants.

In addition, we have begun to crack down on Federal installations which are polluting rivers and lakes. We have to be as hard on the Federal establishment as we are prepared to be on private industry or municipalities. We have an obligation to set an example.

And what about our record in air pollution?

In air, three years of congressional debate have led to a set of amendments to the Clean Air Act. We have a major new charter in air which provides a basis for us to move ahead.

The basic strategy of the original act was preserved. In fact, many of the policies that EPA had formulated, such as the emissions offset policy, were written into law.

I think it's especially significant that the President asked me to release the Administration's position on the Clean Air Act two days before the energy program was sent to Congress.

And he asked me to do it from the White House so that it would be clear it had the Presidential imprimatur. In effect, the message he was conveying was that we must make certain that—as we try to solve our energy problems—we are not going to sacrifice public health protection embodied in the Act.

What about the toxics area?

In the toxics area, we pushed through the regulation of PCB's. We have over 100 pesticide compounds whose registration we are questioning. Twenty of these inquiries are far enough along that a decision may soon be made on whether their registration should be continued.

We are rapidly building up an inventory of chemicals presently in commercial production. Originally, it was estimated that our inventory would list 30,000 chemicals. However, we have now learned that we will have an inventory consisting of more than 70,000 chemicals. And that number is still climbing.

We've merged the pesticides and the toxics program, under one assistant administrator.



Have leadership appointments been completed?

In the Agency as a whole, we have completed our recruiting: the assistant administrators, the regional administrators. We've assembled a knowledgeable, competent group of people whom the professionals in EPA can respect.

How is our relationship with the White House?

We've been on the cutting edge of two issues that are very important to the President: zero base budgeting and regulatory reform.

We have led the government in developing effective zero base budgeting techniques. At a recent cabinet meeting, the President singled out EPA's staff for having done the best job in zero base budgeting of any agency within the Federal Government.

Is EPA cooperating with other regulatory agencies?

EPA—along with the Occupational Safety and Health Administration, the Consumer Product Safety Commission, and the Food and Drug Administration—is pioneering in the area of interagency coordination and policy formation.

We have a four-agency agreement on regulating toxic chemicals. Various work groups have been set up to develop common approaches to testing methodologies, risk assessment, enforcement, and research and development. We are proving in tangible ways that inter-agency cooperation and coordination can be a reality.

EPA, OSHA, CPSC, and FDA officials meet monthly. We are developing plans for sharing of facilities and equipment, sharing of personnel, and coordination on a variety of day to day, practical working levels.

I've been particularly pleased with the implementation plans for cooperation that have come in from the Regions. They are very practical. Some regional offices of the four agencies are working on plans to share facilities, are joining together on an enforcement effort to curb coke oven emissions from a steel company plant, and are developing joint action programs to deal with certain toxic and environmentally destructive chemicals.

I think an increasing issue in this country will be coordination of the regulatory impact which the Federal Government has on our economy.

Are there signs that the "jobs vs. environment" issue is waning?

Yes. This argument, often used by industry against EPA, isn't being used by labor. The most recent example is the steelworkers.

Everybody is concerned about shut-downs in the steel industry. There is now over-capacity in world steel production. Every nation has built its own steel making capacity, and they have built more than they need to serve their own internal needs, so that they are making products now which they're willing to dump abroad.

The U.S. steel industry has been a victim. This has created real economic problems for the steel industry. It's a very complicated situation.

The steel workers have been strong proponents of governmental action to help correct the problem. At the same time they have testified that they do not believe that the steel industry should be granted relief from OSHA or EPA requirements.

They realize that steel is a hazardous industry and that cancer rates are high in steel towns. What they want is a modernized, clean, competitive steel industry which is a stable employer. And they want that steel industry to be a clean, healthy neighbor in the communities in which their families live. And they recognize that OSHA and EPA are critical to bringing that about.

I think the steelworkers have shown remarkable statesmanship. They and an increasing number of other unions are beginning to recognize that unwillingness by industry to invest in cleaning up the work place is often a sign that the industry is not willing to make a long term commitment to provide a stable employment base.

Put another way, willingness

by industry to clean up is a signal that they intend to remain a stable employer in that area.

As you know, the steel workers were major supporters of tough Clean Air Act requirements. And I think, generally, you will find labor unwilling to be boxed into the corner of being told by industry that you either have a job or your health, but not both.

Labor is too smart for that: they know better. In the past they have sometimes felt they didn't have anybody to talk to. I think that's now changing. I think the message is getting across that we're not trying to put people out of work.

You've taken some hard questions at the town hall meetings. Are these sessions really useful?

Yes. It is so easy sitting here in Washington to get trapped by the flow of paper coming in the front door. As good as the quality of that paper is, it is no substitute for getting out and seeing the problem for yourself.

I have found talking face to face with people who live with environmental problems very stimulating. Town hall meetings have been the fastest way I know to get a shot of adrenalin, and to bring me back to basics.

When you're working under tremendous pressure, it's very easy to have your perspective distorted by the intensity of that experience.

Yet it's important to remember that the real problems lie beyond the Potomac River, and we just cannot afford to let ourselves be insulated from the realities. And the only way you can find those realities is to get out of the office and go confront them where they exist.

Do you think EPA may become part of a new Department of the Environment and Natural Resources?

Virtually every agency of the Federal Government is being studied to determine if it should be included in reorganization plans. And, of course, EPA is connected with just about everything else.

The plain fact is that, as you know, we let two genies out of the bottle in the early seventies. One was called environment and the other was called energy.

These are two themes that run through everything we do in our society, and they are forcing us to think about the interconnectedness of things. We'll never be able to go back to the conventional, compartmentalized view of the world or of government policy.

So this agency plugs in with virtually every major policy issue that the President is pre-occupied with. It is very unique in the organizational spectrum of Washington.

It should come as no surprise that we're involved in one way or another with a large number of reorganization plans. For example, the OMB reorganization team is looking at the logic of merging EPA and some of the Federal Government's health-related functions, as well as at the possibility you mentioned.

What do you see as the biggest challenge ahead for EPA?

I think there are a series of challenges. One is to consolidate our legislative gains. We must find the means to manage the tremendous diversity of tasks that we have to do. We particularly need to develop a clear sense of direction in our whole toxics effort.

And that will affect every part of this agency; air, water, resource recovery, drinking water, research and development activities. Toxics will be a theme that helps weave us together. We must see that this program gets launched right.

I think also we must work hard to build our credibility with the many publics that we serve. We are not a one constituency agency. Our actions must be shaped by a variety of perspectives: health, urban concerns, rural concerns, economics, just to name a few.

The whole public is our constituency, not just one part.

Finally, I think we need to firmly establish our growing reputation for professionalism, effective performance, tangible accomplishment, sensitivity and fairness.

And above all, common sense. □



Industry Guide to EPA

Keeping up with EPA regulatory activity, as well as with Research and Development operations can be difficult unless you know where such information is available. The following guide is designed to help.

Environmental Research Information Center (ERIC)

Since its inception, EPA has been active in development and demonstration of industrial pollution control systems, and has fulfilled its responsibility for disseminating the results. The Office of Research and Development, which designs pollution control systems and assessment methods, works closely with industry to promote their acceptance and use.

The EPA Technology Transfer program was established to

bridge the gap between technology development and application. The results of EPA's Industrial Pollution Control Program are advertised by way of a Technology Transfer Newsletter, available upon request.

In 1977, the Technology Transfer Program was incorporated into the Environmental Research Information Center (ERIC), Cincinnati, Ohio 45268. This new center is the focal point for all technical information dissemination activities within the EPA's Office of Research and Development.

Process Design Manuals

ERIC's process design manuals bring together comprehensive technical information contained in many scientific reports on environmental technology processes. Manuals are available covering processes such as Nitrogen Control, Phosphorus Removal, Carbon Adsorption and Land Treatment of Wastewater.

Research Reports

Hundreds of research reports are produced annually by ERIC. Many represent work in which the Agency has cooperated with industrial groups. Some examples include:

- Mine Drainage Abatement
- Activated Carbon Treatment
- Chromate Removal
- Aerated Lagoons for Food Waste
- Sulfur oxides control
- Incinerator Design and Control
- Feedlot Waste Management

Federal Register System

The Federal Register system is contained primarily in two publications. The CODE OF FEDERAL REGULATIONS is a codification of current regulations of various Federal agencies. It is divided into 50 Titles which represent broad areas subject to regulatory action. Title 40 is "Protection of the Environment." It may be purchased from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for \$4.50. Subscription price of all titles is \$350 per year.

The CODE is kept up-to-date by daily issues of the FEDERAL REGISTER. Regulations properly issued and published in the FEDERAL REGISTER have the

force and effect of law. Published Monday through Friday, it makes available to the public recently issued regulations and legal notices from Federal agencies.

EPA documents that appear in the FEDERAL REGISTER are: (1) Environmental Rulemaking, such as Advance Notice of Proposed Regulations, Final Regulations, and Standards, and (2) Policy Statements, such as Environmental Decision Statements signed by the Administrator.

The FEDERAL REGISTER is \$5.00 per month or \$50 per year, payable in advance. Remit check or money order, made payable to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Seminars

The agency has conducted 130 seminars that were presented to more than 30,000 attendees on a variety of municipal and industrial pollution control subjects, including:

- Upgrading Wastewater Treatment
- Flow equalization
- Physical/Chemical Treatment
- Metal Finishing
- Erosion Control
- Filtration

Research and Development Activities

To find the answers to questions regarding EPA Research and Development activities, a good starting point is the Agency's Technical Information Division. Call (202) 245-3018 or write to the Division at EPA (RD-680), Washington, D.C. 20460.

Technical Information

The National Technical Information Service (NTIS) of the U.S. Department of Commerce operates the largest publicly-available scientific and technical information facility in the Nation. Nearly one million titles are available through this service. For further information, write:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161
or call (202) 724-3382

Contacts for Regulatory Information

For information about specific EPA regulations, the following EPA personnel can help direct you to appropriate Agency contacts. Write any of these sources, other than AIR, at EPA, Washington, D.C. 20460. For Air: EPA, Research Triangle Park, N.C. 27711. Please use mail codes.

| Program | Contact | Phone | Mail Code |
|----------------------------|-----------------|--------------|-----------|
| Air | D. Kent Berry | 919 541-5343 | (MD-11) |
| Effluent Guidelines | William Cogger | 202 426-2522 | (WH-554) |
| Other Water | | | |
| Pollution Areas | Albert Erickson | 202 755-6867 | (WH-551) |
| Drinking Water | Ervin Bellack | 202 755-5643 | (WH-550) |
| Pesticides | Sandy Fuller | 202 755-4854 | (WH-569) |
| Noise | Henry E. Thomas | 202 557-7743 | (AW-471) |
| Toxic Substances | John B. Ritch | 202 755-0535 | (TS-788) |
| Solid Waste | Jerri Wyer | 202 755-9157 | (WH-562) |
| Radiation | R. J. Augustine | 703 557-9710 | (AW-458) |

Measuring Social Performance

Development of a Social Performance Index to give American business a way of appraising the social effects of its operations, including pollution control, has been proposed by the Department of Commerce.

Commerce Secretary Juanita M. Kreps has said that her Department intends to take "whatever steps it can to enhance business leadership in corporate social performance."

In a recent speech to a conference of industrial leaders in Durham, N.C., Kreps said that "working with the Business Roundtable and other business leaders, we intend to develop and publish a Social Performance Index that will give business a way of appraising the social effects of its business operations."

"Businesses can use this index, for example, to provide data on environmental controls, affirmative action, minority purchasing, consumer complaint resolution, and product testing. The Commerce Department will then compile the data and publish it in order to make it widely available to the public and the press. By assisting businesses in evaluating their own performance, we can help to ensure that corporations get credit for the constructive things they are doing."

"This index would also allow those companies who are leaders in promoting the public interest to bring about an improvement in the behavior of less progressive firms. For the latter companies not to join the former is, I fear, to continue to invite Governmental regulations of both."

Kreps said that in addition to the publication of a social index her Department will take other steps to encourage social performance such as working with EPA to expand the regional business-industry seminars sponsored by EPA and Commerce.

The theme of these conferences is "Pollution Prevention Pays." This concept, Kreps said, was pioneered



Juanita M. Kreps

by 3M and Dow. She added that "it demonstrates the cost-effectiveness of approaching pollution control by minimizing the creation of pollutants in the production process, rather than by placing a box at the end of the production process to scrub out pollutants."

Kreps warned that some action is necessary to halt the slide in public confidence in most institutions, both public and private.

"Business can no longer think exclusively in terms of economic outputs—indeed, most businesses have not had so limited a view for some time," she said.

A corporation that is concerned with social performance, as well as its profit margin, takes into account in everyday decision-making the ways in which its activities affect its range of constituents: employees, customers, shareholders, neighbors.

"To the extent that corporate activities consistently reflect a sensitivity to the legitimate interests of these groups, public perception of the corporation will be improved," she stated.

Contending that a broadening of corporate objectives is likely to improve profits, Kreps said that there is good evidence that disregard for

social performance "translates, sooner or later, into significant dollar costs."

"As corporations have grown, so has the public clamor for public accountability on one hand and increased public regulations on the other," she declared.

Kreps said that at present the question of whether corporations are meeting their public responsibilities is receiving a lot of attention in the press and in the public sector.

"No fewer than three Governmental agencies—the SEC, the FTC and Commerce—are examining the question at the moment; other efforts are currently underway in Congress, by the American Bar Association and among business leaders. But while the concern is current, the acknowledged obligation of corporations to the public interest is not new. It is inherent in the historical jurisprudence and development of the corporation in this country."

She noted that even prior to the advent of the modern corporation, "its predecessors were widely thought to have some obligation to the public. History is littered with the phrases of those who have tried to describe this concept. Noblesse oblige, the social contract, philanthropy, enlightened self-interest, the gospel of wealth, social consciousness, corporate responsibility—these are just a few."

Kreps said that while some of these terms are still used, many have become obsolete or devalued.

"But," she continued, "I do not want to be detoured by debates about the proper terminology to describe a corporation's public obligation. Nor do I want to describe how the corporate reputation became tarnished. Rather, I want to talk about how the corporate reputation is now being shaped, and how we might set about changing that process." □

Return To Hopewell

By Rembert Brown

In September 1975, the City of Hopewell in Tidewater Virginia, joined the ranks of cities that have suffered headline-making chemical disasters. In Minamata, Japan, it was mercury. In Seveso, Italy, it was dioxin. In Hopewell, it was Kepone.

What has been the financial and social effect of pollution, two-and-a-half years after the disaster was discovered, on a company, the people who work in the community and the businessmen who rely on income derived from local industry? The answer depends on whom you talk to around Hopewell, if they are willing at all to talk to an outsider. From blue-collar worker to banker you hear what almost amounts to the town slogan: It's not the Kepone that's hurting Hopewell, it's the headlines.

Allied Chemical, fined \$13 million for its part in the Kepone affair, will have spent \$169 million for pollution controls in the period from 1974 through 1980.

The old Life Sciences building, where Kepone was manufactured near the Hopewell News, has been taken apart piece by piece and the poisoned matter buried in a sealed container fenced off from the world and marked with a suitable headstone.

But Kepone and other industrial chemicals in the Hopewell environmental area may have effects more far reaching than the single incident at Life Sciences.

There are nine thousand industrial employees in Hopewell alone, another thousand in surrounding Prince George County, still others commuting from Richmond and adjoining cities.

(Rembert Brown is an EPA Headquarters Public Affairs Officer.)

Earle Ferguson, Jr., vice president of Hopewell's United Virginia Bank, reported this to have been one of the best years financially. Across from the bank on Main and Poythress Streets downtown, a new shopping mall is going up. Gary Worth, director of urban renewal in Hopewell, reports new support from local businessmen and ordinary citizens to upgrade the downtown and areas adjacent. One hundred forty-six new building permits were issued in Hopewell last year.

Many of Hopewell's residents are older than the city itself. The town was born as a chemical boom town in 1916, on the outskirts of a DuPont munitions plant. Almost overnight it grew from forests and farms to a population of 40,000 living in tents and shanties. In some ways this aura of the temporary and expedient has lingered.

Allied Chemical arrived on the scene in 1928. It was followed by Hercules, Firestone and Continental Can, all heavy users or makers of industrial chemicals, and potential polluters. Allied now has four facilities and about 4,000 workers.

In large measure, the 1974-75 business depression passed over the Hopewell chemical complex. The workforce remained intact and most workers held on to their jobs. The men appreciate this fact. Union activity ranges largely from being inactive to nonexistent in the area, and workers relate this to Virginia's right-to-work law. These same men are distant or even mildly derisive to reporters, attorneys, and others they see as a threat to their daily bread. They point out that while Kepone caused some illness, it did not kill anyone. As Ralph Harris, a production worker at Allied put it, "Sure, there's Kepone in the James River, been there for years. But I still go fishing and eat what I catch. This pack of cigarettes here has more harm in it than what I get from out there." As Richard Koot puts it, "We're all going to die from something. If you reporters—especially Dan Rather—will leave this town alone, I'll die with a full belly instead of an empty one."

Most local officials and businessmen are eager to tell the "other side of the Hopewell story," and indicated to this visitor positive evidence of overcoming a bad press. But one official, after keeping his caller on hold



for a time, began his phone interview with, "What new way has EPA found to punish the city of Hopewell?"

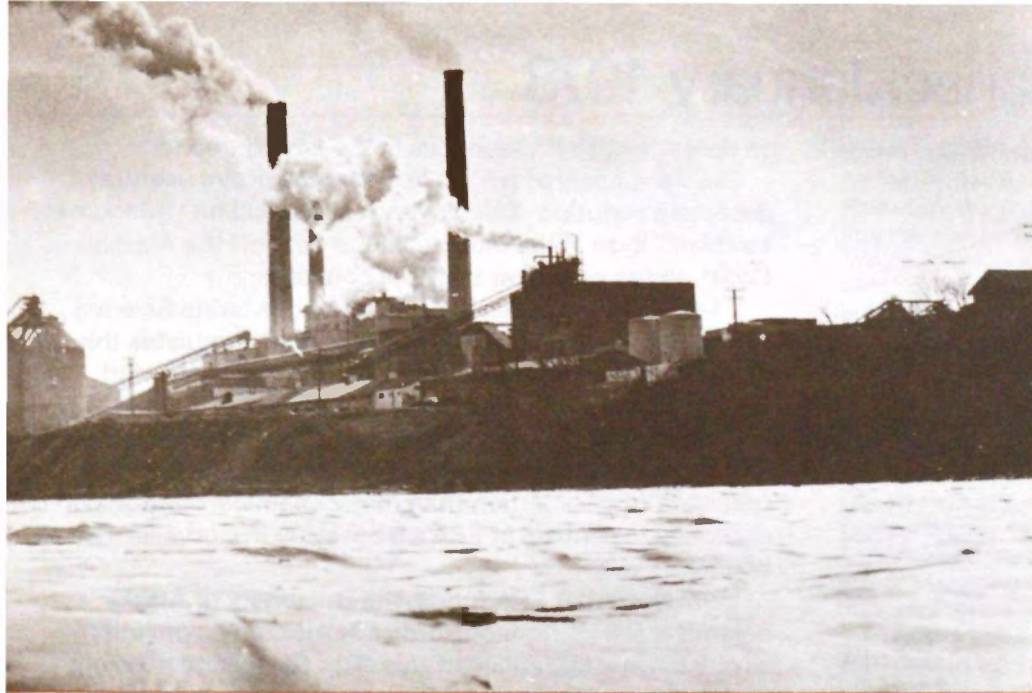
But Hopewell's attractive and energetic Mayor, Hilda Traina, is quick to put aside other business and escort the out-of-towner to places that aid her case for Hopewell.

One local environmental item is the drinking water treatment plant owned and operated by Virginia-American Water Company. Morton Simon, the manager, is quite proud of what he calls the Nation's first charcoal-filtered water system which was installed in the late 1950's. His water comes from the tidal Appomattox River just above where it meets the James, and some distance above the heavily polluted Bailey's Creek that enters the James, below Allied Chemical. The ebb and flow of the tides makes charcoal filtering more a necessity than choice.

Simon's major customers are not the citizens of Hopewell but Allied and the other chemical operations that require pure water for efficient operation. The water from his plant looks and tastes as if it might have come from a spring.

Charcoal-filtered water was not enough to overcome the stigma of Kepone that lingers over Hopewell. A brewery that was considering the town as a site decided instead on Eden, North Carolina, which it may have considered a prettier name to have on its label.

Another point of civic pride is a \$50 million wastewater treatment plant due to begin operating this spring. Like the drinking water plant,



Industrial scene at Hopewell with James River in the foreground.

it seems unusually large for a town of 26,000, capable of treating 70 million gallons of waste a day, according to Ray Hodell, the Yale engineer who is Director. Only 15 percent of input, it turns out, is human waste. Eighty-five percent comes from industry. Homeowners pay \$4.60 per month. Industry pays according to gallonage and percent of solids. Hodell says his plant receives an exotic mix of chemicals from Continental Forest Industries, Hercules, Allied Chemical, and Firestone. He also accepts the chemical and organic waste that Virginia-American Waterworks intercepts from Hopewell's drinking water. This too is waste to be disposed of.

"Each of these customers produces very interesting wastes. The prospect of the interaction of those wastes is intriguing," he declares.

In fact, the final sludge product is so "interesting" it will be incinerated at 1400 degrees or higher and the stack gas scrubbed by 1700 gallons of water a minute to reduce air pollution. Where most city sewage plants have an excess of nitrogen and phosphorus, these ingredients must be added in Hopewell to counteract the chemical input. As part of the complex, Hodell has his own oxygen factory feeding into the system to keep working bacteria alive so they may attack and break down the exotic mix of waste water his plant must treat. This chemo-biological process may be the most sophisticated and advanced in Hopewell; possibly even more so than the processes at the

chemical factories that are his customers. When the plant goes on-stream in 1978 a great deal of James River pollution may come to an end.

Commercial fishermen of the James River have a different story to tell. Near Hopewell in Claremont, watermen are on food stamps and selling their nets. They may legally catch and sell only catfish and female crabs now. In the spring they may also catch for market herring and shad that move in from the sea to spawn in this estuary of Chesapeake Bay. Kepone makes other fish unsalable under Virginia's law. W.D. Melver and W.E. Wyatt will talk about it frankly. They are resigned to selling their nets and painting their boats and waiting for word from the State about when it is safe and legal to fish again. For a waterman to sell his nets is equivalent to a Nebraska farmer selling his tractor, so it seems.

Melter and Wyatt find it painful as independent businessmen to be told they cannot fish anymore in the James. An alert law firm in Virginia has filed a class action on their behalf. They and Allied Chemical will not speculate on its outcome.

Meanwhile both sides await statements from a Kepone Mitigation Task Force composed of scientists from several schools.

Current evidence indicates that Kepone becomes an ingredient of the sediment in the James River with

relatively little suspended in the water itself. However, Kepone is a very stable pesticide compound and does not break down readily even when exposed on a farm field to sun, air and soil bacteria.

It may be that the James River will eventually cover Kepone in the bottom sediment with natural soil run-off and detritus. However long that process may take, and it is unknown today, watermen on the James are effectively forbidden by the State to follow their trade.

Watermen like Melver consider these scientific strictures unduly harmful and unrealistic. Melver describes in detail how croaker, bluefish, striped bass, mullet, herring and shad migrate in and out of the James like waterfowl.

"The State of Virginia won't let us catch or sell these fish. Tomorrow a man can be catching these same fish legally from Montauk to Jacksonville. Because fish migrate, they would be the same fish swimming out there in the James right now. Catch them anywhere else and they are perfectly legal. Not in the James."

As yet, scientists have no way to predict when the Kepone level in the James River will be within safe tolerance levels. There is even reasonable doubt about what level is safe, or, indeed, if any level of Kepone is safe. Scientists at EPA and other government agencies, State and Federal, have joined the Kepone Mitigation Task Force to attack the problem.

Other citizens of Hopewell move about their daily work undismayed, with a maximum of optimism and trust in the future. One may only hope their optimism will turn out to be realistic.

Meanwhile, Mayor Traina said that since the Kepone incident "I feel that there has been a change in the attitude of both industry and the community.

"We are more aware of each other's problems and there is a stronger sense of cohesiveness. We are working together now as a team for the economic and cultural growth of our community."

Environmental Almanac: January, 1978

A Glimpse of the Natural World We Help Protect



Bird Watching

Once the derision of many businessmen was aimed at a particular segment of the environmental community—the bird watchers.

The assumption was often made that anyone foolish enough to waste valuable time observing birds was either simple-minded or kooky, or both.

"They're nothing but bird and bunny watchers," the practical types used to say in dismissing objections to "progress" raised by environmentalists.

Yet there is now a growing appreciation of the obvious truth that studying birds and other animals can provide information vital to people.

For example, as part of a study of the impact of a huge coal-burning power plant on the Montana plains, EPA scientists conducted a periodic census of bird life in the immediate area.

Beginning a half hour before dawn the field project manager stopped at stations every half mile along a 30-mile route around the plant to record either by sight or song the number and variety of birds present.

Birds are living computers and monitors, a fact recognized long ago by coal miners who took canary birds into the mines with them. If poisonous gases were present, the collapse of the sensitive birds gave the miners early warning of danger.

An important advantage in using birds and other creatures to detect harmful substances in the environment is that unlike the limited manmade computers, they cost nothing.

Yet if he were given all the gold in Fort Knox even the most practical and hardheaded industrialist could not manufacture a single living bird.

Birds have often played a significant role in helping us to understand our world. Darwin gained new insights for his theory of evolution by studying how a single finch species on the Galapagos islands developed new food sources and ways of life to escape competition with fellow finches.

In her book "Silent Spring," Rachel Carson warned of the perils of misuse of pesticides by describing a world where bird life had been snuffed out by chemicals.

In addition to birds, many other creatures are now used

to detect injurious presences in the environment.

Even a species of the lowly clam may prove useful in detecting pollution. This tiny oval-shaped clam, "Macoma balthica," lives in the intertidal mud flats off the Alaskan Coast where oil tanker traffic is constant.

The University of Alaska's Institute of Marine Science found that the spillage of low levels of oil stimulates this clam to rise to the surface from its burrow in the mud. Higher levels of oil eventually kill this clam.

The upward movement of the clam in oil-polluted mud and its death could be more effective indicators of the presence of oil pollution than many chemical methods of detection, scientists at EPA's laboratory in Corvallis, Ore., believe.

With the aid of EPA funds, the University of Alaska scientists are continuing studies in Alaskan oil pollution problems and the ability of this clam to indicate possibly harmful pollution in regions where oil production and transportation are likely.

The Council on Environmental Quality is working with other Federal agencies to improve wildlife monitoring which can be used as an environmental indicator.

The U.S. Fish and Wildlife Service and the National Audubon Society with the collaboration of the Canadian Wildlife Service conduct annual monitoring of bird species. Computers are used to check State, regional and continental bird population trends.

Starlings, the Council on Environmental Quality reports, are considered important indicators "for garbage and filth contamination, crop damage, and urban degradation."

Apart from the role played by birds and other living monitors in protecting us, the study of these creatures is helpful in understanding real world truths.

Too many residents of our major cities are so divorced from nature that they think food grows in grocery stores and that fire wood is manufactured by lumber companies.

Yet these same urban areas are also producing an expanding army of bird watchers, people living in concrete canyons who are trying to find nature to help relieve their sense of alienation.

Fortune Magazine carried an article in a recent issue about some of the Nation's leading bankers and other business leaders who have joined the search in urban parks and surrounding countryside for such treasures as blue birds and pileated woodpeckers. Some of these industrialists, the magazine reported, take their binoculars when traveling abroad to spot such rarities as the shoe-billed stork in a Ugandan swamp.

Birds also have attracted the admiration of such master spirits of literature as Keats, Wordsworth, and Shelley.

In his "Ode to the Skylark," Shelley wrote that if this gifted singer could "teach me half the gladness that thy brain must know," he could catch the attention of the world.

In fact, birds are worth the world's attention if for no other reason than that their singing gives us hope that our environment can be saved.—C.D.P. □

1 New England Regional Report

By
William R. Adams, Jr.

*New England
Regional
Administrator*

I have been with the Environmental Protection Agency for a little more than six months. As you can well imagine, these first few months have been taken up with the herculean task of familiarizing myself with all the environmental issues that the New England region faces.

Although the issues I deal with as Regional Administrator are different from those I dealt with as Commissioner of the Maine Department of Environmental Protection, my basic goals are the same and my basic philosophy of managing an environmental program is similar.

I come to this Agency with a definite environmental bias. I think we owe a great debt of gratitude to environmental groups in New England who have struggled long and hard—and usually without recompense—to protect New England's natural resources and natural beauty. In fact, I would say that the single most important factor in the battles that have been won to date has been citizen awareness, citizen concern, and citizen participation. It was an aroused public opinion that brought action by politicians in the form of tough new anti-pollution laws, and it has been the continuing pressure by public interest groups on bureaucrats like me that has assured us of strong, vigorous administration of those laws.

I intend during my tenure as Regional Administrator to work very closely with the environmental community in New England. I will seek their advice. I will support their efforts with a vigorous public information, education, and participation program. We are, after all, interested in the same goal: a high quality environment for all New Englanders.

While I am committed to doing what I can to further the environmental movement, I do not intend to ignore the business community or economic interests. Unfortunately, the only relationship that the regional office has had with the New England business community in recent years has been an adversary one. There have been a number of issues—the Boston transportation control plan, the Seabrook nuclear power plant, and mandatory deposits on bev-

erage containers—over which EPA and the business community have locked horns. I hope as Regional Administrator to reverse this trend and establish an effective working relationship between this Agency and business interests.

I can remember in Maine one of the slogans that was quite popular: “pickerels or payrolls”—the implication being that environmental integrity and a healthy economy are mutually exclusive goals. The irony of the situation was that after the business community warned that the costs of strong environmental laws would jeopardize jobs and slow down the economy, industry, and the paper industry in particular, not only spent over 100 million dollars on pollution abatement but financed the largest production facility expansion in its history.

I do not use this example to suggest that the business community has cried wolf and that we should not heed them in the future. On the contrary, I believe that we must work very closely with business and industry to find mutually acceptable solutions to our environmental and economic problems. Environmentalists do not really want to freeze in the dark, any more than industry wants to destroy the national beauty of New England or create a public health hazard. So we must work together. The world just is not big enough for us not to cooperate. Neither side really wants to waste its energy bickering and sniping when that time and energy could be put to productive use. We can and must learn to co-exist peaceably to our mutual advantage.

The general feeling that environmental and economic

Continued on page 39

Dealing with Toxics

By Steven D. Jellinek

It is fitting that this is one of the first major groups I have addressed since becoming EPA's Assistant Administrator for Toxic Substances. The Manufacturing Chemists Association worked closely with Congress last year in developing the Toxic Substances Control Act. Your support was crucial to its passage. I am here today to ask for a continuation of that support as we move through the initial stages of the Act's implementation. Industry's active cooperation is essential if we, as a Nation, are to reach the goals that the Toxics Act places before us.

This morning I want to talk about the Toxics Act's mandate for government and industry. In doing so I pledge that EPA's actions will place the highest priority on protecting our people and our environment from the unreasonable risks of toxic chemicals. I also hope to leave you with the impression that EPA is committed to taking a responsible approach to implementing the Act. We will not lose sight of the need

Excerpted from a speech given by Steven D. Jellinek, EPA Assistant Administrator for Toxic Substances, to the Manufacturing Chemists Association in New York City, November 22, 1977.

for an economically strong and technologically innovative U.S. chemical industry.

As is often the case with human nature, we sometimes become so involved in solving individual problems that we temporarily forget the broader issues that brought them to our attention in the first place. Let me review briefly some of the reasons we are now faced with implementing this complex and important law.

The problem of toxic chemicals is not new. We know that lead poisoning was widespread in ancient Greece and Rome and resulted in high infant mortality, mental retardation, and sterility. Some historians believe that lead poisoning among the ruling class may have contributed to the fall of the Roman Empire.

Other examples are evident from more recent times. A hormone deficiency among children has been linked to coal smog hanging over 19th century factory towns. And the "mad hatters" of the 19th century fur and felt trades are thought to have suffered neurological disorders caused by mercury inhalation.

But while past encounters with hazardous chemicals in the environment affected only certain classes or segments of societies, today there are signs of much more widespread—and quite possibly long-term—effects.

Some people, of course, argue that human life bears no warranty—that our bodies just have to wear out and die sometime, and that we have achieved our "maximum life expectancy." But most experts disagree. Indeed, there are groups of people who live much longer than we do and some of the diseases killing Americans are practically unheard of in certain countries.

One thing is clear. Most people in the United States today suffer and die from different diseases than they did at the turn of the century, when tuberculosis, pneumonia, and other infectious diseases were the leading causes of death. Today's leading causes of death are heart disease and cancer. Experts believe that the incidence of cancer certainly is related to such environmental factors as smoking, diet, and exposure to

industrial chemicals at work, in the air, and in the water. Many suspect that heart disease, miscarriages, stroke, neurological problems, birth defects, and other maladies may also be influenced by environmental factors.

It is in this context that the Toxics Act is a major new development in our national strategy to promote health and to prevent disease.

As President Carter noted last May in his Environmental Message to Congress: "The presence of toxic chemicals in our environment is one of the grimmest discoveries of the industrial era. Rather than coping with these hazards after they have escaped into our environment, our primary objective must be to prevent them from entering in the first place."

The Toxics Act was created to meet this broad objective by identifying and preventing the unreasonable risks presented by toxic chemicals to health and the environment.

EPA intends to achieve this man-



date and we are taking a number of actions to assure that we do so:

- A strategy document for the Toxics Act implementation is being drafted and we expect to have a draft ready for public comment soon.
- We are developing a system to enable EPA to set priorities for selecting chemicals for action under the Toxics Act.
- We are evaluating the recommendation of the Interagency Testing Committee that priority consideration be given to the issuance of Section 4 testing rules for four individual chemicals and six categories of chemicals, and we are reviewing other chemicals for possible testing. In this context we are developing a regulation under Section 8(d) to require industry to submit results of relevant testing already conducted on those chemicals identified by the Interagency Testing Committee.
- Work on development of testing standards and rules for health and environmental effects is under way—these include standards for carcinogenesis, mutagenesis, teratogenesis, acute and subchronic toxicity, chemical fate and transport, and various environmental effects.
- Proposed guidance on Section 8(e)—reporting of substantial risk information—was published last September, and final guidance will be promulgated early this year.
- We expect to promulgate regulations for polychlorinated biphenyl marking and disposal by the end of 1977 and, by mid-1978, for implementing the first phase of the Act's ban on polychlorinated biphenyls.
- We will run a pilot program to provide funds for public participation in rulemaking in connection with the proposed polychlorinated biphenyl ban.
- We have begun the regulatory process on polybrominated biphenyls, with final action expected late next year.

- We are about ready to promulgate regulations on aerosol uses of chlorofluorocarbons; the regulatory process on other uses has just begun.

- We are preparing general rules to implement Section 8(c), on keeping records of adverse health reactions, and 8(d), on submitting health and safety studies, and we are developing an approach to other reporting under Section 8(a).

And, of course, we expect to promulgate soon the final regulations establishing the inventory of chemical substances under Section 8(b) of TSCA.

I believe that the inventory regulations represent a responsible compromise between EPA's need for information and our desire to limit the reporting burden imposed on industry.

With respect to production volume, for example, the final regulations will require reporting of production in broad ranges rather than in specific volumes. Similarly, we balanced the costs of identifying and quantifying certain chemical intermediates against the value of including these substances in the inventory. The final regulations will not require reporting of "isolatable intermediates," but only of intermediates that are intentionally removed from the equipment in which they are manufactured. We estimate this approach will result in significant savings to the industry, and especially to smaller manufacturers.

I know there has been much concern about the confidentiality of reported information. A number of industry comments on the repropounded inventory regulations suggested that trade secret information might be compromised. We believe that the regulations we expect to promulgate will provide adequate protection for selected industry information when confidentiality is requested. In addition, we are designing a system to insure that confidential industry data are stored in the most secure manner

possible; disclosure will be in strict compliance with Section 14, which sets criminal penalties for unlawful disclosure of industry data by EPA employees. The Agency will prosecute any acts of wrongful disclosure to the fullest extent of the law.

I know that many in industry are concerned about "reasonability" in the implementation of the Toxics Act. Some fear that EPA is incapable of pursuing its mandate in a responsible and rational way. I hope that they will be persuaded otherwise by the results of the regulatory process of the 8(b) inventory.

As a matter of fact, the Act itself includes a number of provisions to safeguard the industry from arbitrary and capricious government action. First, the law stipulates that EPA carry out its authority under the Act in a "... reasonable and prudent manner, and that the Administrator shall consider the environmental, economic, and social impact of any action ... under this Act." Furthermore, except for cases of imminent and unreasonable risk of serious or widespread injury to health or the environment, all major actions under TSCA—including the collection of information—must be carried out by formal rulemaking, and all final regulatory actions must be preceded by opportunities for public comment by interested parties.

EPA, too, has its own review, justification, and approval process that guides regulatory actions internally from inception to promulgation. This process provides a significant check on unreasonable or poorly analyzed regulatory actions under all of the Agency's authorities, including the Toxic Substances Control Act. □

Verdict on EIS

By Nan Stockholm

Environmental Impact Statements, popularly called EIS's, are at the center of a Federal administrative process designed to ensure the achievement of the Nation's environmental goals. The National Environmental Policy Act (NEPA) requires all Federal agencies to prepare statements which detail the potential impact of any proposed action—such as highway, nuclear power plant, or jet runway construction—falling under their jurisdiction that could significantly affect the quality of the human environment. The Council on Environmental Quality (CEQ) is currently considering changes in the EIS requirements to simplify and expedite this process.

Nan Stockholm is a student at Stanford University Law School and a former EPA student assistant

It's not surprising that over one hundred attorneys showed up at the Second Annual Conference on NEPA (the National Environmental Policy Act) sponsored by the Environmental Law Institute November 7-8 in Washington, D.C. What is surprising is that as many or more non-lawyers attended: business-people, Environmental Impact Statement writers, State and Federal officials from a variety of agencies and commissions, citizen group leaders, professors, and even a few students.

"Frankly, a lot more interest was demonstrated in the Conference than we had expected . . . and the interest came from a more diverse group than we had anticipated," commented one of the Conference's organizers.

The cross section of people attending the Conference illustrates how NEPA and the EIS process permeate many parts of American life. It was clear from listening to participants in the Conference that many people are struggling with problems raised by NEPA in many different contexts:

. . . the EIS writer who, within a short time and under a heavy workload, is trying to determine the "social impact" of a proposed Federal project, or to spell out a range of alternatives, some of which may not even be within his agency's purview.

. . . the Justice Department lawyer who is attempting to defend an agency's system for determining whether or not an EIS is required.

. . . the State utilities company official who must determine what the environmental impacts are for a new 300 mile-long power line stretching through urban, suburban, rural and undeveloped areas.

. . . the citizen group leader who is making an heroic effort to wade through thousands of pages of jargon and technical data which comprise part of the EIS for, say, a proposed nuclear plant in his community.

The two-day Conference consisted of six panels of experts who deal with NEPA and EIS's daily. Without going into detailed analyses of court opinions, or the various uses of the EIS in particular agencies, it is useful to review in general terms the main issues which provided lively debates, if no universal answers.

These issues were, first, the attitudes of the courts and Congress toward NEPA; and second, the EIS process itself: its predictability, timing, format, and general efficacy. The CEQ (Council on Environmental Quality) has recently focused on how the EIS process and the implementation of NEPA in general can be improved. Its actions will have an important influence on the impact of NEPA in the future.

The Courts

In general, the courts have upheld the applicability of NEPA to a wide range of "proposals for legislation and other major Federal actions significantly affecting the quality of the human environment." Courts have not been unanimous as to what tests should be used to determine "major Federal actions," but the *Environmental Law Reporter* notes that "often, only slight Federal involvement is sufficient to trigger the EIS mechanism." Court opinions have also attempted to define the term "proposal," which creates the need for an EIS. In general, however, this definition remains ambiguous, raising serious problems as to when an agency is merely contemplating a course of action or making a proposal.

In situations where the environmental impact of an action or proposal is unclear, a preliminary "environmental assessment" may be required to determine whether an EIS must be written. This process varies widely from agency to agency.

Courts have usually held that the scope of the EIS must reflect the scope of the proposed

action. Therefore programmatic, regional or national impact statements may be appropriate in some cases, although the agency is afforded a high degree of judicial deference in determining how comprehensive an EIS must be.

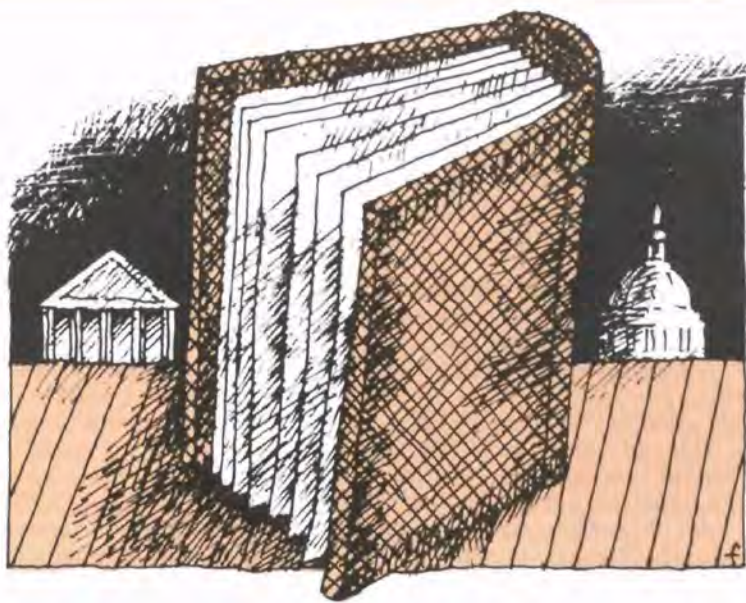
Congress

As far as Congressional attitudes, Richard Gutting, counsel for the House Subcommittee on Fisheries and Wildlife Conservation and the Environment, of the Merchant Marine and Fisheries Committee, reported that "NEPA is alive and well, and perceived by Congress to be on the right track." Along with many other panelists at the Conference, Gutting mentioned that many members of Congress would like to see the EIS integrated earlier and more fully into the decision making process. Gutting believed that other areas which Congress may soon focus on include more oversight of NEPA's procedural failings, the rights of private litigants under NEPA, the "heretofore ignored" provision of NEPA which requires an EIS as part of every proposal or report for legislation, and the need for additional training of EIS writers.

The EIS Process

In addition to reviewing the influence of the courts and Congress on NEPA, Conference participants scrutinized the EIS process itself. The inter-related issues of predictability, timing, format and general efficiency of the EIS were raised repeatedly by different parties in the EIS process.

For example, an industry representative stated that an agency official had told his firm that only an "environmental assessment" would be required for a certain project. Over a year later, the agency official told the firm that a more detailed EIS would be required. This created more delays and added hundreds of thousands of dollars of expense to the firm's project.



This example points out the need for predictability in the EIS process. In the words of Ned Cronin, director of the Environmental Impact Study Group of the Commission on Federal Paperwork:

The Federal Government owes to project applicants its best judgment of how long the EIS process will take, so that applicants can plan accordingly. Right now, once the process starts, all the applicant really has to go on is word-of-mouth information.

Predictability is necessary too, in regard to the kinds of data which should be included in the EIS, whether the EIS is prepared by an applicant, professional consultant, or the agency itself. As Nicholas Yost, general counsel for CEQ observed,

Through the questionnaires and hearings that CEQ has used to

solicit public opinion on new guidelines for EIS's, an extraordinary consensus has emerged. NEPA is viewed as beneficial for decisionmakers and good for the public interest, but everyone complained that the EIS process is cumbersome, and that it results in stacks of paperwork which no one reads.

Yost went on to explain that one of the objectives of the new EIS regulations which CEQ is preparing is to cut out so called "dandelion counts" which contribute nothing but length to the EIS.

Attorney William Cohen of the Justice Department and others observed that dandelion counts tend to pad statements, and to dilute meaningful analysis into pages of peripheral comments. Cohen felt that agency officials often include trivial items in the EIS because they fear that courts might require consideration of minutiae, that some special interest group might attack the EIS on a small point which the agency failed to cover specifically, or that a shorter EIS might be deemed inadequate per se.

Fred Anderson, executive director of the Environmental Law Institute, commented that environmentalists who brought suit in the early cases under NEPA were responsible, at least in part, for the idea that "bigger environmental impact statements are better," since courts often commented in those early cases on the "shocking brevity" or "superficial analysis" of an EIS. Anderson contends, however, that "There is ample room in short impact statements for courts to act in accordance with NEPA. If the EIS is succinct and analytical, in agreement with the CEQ guidelines, then the way is clear for discussion of the legal issues. The last thing one wants is for the Office of the General Counsel in an agency to dump everything but the kitchen sink into the EIS."

The overall efficacy of the EIS process in achieving the objectives of NEPA remains an open question. Sandra Rennie, former president of a private consulting firm, discussed the conflicts of interest which may arise when a government agency or applicant retains a consultant to prepare the EIS. The consultant may be private, or in some cases a State or local agency or municipal government. Particularly if the consultant has been retained by the agency in the past, or if the State or local government must depend on the federal agency in the future for other projects, the consultant may make a conscious or subconscious effort to present the project in the best possible light. Also, Rennie pointed out that unless consultants are involved in early stages of planning, an EIS becomes merely an afterthought tacked on to the proposal. When the applicant itself is preparing the EIS, this

creates problems, too. Rennie stated,

I'm the last person in the world to close out the developer of a project who knows best about many aspects of his project, but we must recognize that most often, the developer is exclusively limited to discussing alternatives within his power . . . and that is too limited a discussion in terms of NEPA.

Rennie and others at the Conference observed a similar conflict of interest under NEPA which requires agencies to consider alternatives not necessarily under the agency's own purview. Some agencies like the Environmental Protection Agency and Army Corps of Engineers have developed fairly good methods for doing this, while other agencies have not.

Besides conflicts of interests, another limitation on the efficacy of NEPA may be the extent to which NEPA and the EIS process influence decisionmakers. Dr. Helen Ingram, a political scientist with Resources for the Future, was pessimistic. "I am skeptical about the EIS process, because I don't believe that the essential information is getting to decisionmakers. Very often, NEPA is not applied to fundamental, far-reaching decisions. Instead, decisions are made by private actors on the basis of economic and engineering criteria, and then preparation of an EIS is contracted out to consultants who merely justify decisions. By that time the decisions are irreversible."

Ingram went on to say that in her opinion impact statements are overblown not because agency personnel fail to perceive what the real issues are, but because agency staff are protecting their own interests and are fearful of being challenged on minor points. She suggested, "A solution might be to make NEPA immune from lawsuits on procedural grounds."

Gus Speth, formerly an attorney with the Natural Resources Defense Council and currently a member of CEQ replied, "I agree that the EIS process must be improved to encourage shorter, more analytical statements that will be more useful to decisionmakers, but I couldn't disagree more strongly about eliminating judicial review of NEPA. That seems to me to be a draconian solution!"

As an alternative, Speth suggested that the new CEQ regulations will make NEPA and the EIS process more useful and important in the future.

The Role of CEQ

With the new authority and support which the Carter administration has given to CEQ, it is almost certain that CEQ will assume a stronger role in environmental policy making and new authority over the administration of NEPA.

President Carter's Executive Order 11991, issued in May 1977, directs the CEQ to:

Issue regulations to Federal agencies for implementation of the procedural provisions of [NEPA]. Such regulations shall be developed after consultation with affected agencies and after such public hearings as shall be appropriate. They will be designed to make the environmental impact statement process more useful to decision-makers and the public; and to reduce paperwork and the accumulation of extraneous background data, in order to emphasize the need to focus on real environmental issues and alternatives. They will require impact statements to be concise, clear, and to the point,

and supported by evidence that agencies have made the necessary environmental analyses. The Council shall include in its regulations procedures for (1) the early preparation of environmental impact statements, and (2) for the referral to the Council of conflicts between agencies concerning the implementation of [NEPA].

Extensive hearings were held by CEQ to solicit criticisms of the, NEPA process from all sectors, and a detailed questionnaire was widely circulated. Nicholas Yost, general counsel for CEQ, said that there was striking agreement among those attending the hearings. Yost related an example, "At one hearing an industry spokesman stood up and said, 'I'd like to adopt in full the statement just made by the Sierra Club representative.'" This indicates the extent to which industry, environmental groups, and agencies share views on the success of NEPA and the improvements needed in its administration.

According to Yost, the members and staff of CEQ are committed to making the needed reforms. Moreover, under the Executive Order, the CEQ will not be issuing guidelines, as in the past, but regulations which have greater legal weight. Although the CEQ regulations are still being refined and are soon to be circulated among agencies for review, Yost provided a broad outline of the areas the regulations will cover:

... reducing the length of the EIS, by eliminating "dandelion counts" and repetition that often results from overly strict adherence to the five subsections of NEPA; page limits may be set in individual cases.

... reducing delay by incorporating NEPA early in decision making, by devising a fair and prompt means of designating "lead" agencies, and by encouraging "scoping": early decisions by all interested parties as to what the EIS should emphasize.

... encouraging cooperation among agencies in early stages of EIS preparation, rather than a confrontation over a finished product, and the elimination of duplication among federal agencies and between federal and state and local agencies, by using joint statements.

... "tiering" of statements so that general issues are covered in program EIS's and need not be repeated in site-level EIS's.

The Council also plans to emphasize NEPA as a whole, not only the action-forcing provision of Section 102(2)(c), so that decisions will be made in accordance with the Act's intent, rather than the procedural forms required by NEPA. CEQ is also considering restrictions on those applicants who cannot provide an impartial analysis in an EIS due to conflicts of interest. Follow-up on mitigation measures listed in the EIS is another action that CEQ intends to emphasize.

Finally, CEQ has now moved to adopt procedures for handling inter-agency disagreements over proposed Federal actions that might have unsatisfactory environmental effects. These cases are referred to the Council by the Administrator of EPA (who is required to do so under Section 309 of the Clean Air Act) and other agency heads who find an action proposed by another Federal agency to be environmentally unacceptable. Although CEQ has had authority to handle these disagreements since 1970, it has only recently issued interim guidelines for receiving and handling referrals. More formal referral procedures will ultimately be made part of the NEPA regulations.

Another important indicator of CEQ's authority is the extent to which CEQ influences Execu-

tive decision-making. Charles Warren, an attorney and former member of the California Assembly where he was chairman of the Resources, Land Use, and Energy Committee, is the new chairman of CEQ. Warren, unlike his predecessor at CEQ, attends Monday morning Cabinet meetings. CEQ also prepares a weekly status report of environmental policy issues for the President, and provides him with detailed analyses and recommendations on issues requiring a Presidential decision.

At the Conference, Warren stated that CEQ has been given many more substantive responsibilities, and that the staff has begun to develop Administration programs in several areas. Studies will look at environmental paths to economic recovery, and ways in which we can make a transition to renewable energy resources. CEQ is also developing recommendations for Federal actions in Integrated Pest Management, and it is leading an effort to coordinate Government toxic substance control programs. Other topics receiving attention from CEQ are the inner city environment (an important new initiative for the Council) and recycling strategies.

Perhaps Warren's observation best sums up the results of the Conference on NEPA. He said, "Although the EIS is clearly not going to win the contest as the Government's most popular document, more and more executives are endorsing it as an important decision-making tool." □

Environmental Industry Council

Pollution control has spawned a growing new industry.

It is represented by a new industrial association, the Environmental Industry Council. This organization was formed by a group of industrialists after they met in Washington two years ago at a meeting called by the Federal Government.

The people who met in December 1975 at the invitation of Russell Peterson, then chairman of the President's Council on Environmental Quality, seemed to represent an industrial hodge-podge. Their companies' products ranged from electronic instruments to bulk chemicals, from glass tubing to bulldozers, from dust bags to pumps.

But they had one thing in common: all their products were needed in the growing industry of environmental control.

Several months after the CEQ conference, 13 of the companies became founding members of the new industrial association. They were joined by three older trade associations representing manufacturers of water treatment equipment, gas cleaning apparatus, and emission control devices. The Council elected a board of directors—one member from each of the founding firms—with John Blizard of the Corning Glass Works as chairman, and opened a modest office in downtown Washington.

John Adams is executive director. He has a two-woman professional staff and clerical help.

Last February the Council held its first annual conference, a three-day session in Washington attended by 166 persons representing 81 corporations and industry groups, 11 government agencies and several universities. Speakers included William Ruckelshaus, former Administrator of EPA; White House Counsel Stewart Eizenstat; and Herman Kahn, author and director of the Hudson Institute.

"Few people realize how big the environmental industry is," said John Adams. "It's big business already. It's growing faster than the total national economy, no matter how you measure it. And it's growing faster

than almost any sector of the economy you can name."

"Russell Peterson, former chairman of the CEQ, was one of the first to recognize that pollution control was a distinct and growing enterprise and that the environmental movement was creating jobs and real wealth. There was a widespread impression that cleaning up industrial pollution was causing numerous plant closures and job losses."

The few job losses and displacements that have been blamed, in part, on environmental regulations, he said, have been overwhelmingly counterbalanced by the jobs created through the increased business in equipment, products, and services required to meet the regulations.

A Council brochure quotes former EPA Administrator Russell E. Train: "We have all heard it suggested that environmental programs will stop or slow down economic growth. Just the opposite is the case. It is pollution, not its control, that limits growth."

Adams acknowledged that some of the Council members themselves have been conspicuous industrial polluters in the past and, indeed, may not yet have fully cleaned up their own operations.

Producers of basic chemicals sell thousands of tons of chemicals each year to purify drinking water and treat sewage, but they are likely to have problems controlling air and water pollutants from their own plants.

The Council's board chairman represents an insulating materials company that is a leading producer and processor of asbestos, which can cause cancer when its fibers are inhaled.

Makers of pipe, pumps, valves, and fittings for water treatment works and manufacturers of bulldozers, conveyors, hammer mills, and other heavy equipment used in solid waste handling have pollution problems similar to those of other heavy industry.

These Council members know they are in the middle of the "physician, heal thyself" paradox. But they realize that the medicine they are taking is also the product they are selling to a growing and profitable market.

The environmental control industry is not new. It started about ten years ago with the increasing public and governmental concern over air and water pollution. Even then it had roots in existing industries: dust collection from factory processes and smoke stacks, sewage treatment, water purification, trash collection and disposal, and others.

The size of the environmental industry has been variously estimated, and no single authority is universally accepted. Arthur D. Little, Inc., a consulting engineering firm, estimates that \$10 billion was spent last year to control stationary air emissions and wastewater effluents. About half of

this sum was investment in new abatement equipment and facilities.

Control of automobile emissions required an additional \$2.5 billion expenditure last year. Collection, processing, and disposal of garbage and trash took approximately \$4 billion, but only a small portion of this can be considered a "new" market for the recovery of reusable materials and energy from solid waste.

The Little firm predicts that annual growth in the next few years for air pollution control will be about 14 percent and for water pollution control 17 percent. "Allowing for inflation, this is approximately two and one-half to four times the anticipated growth in the Gross National Product."

The Council's second annual conference will be held Feb. 22-24 in the Hyatt-Regency Hotel in Washington. EPA Administrator Douglas M. Costle and CEQ Chairman Charles Warren will be among the speakers. Adams said he expected more than 200 persons from industry, government agencies, and other organizations would attend.

Council membership is limited to "companies engaged in manufacturing environmental protection equipment or material primarily for sale to others," and to compatible industrial or trade associations. Dues are \$2,500 a year, a figure believed to be low enough to permit relatively small companies to join. The "primarily for sale to others" requirement, Adams said, keeps out firms, like auto makers, whose pollution control equipment (for example catalytic converters) is usually purchased from others and forms only a part of the firm's main product.

There are now 23 companies and three trade associations in the Council. Most of the member companies make equipment to control air pollution from stationary sources: scrubbers, precipitators, dust collectors; and piping, pumps, and filters for water treatment. About four member firms make catalytic converters for the control of auto exhaust emissions. Several make basic chemicals used in pollution control. Two make heavy motorized equipment for handling solid waste.

Makers of instruments for monitoring and process control are represented by a trade group, the Manufacturers of Emission Controls Association. Scores of other firms share Council membership through the Industrial Gas Cleaning Institute and the Water and Wastewater Equipment Manufacturers Association.

The Council's purpose, frankly self-interested, is two-fold: first, to promote "coordinated, rational and consistent" government policies that affect the industry, and, second, to enhance the "knowledge, understanding, and reputation of the industry among policymakers, opinion leaders, other industries . . . and the media."

Phyllis Kierig

Scrubbing Coal

Coal—the abundant but tarnished black gold of the utility industry—is being scrubbed clean in Gary, Indiana.

In the process, harmful sulfur dioxide gases are being converted to valuable sulfur that can help offset the cost of the operation. The conversion of these gases to a commercially useful product is a major technology breakthrough that EPA has been working on in cooperation with industry.

The new process is now being tested in a one-year demonstration at Northern Indiana Public Service Company's Dean J. Mitchell electric generating station in Gary, Indiana. The demonstration is an \$18 million joint project of EPA's Research and Development laboratories and NIPSCO. EPA is funding \$5.5 million of the costs and NIPSCO \$12.5 million.

The new process is important because it eliminates waste disposal problems associated with earlier scrubber systems while producing a pure product for the marketplace. Sulfur is used to make a variety of products from fertilizers to pharmaceuticals.

Stephen J. Gage, EPA Assistant Administrator for Research and Development, announced the development.

"The system being demonstrated at Mitchell Station differs from other scrubber systems being used today," he said. "As a by-product of reducing sulfur dioxide air pollution from coal combustion, it produces marketable sulfur rather than throw-away sulfurous sludge. The production of large quantities of useless sludge has often been cited by utilities as a major impediment to the use of scrubbers."

Gage noted that sulfur dioxide was one of the first pollutants identified with harmful effects to human health and to materials. "Developing the methods to control sulfur dioxide has received high priority from EPA," he declared. "The successful completion of the performance test program and the initiation of

(Phyllis Kierig is a writer-editor, EPA Region V, Office of Public and Inter-Governmental Affairs.)



the one-year demonstration are milestones in the decade-long struggle to establish methods to control sulfur dioxide air pollution."

Wade H. Ponder, a chemical engineer with EPA's Industrial Research Laboratory at Research Triangle Park and project officer for the demonstration, explained that the demonstration plant will produce 25 tons of sulfur and 3 to 4 tons of sodium sulfate purge while cleaning 12,000 tons of flue gas every day. The sulfur will be used by a nearby acid manufacturing plant to produce sulfuric acid. The sodium sulfate

will be sold to the pulp and paper industry. Revenue from the sale of these two products will partially offset the operating costs of the system.

The operating cost of the process is estimated at \$200,000 a month. The market price to the two resalable chemicals is expected to be about \$20,000 a month or 10 percent of operating costs.

During the test period, sulfur dioxide removal efficiencies exceeded the 90 percent performance requirement. On several occasions, two-hour averages of 93 percent were achieved and daily averages of more than 91 percent were obtained on three days.

A sulfur purity of 99.5 percent was required. Testing of samples drawn during the test period showed the sulfur to be 99.9 percent pure.

The system, which combines the Davy Powergas/Wellman-Lord Sulfur Dioxide Recovery Process and the Allied Chemical

Sulfur Dioxide Reduction Process, is being tested to compare it with other scrubber or coal cleaning processes.

The improved process at the Mitchell plant takes flue gas from the burning coal and blows it through a device where it is cooled by a water spray, then put into a three stage absorber where it is reheated and the sodium sulfate collected. The flue gas then passes through a condensation system where the sulfur is removed and the sulfur dioxide vapors are treated before the remaining steam is allowed to filter into the air.

Dean H. Mitchell, chairman of Northern Indiana Public Service Company said, "There is still another cost that must be factored into this project before its performance can be completely evaluated. That is, the energy required operate this plant. It will reduce the electric power available to our customers from this one generating unit some 10,000 to 15,000 kilowatts.

"Application of this system of flue gas desulfurization to all our coal fired units would reduce electric power available to our customers by some 250,000 kilowatts. The cost of constructing a power plant to replace the 250,000 kilowatts required to operate desulfurization plants on all our coal fired units would be approximately \$150 million.

The increased cost in operation is offset by the elimination of waste hauling fees. The entire process fits EPA's policy of promoting recycling and reuse of waste materials. Much of today's pollution can be eliminated if the waste product can be reused.

Burning coal results in gases that can produce sulfuric acid rains. Sulfur oxide also can damage materials such as paint and metal, and affect respiration in humans. Congress has recognized the threat to public health and included in the Clean Air Act Amendments last summer provisions requiring the installation

of clean-up equipment on all coal burning facilities.

Scrubbers are one of three mechanical means to achieve the clean-up. Three technologies being studied at the Industrial Environmental Research Laboratory in Research Triangle Park, North Carolina, are: Physical or chemical treatment of fuels to remove pollutants prior to the combustion process; advanced combustion technologies to remove pollutants during the combustion process; and post-combustion control by flue gas desulfurization. Of the three approaches, flue gas desulfurization appears to EPA to hold the most promise for near-term applications, Gage explained. Wellman-Lord is a flue gas desulfurization process.

The use of flue gas desulfurization or scrubbers means potentially more jobs for midwestern and eastern coal miners of high sulfur coal.

Before last year's clean air act amendments were enacted, the utility industry had been using low sulfur coal as a way to meet Federal health standards.

Such coal comes primarily from the coal fields of the West.

The costs of scrubbers and other mechanical cleanup systems can be balanced by the improvements to health of surrounding residents and the creation of jobs in the mining and heavy equipment fields.

Scrubbers are one of the ways the Nation can move towards energy self-sufficiency because of abundant coal reserves.

The Wellman-Lord system demonstrates one way that clean-up technology can work efficiently and profitably. □

A listing of recent Agency publications and other items of use to people interested in the environment.

General Publication

Single copies available from Alice White, Office of Legislation, (A-102), US EPA, Washington, D.C. 20460. (202) 755-0890.

Progress in the Prevention and Control of Air Pollution in 1976.

This 145-page document is the annual report of the EPA Administrator to Congress. It covers air quality trends, the status of State implementation plans, control of stationary source emissions, control of mobile source emissions, and research in monitoring instrumentation and quality assurance.

Federal Register Notices

Copies of Federal Register notices are available at a cost of 20 cents per page. Write Office of the Federal Register, National Archives and Records Service, Washington, D.C. 20408.

Pesticides.

EPA announces rebuttable presumption against registration of products containing maleic hydrazine. pp. 56920-935. In the October 31 issue.

Municipal Sludge Management.

EPA publishes technical bulletin. pp. 57420-427. November 2 issue.

Pesticides.

EPA gives notice of intent to cancel the registrations or change the classifications of pesticide products containing dibromochloropropane (DBCP.) pp. 57543-544. November 2 issue.

Air Programs.

EPA incorporates changes into regulations required by the 1977 Clean Air Act Amendments, pp. 57459-462. November 3 issue.

Regulations Under Consideration.

The following rules are being developed by EPA. The Agency encourages public comment, and EPA contacts and proposed issuing date are listed so that

interested persons can make their views known. These rules will be issued in February, 1978:

Review of the National Ambient Air Quality Standard for Photochemical Oxidants.

EPA may modify the standard on the basis of new criteria to protect community health and welfare, contact John O'Connor (MD-12), EPA, Research Triangle Park, N.C. 27711, (919) 541-5355.

Revised National Primary Drinking Water Regulations.

Regulations to establish treatment techniques or maximum contaminant levels for contaminants in drinking water, contact Joe Cotruvo (WH-550), EPA, Washington, D.C. 20460, (202) 755-5643.

Coming Events

For more information contact Sue Sladek, Office of Public Awareness (A-107), EPA, Washington, D.C. 20460, (202) 426-4188.

Administrator Douglas M. Costle will speak at a conference entitled "Environmental Mediation: An Effective Alternative," January 12 at the Center for Environmental Mediation, Palo Alto, Calif.

Administrator Costle will address a meeting on the implications of the Delaney Clause sponsored by the National Center for Toxic Research and the International Academy of Environmental Safety at the Mayflower Hotel, Washington, D.C. on February 5.

A public meeting to discuss strategy for implementation of the new Solid Waste Disposal Act Amendments will be held at the Ramada Inn in Rosslyn, Va., a suburb of Washington, D.C. from 8:30 a.m. to 5 p.m. on January 19. Meetings on authorization by EPA of State hazardous waste programs will be held in Boston, New Orleans, and Seattle during late January and early February at dates to be announced later.



Merna M. Hurd has been selected to be Director of EPA's Water Planning Division, which operates under the Office of the newly-appointed Deputy Assistant Administrator for Water Planning and Standards, Swep Davis, Jr.

Along with its other responsibilities, the Division is charged with assisting in planning efforts for local water resources man-

agement. Hurd's experience includes service as Administrator for the New Castle County, Del., Areawide Waste Treatment Management Program (commonly referred to as a 208 planning agency).

While working with the New Castle group, Hurd established a management process for maintaining and improving area water quality, and assisted in the preparation of the State's Clean

Water Plan. She also helped in the development of a plan for major drinking water companies to provide adequate supply while decreasing energy consumption.

Originally from Lexington, Neb., Hurd received her BS degree in civil engineering in 1964 from the University of Nebraska, where she earned an MS in sanitary engineering in 1969.

Dr. Roy Albert of the Institute of Environmental Medicine, New York University Medical Center, has been named Health Advisor by EPA Administrator Douglas M. Costle.

"Dr. Albert is one of the leading authorities in the field of environmental medicine and particularly in the assessment of



health risks from carcinogenic substances," Costle said. "He is fully familiar with the health research programs at EPA as the result of his service in 1975-76 as Deputy Assistant Administrator for Health and Ecological Effects."

In addition to his new duties, Albert will continue to serve as



David R. Andrews has been named Legal Counsel and Special Assistant to EPA Deputy Administrator Barbara Blum. In his new position, Andrews will provide legal advice on all formal proceedings as well as Congressional statements and testimony. He will also be responsible for coordinating an urban policy and

an Indian policy for the Agency.

"Dave's experience in the California Regional Counsel Office will be a tremendous help to me," Blum said. "I will rely heavily on his sound legal advice in helping me with Agency matters."

Andrews was the Regional Counsel and principal legal advisor in Region IX from 1975 to 1977.

Before joining the Agency, he was an attorney in private practice in San Francisco from 1971 to 1975. From January 1974 to August of that year Andrews was a visiting Professor of Law and Max Planck Fellow in International Law at the Max Planck

Six gold medals were awarded to EPA employees at the Seventh Annual Awards ceremony held recently in Washington. Five went to individuals and the sixth was given to an environmental impact statement team.

The Gold medals for exceptional service went to Frank Corrado, Director of Public and Intergovernmental Affairs, Region V, for his work in public

affairs; Rebecca W. Hanmer, Deputy Regional Administrator, Region I, for her work with review of programs, grants, and regulations; John E. Hardaway, Chief, Research and Application Branch, Office of Energy Activities, Region VIII, for his work in assessing the impact of development of mineral resources; Alexander D. Hicks, Director of Civil Rights, Region X, for his work with minority businesses

and contracts; and David A. Ullrich, Chief, Case Development Section, Enforcement Division, Region V, for his work with technical data used in enforcement cases.

A Group Award Gold Medal went to the Environmental Impact Statement team, Water Division, Region VIII; J. William Geise, Jr., Robert Doyle, and

John N. Philbrook for their preparation of the Denver regional environmental impact statement.

William M. Upholt, Director of Health Effects and Science Policy, Office of Toxic Substances, received a Distinguished Career Award for his exceptional scientific and management ability and contributions to the protection of health and the environment.



Frank M. Corrado



Rebecca W. Hanmer



John E. Hardaway



Robert Redford shed his familiar role as a leading actor recently to address EPA's Office of Public Awareness as a ski-area owner and Sewer Commissioner from Provo Canyon, Utah. "I'm very proud of having been elected to that job," he noted, "although some people say it's a title I richly deserve."

The meeting, sponsored by the Public Awareness Office's

Outdoor/Recreation Team, was part of a weekly OPA discussion series in which representatives from various segments of the public exchange views regarding environmental matters with staff members.

Redford, an active skier—as his film "Downhill Racer" testifies—is one of the principals in a resort development in Utah called Sundance. His concerns

in keeping that area environmentally sound include wastewater treatment, water resources, land use, energy conservation, and air quality. "I don't know if it's possible to run a ski-lift by solar power . . . but I want to find out," he said. After his talk with the OPA staff, Redford met with EPA Administrator Douglas M. Costle.

chairman of the Agency's Carcinogen Assessment Group, which he helped to organize. The CAG is an advisory body which assesses the possible health risk of all suspect carcinogens entering the environment for which EPA has regulatory authority. He will also participate in joint efforts between EPA, the Food and Drug Administration, the Occupational Safety and

Health Administration, and the Consumer Product Safety Commission in developing common approaches and policies for addressing public health issues.

After receiving his degree in medicine and his post-doctoral training in internal medicine, Albert pursued a career in aca-

demical research and teaching. His major research interests have been in the field of cancer and pulmonary disease including laboratory and epidemiological studies resulting in over 80 scientific publications. He has participated in numerous governmental advisory activities, including a series of panels at the National Academy of Science.

Institute for Comparative Public Law and International Law at the University of Heidelberg, West Germany. He received a BA in Economics in 1968, and a law degree in 1971 from the University of California at Berkeley. He was an editor of the *California Law Review*.



Howard J. Lamp'l, chief of EPA's Region III Environmental Emergency Branch, has been elected chairman of Committee F-20 on Spill Control Systems of the American Society for Testing and Materials.

Committee F-20 develops the Society's standards on performance, durability, and strength of systems for the control of spills of oil and other substances, and does related research.

The Society is the world's largest source of voluntary consensus standards for materials, products, systems, and services. Headquartered in Philadelphia, it claims some 26,000 members.

Lamp'l, a native of Atlantic City, N.J., attended the University of Vienna (Austria) and Northwestern University. He has published many papers and articles on oil spill prevention, cleanup, and related subjects.

Silver Medals for Superior Service were awarded to William A. Brungs, Environmental Research Lab, Duluth, Minn.; Charles L. Gray, Jr., and Karl H. Hellman, Office of Mobile Source Air Pollution Control, Ann Arbor, Mich.; John Y. Hohn,

Enforcement Division, Region X; Chester E. Kirk, Environmental Research Lab, Corvallis, Ore.; Lee A. Mulkey, Environmental Research Lab, Athens, Ga.; Edward J. Nime, Office of Administration, Cincinnati, Ohio; Gilman D. Veith, Environmental Research Lab, Duluth, Minn.; James D. Vieregg, Enforcement Division, Region VII. Silver Medal Group Awards went to

the Effluent Guidelines Analytical Methods Work Group, the Environmental Quality Indicators Task Force, Region X; and the Standards and Regulations Group, Office of Noise Abatement and Control.

Public Health Service Meritorious Service Medals were awarded to John J. Henderson,

Region VI; John R. O'Connor, Research Triangle Park, N.C.; Charles E. Rodes, Research Triangle Park, N.C.; Jon P. Yeagley, Region VIII; and Donald E. Gardner, Research Triangle Park, N.C.



Alexander D. Hicks



David A. Ullrich

A small business may have a limited credit history and possible cash flow problems. Consequently, it is often unable to obtain long-term, low-interest-rate financing. Add to this the high cost and often nonproductive nature of required pollution control equipment plus the relatively higher costs of smaller firms due to the economies of scale, and financial burdens can become hardships.

But small businesses can now finance pollution-control equipment in exactly the same way larger businesses do—through the scale of tax-exempt bonds issued by a State or municipal authority. The program is a new type of assistance by the Small Business Administration (SBA), in cooperation with commercial banks and State agencies. It is designed to help small business obtain long-term (20-25 years), low-interest-rate financing for their pollution control needs.

About \$2.6 billion such bonds were extensively utilized by big business in 1976. The bonds are issued by a public entity. Repayment is based solely on the credit of the business. The bonds are then sold to the public by an underwriter. Periodic payments to cover principal and interest are made by the business to a trustee who uses those funds to pay the interest to the bondholder and redeem the bonds as they mature.

The first such tax-exempt Industrial Pollution Control Revenue Bond backed by the United States Government through the Small Business Administration has just been issued in California. The bonds were issued by the California Pollution Control Financing Authority for just over \$5 million and with a net interest cost to the firms of 6 percent. At a bank, such a loan could run as much as 11 percent. For some small businesses, therefore, this new program could mean the difference between continued solvency and closing.

Legislation passed in June of 1976 authorized the SBA to issue an unqualified guarantee of 100 percent of the payments of rentals or other amounts due under qualified contracts with respect to planning, design, financing, or installation of pollution control equipment.

The pilot program which began in California took into

account various industry segments having extensive pollution control problems. The initial Pollution Control Revenue Bond included an apple growers' cooperative association, a leather tanning company, a manufacturer and distributor of cheese and milk products, a timber business, an agricultural cooperative association, a metal plating works, and a smelter and refiner of copper and bronze scrap. A number of States are awaiting similar programs. Illinois, New York, Pennsylvania, Arkansas, Ohio, and Missouri have expressed an interest to participate in this program.

Tax-exempt interest for those who purchase the bonds results in lower interest costs to the business financing pollution control equipment. There are also other advantages, such as investment tax credit and accelerated depreciation.

The Environmental Protection Agency is pleased to see SBA developing this new program for small business. It is estimated that roughly 750 small businesses accounting for nearly \$300 million will be taking advantage of this program, and many more are eligible, such as businesses affected by new pretreatment regulations and many dischargers into waterways who hold Federal permits.

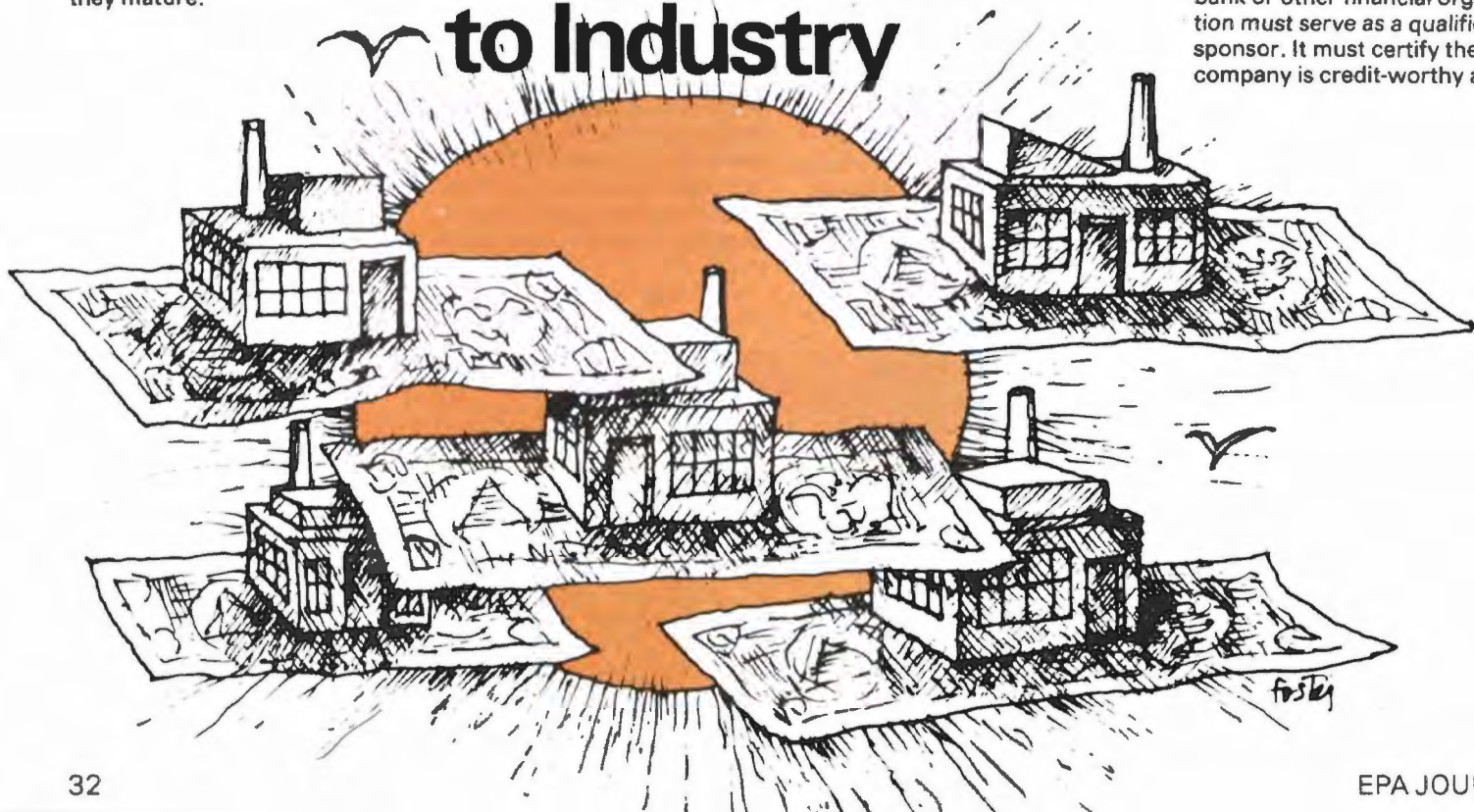
A small business concern for the purpose of the pollution control guarantee assistance is one which, together with its affiliates, is independently owned and operated, is not dominant in its field of operation, does not have assets exceeding \$9 million, does not have net worth in excess of \$4 million, and does not have an average net income—after Federal income taxes—for the preceding two years in excess of \$400,000 or qualifies as a small business concern under Title 13 of the Combined Federal Register. Any concern primarily engaged in the operation of a farm is classified as small if its average annual receipts for its preceding three fiscal years do not exceed \$1 million.

To be eligible, in addition to the size standards mentioned earlier, a small company must be under an order to meet Federal or State air or water quality standards, and at an operational or financing disadvantage with other businesses. Also, the pollution control facilities cannot generate a profit. The applicant must have been in business at least five years and show a profit on average in three of the last five years. His cash flow must be sufficient to meet the terms of the bond.

To get the SBA guarantee, a bank or other financial organization must serve as a qualified sponsor. It must certify the company is credit-worthy and

By Sheldon
Sacks

Loans to Industry



show that other long-term financing either isn't available or that it would impose a severe hardship.

Unlike the normal procedures involved in obtaining a loan, tax-exempt bond financing by nature necessitates substantial additional costs such as bond counsel fees, SBA's guarantee fee, attorney's fees, trustee and paying agent's fees, required escrow deposit fee, and application fees for both SBA and the State Issuing Authority. These costs are estimated to add between one half percent to 1 percent to the small business' financing cost. Most financing experts agree that the most favorable interest rate for bond financing is generally available on larger issues. Because of this, financing for amounts below \$150,000 can be uneconomical for a small business.

For smaller sums the small business should consider the Water Pollution Control Loan Program. This loan program offers eligible small businesses loans at 6-5/8% interest with up to 30 years to repay the loan. The loan program was initiated to provide loan assistance to those small businesses who would suffer a substantial economic hardship in order to meet the requirements established under the Federal Water Pollution Control Act. The loans are provided when commercial loan sources are unavailable or can only provide part of the required loan. An EPA certification is required, which states that the equipment or process for which funds are being made available is necessary and adequate to meet the pollution control requirements placed upon the applicant.

For more information on the Pollution Control Revenue Bond program the reader should write to SBA, Office of Community Development, 1441 L Street, N.W., Washington, D.C. 20416.

For more information on the Water Pollution Control Loan program and a free brochure entitled *Financial Assistance Programs for Pollution Prevention and Control Available through the Federal Government* write to Sheldon Sacks, EPA, Water Economics Branch, WH-586, 401 M Street, S.W., Washington, D.C. 20460. □

Paper and Steel



Studies of the economic effects of pollution control on two important U.S. industries show that they must make substantial investments in the years ahead for environmental clean-up.

The first study, dealing with the pulp and paper industry, concluded that "on balance, the economic impacts of the studied regulations on the paper industry and on the economy as a whole are relatively small."

The second, which examined the iron and the steel industry, noted that pollution controls would have only a small impact on steel prices and energy requirements for steel production, but warned of potential capital raising problems.

The studies were both done for EPA's Office of Planning and Evaluation as part of a larger program sponsored by the Agency to assess the economic impact of its regulatory programs.

The two industries are especially important because both are heavy users of water. The paper industry, for example, accounts for 37 percent of total industrial consumption of fresh water in

processing materials in the United States. Most of this water is used for processing wood pulp to produce paper and paperboard. Wastewaters from the industry contain large loadings of bio-chemical oxygen demand (BOD), suspended solids and color, as well as small concentrations of such troublesome pollutants as chlorine and mercury.

The iron and steel industry also generates significant quantities of pollutants, including particulates and sulfur oxides, carbon monoxide and hydrocarbons into the air, and in wastewater it must control a range of pollutants including suspended solids, phenols, oil and grease, cyanide, ammonia, sulfide, fluoride, nitrate, and heavy metals. EPA studies show that nearly nine billion pounds of such pollutants are generated each year by the industry, although much is removed before the effluents are discharged into waterways.

The study of the pulp and paper companies, which was done for EPA by Arthur D. Little, Inc., noted that by 1975 the industry had made substantial progress toward complying with existing environmental regulations. However, it emphasized that the industry still faces large capital expenditures in environmental clean-up through 1983. Water pollution control will account for about 76 percent of these total direct capital costs.

The estimated capital costs for compliance with environmental laws at the time the Little study was made totalled about \$4.8 billion for water clean-up between 1975 and 1983 for the pulp and paper industry. Air pollution controls would cost about \$1 billion and other controls to comply with noise regulations set by the Occupational Safety and Health Administration would cost \$55 million. The latter estimate assumes that the industry would use engineering and administrative controls to achieve compliance with a noise level limit of 90-dBA, a standard proposed by OSHA. The noise regulations would apply equally to both existing and new plant capacity.

Two levels of control for the existing pulp and paper industry

were assessed in the survey. The first was the cost of compliance with the "best practicable control technology currently available" (BPT) which was required in the original 1972 Act for 1977. The second was the control using "best available technology economically achievable" (BAT) required for 1983.

The minimum standard that industry must meet for conventional pollutants is the 1977 requirement for "best practicable technology."

The study of the integrated iron and steel industry, performed for EPA by the firm of Temple, Barker and Sloane, Inc., concludes that the industry faces \$6.8 billion in capital outlays for air and water pollution control between 1975 and 1983. The total needed to modernize operating facilities and expand them during the same period will be \$27.5 billion. However, the full cost for pollution control including operating expense, if passed on in selling prices, would increase the price of steel in real terms only 4.6 percent by 1983, according to the study.

The foremost problem facing the industry is the need for substantial financing for expansion of capacity and modernization, and pollution control. The industry's profitability in recent years, with the exception of 1974, "has seriously lagged the all-manufacturing averages," the study pointed out, affecting the ability of steel companies to raise capital through stock issues. An attempt to meet financing requirements entirely through bond issues would have an adverse impact on current bond ratings of steel companies, and therefore heavy debt financing of this type would be "highly undesirable," according to the study.

In its summary, the study declared that while financing both expansion and pollution control requirements may be difficult for the steel industry, "the task is manageable." To do so, the industry must be able to pass through increased costs related to these requirements, it concluded.

Copies of the studies are being made available by the National Technical Information Service, Springfield, Virginia 22151. □

Around the Nation

1 REGION

Merit Award Winners

Region 1 has announced the names of 11 winners of its annual Environmental Merit Awards. The winners are: Dr. Evelyn Murphy, Secretary of the Executive Office of Environmental Affairs for Massachusetts, for her efforts on behalf of the environment; Mrs. Martha Stone of Wellesley, Mass., former Commissioner of the Wellesley Board of Public Works, for her efforts to promote recycling; Elmer Raymond of Plymouth, Mass., Plymouth Conservation District Supervisor, for his efforts to reduce agricultural water pollution; Cynthia Thomas, Norfolk, Mass., Director of the Stonybrook Center and Wildlife Sanctuary in Norfolk, for her work with pesticide use studies; Arthur Stone of Williamstown, Vermont, Vice Chairman of the Vermont State 208 Water Quality Board for his environmental education activities; Julia Mannarino of the Connecticut Citizen Action Group, Hartford, Conn., for her efforts to promote transportation control plans; Lawrence Schaefer, of the Environmental Education Center, New Haven, Conn., for his efforts in environmental education; Joseph Struzziery, Executive Secretary of the Utility Contractors Association of New England for his efforts to promote cooperation between the private and public sectors in water pollution control; C. Frank Velkas of Bennington, Vt., for his many actions which helped lead to the initiation of corrosion control in Bennington's drinking water; John Leaning of Dudley, Mass., a former reporter for the Benning-

ton Banner, Bennington, Vt., for his accurate and detailed accounts of the problem of lead in drinking water in his community; the Maine Citizens for Returnable Bottles for their efforts in coordinating efforts aimed at the passage of the Maine Returnable Bottle Bill referendum and for their efforts to educate Maine citizens about solid waste issues.

2 REGION

Monitoring Technique

Region 2 is testing a new technique that uses aquatic animals to study the effects of pollutants in the receiving waters of industrial plants and municipal dischargers. EPA hopes to use this biomonitoring to set levels for combinations of pollutants in discharge permits. A 38-ft. mobile laboratory van contains the equipment for freshwater and marine testing. This includes a 500-gallon tank of upstream water, acclimation chambers where fish get used to the water to be tested, and temperature controlled mixers and circulators. The dilution equipment delivers various concentrations of waste effluent to exposure chambers containing native aquatic life. In Freehold, N.J., for example, hundreds of bluegill fish were exposed to different concentrations of effluent for 96 hours to determine acute toxicity levels.

3 REGION

Bay Group Gets Grant

Region 3 has awarded a \$248,158 grant for public participation training to the Citizens Program For The Chesapeake Bay, Inc., to carry out public education and citizen involvement activities for the Chesapeake Bay area. The grant is part of a program created to conduct an in-depth water quality study of the Bay in response to legislation sponsored by Senator Charles McC. Mathias (R-Md.). Regional Administrator Jack J. Schramm said, "The potential for the Chesapeake Bay Program to make significant contributions to the management and protection of the Bay is evident. The first step towards achieving our goal is to develop a close and continuous working relationship among managers, scientists, and the public. The timing and size of this grant demonstrates our commitment to this philosophy." Activities under the grant will include: identification of Bay users and their needs, creation of a Citizens Steering Committee to assist in program development, preparation of a public education and information program, and conducting public forums and workshops in the Bay area.

York River Plant

A Final Environmental Impact Statement for the York River, Va., Wastewater Treatment Facility has been issued by Region 3. It recommends a 15-million gallon per day plant at a previously proposed site at Seaford, Va. south of Yorktown, that would accommodate projected growth of the area until 1997. The environmental

impacts of the plant were found to be minimal compared to the detrimental effects of failing septic tank systems and the severe economic impact of a construction moratorium. The EIS found that the Seaford site offered substantial savings over two alternate sites with no substantial loss of water quality. The statement also recommended that a sludge composting study be started instead of using incineration.

4 REGION

Sewage Permits

Region 4 has issued water pollution control permits for nine Alabama sewage treatment plants, which Agency officials say will allow for continued orderly growth in the Birmingham area while reducing pollution discharge into local waterways. Controversy over the permits drew over 1,000 people to a public hearing chaired by Regional Administrator John C. White last September 21. In issuing the permits White said, "I feel we have reached limitations in the permits which will allow the continued, orderly growth of Birmingham and Jefferson County, while advancing our efforts to reduce and eliminate the discharge of pollutants into the local waterways." He added that public participation in the permit process resulted in changes to all nine permits, and in six cases the alterations were major. Much of the public interest concerned the permit limitations for the Cahaba River Treatment Plant, on a river that is under study for inclusion in the Nation's wild and scenic river system.

5 REGION

Labor Workshops

Region 5 and the Environmental Affairs Committee of Local 1010 of the United Steelworkers of America held four workshops last November and December to discuss jobs and the environment with labor communities in Illinois, Indiana, Michigan, and Ohio. The workshops were held with Local 65, Local 1010, and Local 1299 of the United Steelworkers and with the Retail Clerks.

6 REGION

Emissions Offset

Regional Administrator Adlene Harrison and Louisiana Governor Edwin W. Edwards have discussed the construction of a new General Motors plant in Shreveport. Their major concerns were the hydrocarbon emissions from the new plant and maintaining air quality while providing for industrial growth and economic development. Pollution from the new plant will be offset by emission reductions at other facilities. General Motors must now submit a control plan to achieve the lowest possible emission rate. Mrs. Harrison said, "As long as lines of communication are kept open, solutions can be cooperatively worked out."

Hudson Foods Agreement

EPA and the Justice Department have announced a partial settlement of a lawsuit involving wastewater discharges from the Hudson Foods, Inc., chicken processing

and protein plant at Hope, Arkansas. The company agreed to stop discharging pollutants until it can start operating a spray irrigation system on a company-owned 800-acre tract nearby. The suit sought civil penalties and a preliminary injunction against the discharge of wastewater that could be hazardous to the environment. Settlement of the preliminary injunction was reached through the cooperation of Hudson Foods. Several issues stemming from alleged discharge permit violations remain to be solved and are under discussion.

Chemical Fire Cleanup

A team of State and Federal experts have cleaned up oil and chemical residues left after a fire destroyed a South Houston chemical warehouse in late October. About 100,000 gallons of polluted water were pumped from a nearby ditch onto the blaze and a hastily built dam kept the water from flowing into Sims Bayou and the Houston Ship Channel. Chemicals flushed from the warehouse during the fire-fighting efforts included solvents, pesticides, herbicides, fungicides, and fertilizers. The EPA response team worked in cooperation with staff from the Texas Department of Water Resources, the U.S. Coast Guard, Army Corps of Engineers, Department of Interior, and Department of Commerce.



Air Alert Called

N.L. Industries, Inc. St. Louis, Mo. has cut production 50 percent at their titanium pigment plant

after an air emergency alert was declared last October 25 in St. Louis, Mo. Pollution levels were as much as three times over emergency levels. This was the first air emergency alert in the State. St. Louis County also asked Cities Service Co.'s iron oxides plant and Metropolitan Sewer District's L'May treatment plant to curtail production. The general public was alerted to possible health problems and people with heart and respiratory ailments were told to take the necessary precautions. The alert was removed on November 3 by the St. Louis County Air Pollution Control Branch after winds shifted, dispersing the pollution. Dr. Kathleen Camin, Regional Administrator, brought monitoring units from EPA's Health Effects Research Laboratories in North Carolina into the area to measure the level of particles and sulfur in the air

Missouri River Oil Spill

A tank receiving crude oil at the Amoco Oil Refinery in Sugar Creek, Mo. overflowed last October 30, sending an estimated 21,000 to 42,000 gallons of oil into Rock Creek and from there into the Missouri River. The spill was attributed to human error because a drainage pipe valve had been left open. EPA acted as on-scene coordinator for cleanup activities. Much of the crude oil was confined by floating booms. However, oil was spotted as far away as 23 miles downstream. Cleanup of the spill was completed November 12, 1977.



Faster Decisions Promised

Region 8 Administrator Alan Merson has promised that decisions will be coming quicker from EPA. Speaking to a State Affairs Conference at the University of Northern Colorado he said, "I don't believe in the tactics of harassment and delay just to hold something up. Everyone deserves a chance to be heard. Once those voices have been heard, it's time to get on." Merson said some EPA requirements may be unjustified and should be dropped. As an example he noted a regulation which requires permits for irrigation return flows. While some EPA practices and regulations are being reviewed, Merson reiterated that the Agency will be taking steps to insure environmental quality in the six-State area.



Wastewater Greens the Desert

Region 9 has funded 75 percent of a project that recycles water from a sewage plant in Tucson, Ariz. EPA granted just over \$1 million for the construction of the Randolph Park Wastewater Reclamation Plant. The project is one of many throughout the State of Arizona that show what can be done if water is regarded and used as a resource instead of a throw-away item. The plant treats sewage and recycles the "new" water into Randolph Park. There, in the middle of the desert,

it nourishes the thick green turf for two 18-hole public golf courses as well as numerous shrubs and trees.



Dioxin Study Underway

Region 10 is conducting a research study to determine whether human breast milk contains the chemical dioxin (TCDD), a manufacturing contaminant sometimes found at low levels in certain herbicides and related chemicals. The herbicides are used in the Pacific Northwest to control unwanted forest growth that interferes with timber production or to kill off unwanted shrubbery along roads and powerline rights of way. The study, which began last November, uses 50 volunteer nursing mothers from areas around the national forests. Volunteers for the control group were taken from areas where spraying does not occur. Samples were collected through the cooperation of local and State health programs and clinics, environmental groups, concerned individuals, and university-affiliated persons. The study is expected to end in mid-1978. Results will be forwarded to each participant shortly after they become available to EPA.

Highway Cleanup Ordered

EPA has ordered the Federal Highway Administration to remove sediment from the south fork of the Clearwater River in Idaho. The sediment was deposited there as a result of a Federal Highway Administration road building project in the Nez Perce National Forest. Fish and wildlife officials say the sediment will severely disrupt the migratory pathways of chinook

salmon and steelhead trout. The action is being taken through an order issued under the authority of the Federal Water Pollution Control Amendments of 1972, which allows EPA to move against anyone depositing or discharging polluting materials into a waterway in violation of that statute. □

States Served by EPA Regions

Region 1 (Boston)
Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
617-223-7210

Region 2 (New York City)
New Jersey, New York, Puerto Rico, Virgin Islands
212-264-2525

Region 3 (Philadelphia)
Delaware, Maryland, Pennsylvania, Virginia, West Virginia, District of Columbia
215-597-9814

Region 4 (Atlanta)
Alabama, Georgia, Florida, Mississippi, North Carolina, South Carolina, Tennessee, Kentucky
404-881-4727

Region 5 (Chicago)
Illinois, Indiana, Ohio, Michigan, Wisconsin, Minnesota
312-353-2000

Region 6 (Dallas)
Arkansas, Louisiana, Oklahoma, Texas, New Mexico
214-748-1962

Region 7 (Kansas)
Iowa, Kansas, Missouri, Nebraska
816-374-6493

Region 8 (Denver)
Colorado, Utah, Wyoming, Montana, North Dakota, South Dakota
303-837-3895

Region 9 (San Francisco)
Arizona, California, Nevada, Hawaii
415-556-2320

Region 10 (Seattle)
Alaska, Idaho, Oregon, Washington
206-442-5810

Environmental Journey

Continued from page 10

Washington Post reported in its September 23, 1977, issue, under the heading "Youngstown's Layoff Sends Chills Through Steel Towns," that:

"The Environmental Protection Agency ruled that the steelmaker was violating Federal clean water regulations at its Monessen plant and earlier this year began fining the firm \$25,000 each day. EPA granted Wheeling-Pittsburgh a 90-day moratorium on the fines several weeks ago after the total reached \$42 million, according to a company spokesman."

It is difficult to see what is being accomplished by this primitively punitive ritual.

Numerous other puzzles come to mind. Where it is presumed national policy to encourage the construction and operation of regional waste treatment plants which treat both municipal and industrial wastes, why does the Congress place roadblocks against them with a fallacious Industrial Cost Recovery requirement and rigid formulas for covering operating and maintenance costs?

Lip service is being paid to the regional approach through efforts to implement Section 208 of the Water Act which deals with areawide waste management, but the only accomplishment appears to be the stirring up of a great many people in the name of "public participation."

Why should an industrial company be required to achieve effluent limitations based on "best available" technology if it is discharged into a stream which will be fishable and swimmable as a result of achievement of effluent limitations based on "best practicable" technology?

Why should a publicly owned treatment works be required to achieve secondary treatment if it is discharging into a body of water so big that the present discharge has no significant impact?

Why should a company be required to install flue gas desulfurization facilities if it is burning low sulfur coal or

otherwise avoiding breaches of ambient air quality standards?

Why should companies be required to achieve "zero discharge" if their present discharge does not result in breaches of water quality standards?

Why should a company be required to exert a degree of pollution control that uses an excessive amount of energy, natural resources, and money, and only transforms the pollution from one form to another with a resulting negative environmental impact?

There are additional enigmas being proposed. For example, pollution taxes. Why should a company which complies with environmental standards be required to pay a tax on its emissions and discharges? Why doesn't Congress recognize the fact that in most instances capital and operating costs for abatement facilities do not yield a direct economic return but do confer broad social benefits, and permit immediate write-off of the facility?

After the U.S. Environmental Protection Agency was created by Executive Order, why didn't the Congress enact a comprehensive Environmental Protection Act?

Although the theory of creating EPA was to achieve a coordinated administration of environmental laws, inconsistent approaches are still being taken and Congress is still legislating in piecemeal fashion. There is a National Environmental Policy Act but the only national environmental policy it sets forth is that Federal agencies are to take environmental considerations into account when undertaking major Federal actions. Although courts have held that it is a procedural law not conferring substantive rights, many of them have upheld challenges to the adequacy of environmental impact statements, and the chief result has been tremendous delays in energy development in the United States. Congress has had to undertake patchwork repairs such as the Alaska Pipeline legislation and temporary licensing legislation for nuclear power plants.

Congress keeps legislating amendments to the Clean Air Act and the Federal Water Pol-

lution Control Act, and keeps coming up with new discrete laws such as the Toxic Substances Control Act, the Resource Conservation and Recovery Act, and the Safe Drinking Water Act, as well as energy legislation which impacts on environmental legislation.

And I cannot hope to discuss other environmental type laws such as the Federal Environmental Pesticide Control Act; the Coastal Zone Management Act; the Marine Protection, Research and Sanctuaries Act; the Endangered Species Act; the Wild and Scenic Rivers Act; the Noise Control Act; the Marine Mammal Protection Act; an Act to Require Aircraft Noise Abatement Regulation; the Deepwater Ports Act; the Ports and Waterways Safety Act; the Fish and Wildlife Coordination Act; the Water Resources Planning Act; the Water Resources Research Act; and the Rivers and Harbors Act of 1899; the Environmental Quality Improvement Act of 1970; the Food, Drug, and Cosmetics Act; the Federal Insecticide, Fungicide, and Rodenticide Act; the Occupational Safety and Health Act; the Consumer Products Safety Act; and the Environmental Education Act. I have not attempted to compile the number of words and pages of regulations all these laws have and will give birth to or the number of words, dollars, and man-hours that have been and will be spent on filling out the forms and other paperwork the regulations give birth to.

We now have one section of the Water Act dealing with "toxic pollutants" and another dealing with "hazardous substances." We have a section of the Air Act dealing with "hazardous air pollutants." We have a whole new law dealing with the control of "toxic substances." We have eleven sections of a new solid waste law dealing with generation, transportation, treatment, storage, and disposal of "hazardous wastes." And don't forget the Transportation of Hazardous Materials Act which is administered by the U.S. Department of Transportation.

No wonder the EPA, FDA, OSHA, and CPSC have formed

an Interagency Task Force on cooperative reform of regulations to try to fit some of the pieces together.

So we see our environmental map is replete with confusing routes, destinations, and road signs, particularly dollar signs which promise not much more than to lead us into impenetrable jungles of regulation and expense. Perhaps Congress should create a Commission with the task of recommending a comprehensive environmental protection law that would carefully work out a balance of environmental, engineering, energy, natural resources, and economic considerations and that would enable government administrators to work with industrial companies and municipalities to problems created by our present baffling environmental map. □

Pulling Together

Continued from page 11

the problem. The corporate and public policy teams pull in opposite directions.

Another institutional mechanism that is often chosen is that of tax credits, accelerated depreciation, or subsidized financing of qualifying investments, such as for pollution abatement. One problem with this is that the return on the corporation's investment (not counting the social return, which does not appear on the company's books) is still likely to be negative. A second problem is in the definition of the qualifying investment. It is usually necessary, for administrative reasons and to discourage abuses, to make the subsidy available only for single-purpose plant and equipment. Thus a scrubber tacked on the end of a conventional coal-burning powerplant would qualify, but a system removing sulfur dioxide as an integral part of the combustion process might not. Finally, it is capital investment that is being subsidized, not performance in reducing emissions, so there is little incentive to design and operate the most effective and efficient system. The potential rewards of devising an institutional mechanism that would provide the needed motivation in the difficult cases described (desire for better technology, high costs of implementation) are great. Let us consider how it might be done for two pollutants that fall in this category: sulfur dioxide and nitrogen oxides. Nationwide emissions of each are projected, in the Department of Energy's analysis of the National Energy Plan and its alternatives, to significantly increase, despite the application of "best available control technology." Unless we find a way to do better, the acidity of precipitation and its adverse impact on ecosystems will further increase, as will the concentrations of fine aerosols that reduce visibility and are believed by many to have an adverse impact on health. Furthermore, any increase in

emissions of nitrogen oxides will likely exacerbate the difficulties in reducing ambient concentrations of oxidants, which are produced in atmospheric reactions involving nitrogen oxides.

Assume that we decide (through legislation) that this result is not acceptable, and that we must reduce, not increase, national emissions of sulfur dioxide and nitrogen oxides. I'll describe one mechanism for achieving this. It is based on an emissions charge approach, which is a concept long favored by economists and most environmentalists, but in addition it has certain features that should appeal to people in industry and regulatory agencies as well. Unless otherwise stated, the elements of the plan described below would be embodied in legislation.

- A schedule for desired reduction of man-made nationwide emissions of each pollutant over a considerable period—for example, a reduction of 3% per year for 25 years—would be specified.
- An initial charge level (for example, 50¢ per pound), estimated to be sufficient to achieve this schedule reduction, would be specified and applied nationwide.
- An annual tabulation of actual nationwide emissions would be compiled by EPA. The Agency would also prescribe minimum procedures for measurement of emissions.
- If actual emissions were greater than scheduled emissions there would be an automatic increase in the charge for the following year. For example, an increase of 5% in the charge for each 1% deviation for deviations up to 10%, and a 15% charge increase for each 1% deviation greater than 10%, might be specified.
- All of the charge revenues would be rebated. The charges paid by each affected industry or polluting group would be collected in a separate fund for that group. Rebates from the fund to each member of the

group would be proportional to that member's percentage of the Nation's production of the group. For example, in a group defined as "producers of electrical energy from coal," a company which produced during the period 2.5% of the national total of electrical energy from coal would receive 2.5% of the national charges paid into that fund during the period. This is the incentive part of the plan, since any company doing a better job of pollution abatement than the average of its group would receive more money in the rebate than it paid through the charge.

- EPA would estimate and make public the expected national average ratios of emissions to product for each group for the ensuing year. This would then be translated into a projected charge-rebate schedule for emissions above or below the national average. Companies and plant managers would thus have the information they need to estimate charges and rebates for their individual plants and "fine tune" their operations.

- Each State would review the expected impact of the national charge/incentive system on present and prospective emitters in each of the Air Quality Control Regions under its jurisdiction. If this analysis shows that the individual source emission limitations in the State Implementation Plan for a particular air region are not necessary to achieve State and Federal air quality goals, upon review and approval of the State's analysis by EPA the State emission limitations for that region would be indefinitely suspended. This would apply only to those pollutants covered under the charge/incentive system; State limitations on other pollutants would be retained.

- The States and EPA would periodically review the situation in regions where State Implementation Plan suspensions had taken place, to insure that actual emissions and ambient air concentrations were no greater than projected in the analysis. If they were greater, the State and/or EPA would be required to reimpose the State

Implementation Plan limitations.

Note that the proposed plan is not a wholesale replacement of regulations with emission charges. Such would be undesirable, first, because regulations are an efficient and effective mechanism in many situations, and second, because if charges were expected to substitute everywhere for regulations the burdens on administrators to establish defensible charge levels in each of hundreds of localities would prove onerous.

A plan such as the one described is perhaps more likely to be acceptable to industry than previous emission charge proposals. The net charges for each industry group will be zero, so the fear that the industry might be so taxed simply to raise revenue is allayed. Corporate managers confident of their ability to do at least as well in pollution abatement as the industry average might even welcome the opportunity to compete on this basis, since it offers another source of profit for their companies. Finally, and perhaps most important, companies presently unable to locate any new facilities, no matter how well designed, in regions just meeting or exceeding the ambient pollutant concentrations permitted by the standards should correctly perceive the charge as an incentive for all emitters in the region to do better than required by the State Implementation Plan, thereby "making room" for new facilities.

I have done no more than sketch the bare outlines of a plan to motivate the private sector to solve this class of public policy problems. It quite possibly is not the best plan. But it is long since time that this question of motivation received serious attention by policymakers in both the public and private sectors, so that the Nation can effectively and efficiently achieve what it has set out to do, pulling together rather than apart.

If this proposal stimulates a wide-ranging discussion of how that can be done it will have served a useful purpose. □

Congress Approves
1977
Amendments
to
Clean Water Act

Congress has passed amendments to the 1972 Federal Water Pollution Control Act. The legislation authorizes a total of \$28.7 billion for water clean-up, including \$24.5 billion for Federal matching grants to build wastewater treatment plants over the next five years. The balance of funds are to help develop water treatment technology, training programs and other activities. Among its provisions, the legislation extends the deadline from mid-1977 to April 1, 1979 for industries to install best practicable control technology for those who had made a good-faith effort to meet the old deadline. It also postpones the deadline of mid-1983 for installing best available control technology, depending on the type of pollutants. EPA was given new authority to control toxic chemicals.

CEQ
Urges Limit
on
Wordy Impact
Statements

The Council on Environmental Quality has proposed a 300-page limit on environmental impact statements. The plan would limit most EIS's to 150 pages for small projects and 300 for complex issues. The proposed rules would require an agency head to state publicly which aspects of the report he used in making his decisions and which he ignored. A draft of the proposals is now being circulated for other agencies to review. Earlier, routine responsibility for receipt and filing of impact statements was transferred to EPA's Office of Federal Activities.

EPA
Proposes
Restrictions
on Lead Levels
in Air

EPA Administrator Douglas M. Costle has proposed an air quality standard to protect public health from exposure to air-borne lead. The problem is especially acute for young children who are sensitive to low levels of the pollutant. The EPA proposal would limit the level to 1.5 micrograms of lead per cubic meter of air. Lead levels have been found to be as high as six micrograms in parts of Los Angeles and Dallas, according to David Hawkins, Assistant Administrator for Air and Waste Management.

Meeting With Business

By Philip Wisman

During 1977, the Department of Commerce and the Environmental Protection Agency jointly sponsored four Business-Industry Conferences. These meetings represent a new era of cooperation between government officials and private industry to stimulate new initiatives by all sectors of industry, government, and the technical community to conserve natural resources and produce cleaner, more cost-effective industrial processes.

Speakers and conference participants included representatives from industry, State, local, and Federal governments and key congressional leaders. At each Conference, the first day was tailored for industry's top management and policy officials. The second day addressed specific technical and economic issues and case histories.

The first such Conference was held in Chicago last January. Its theme dealt with steps industry had taken and could take "beyond environmental regulation," and stressed methods for reducing industrial pollution and achieving substantial cost-benefits at the same time. The keynote address, "Pollution Prevention Pays" was given by Lewis W. Lehr, President of the 3 M Company. Panel discussions addressed the questions, "What are the barriers to improving industrial pollution control?" and "What are the

EPA Commended

Juanita M. Kreps, Secretary of Commerce, has commended EPA's initiative in developing the series of regional business-industry meetings to exchange information on pollution control techniques.

"These seminars will help us assess the potential for alternate technolo-

gies and techniques in which industries—which account for nearly one-half of all U.S. energy consumption—will be able to conserve energy, conform to pollution standards, and lessen the need for costly 'end-of-the-pipe' treatment."

In seeking new solutions to environmental and energy problems, Kreps said "the Commerce Department and EPA have been guided by an important element in President Carter's Environmental Message to Congress: the belief that environmental protection is consistent with a sound economy."

incentives required to make improvements in industrial pollution control?" Workshops covered, "Selection and Implementation of pollution abatement programs," "Monitoring for environmental performance," and "Industrial-municipal waste treatment interface."

Another Conference was held in Boston in June 1977 with the theme "Industry Takes the Initiative." The keynote speaker was, as in Chicago, Lewis W. Lehr, President of the 3 M Company who described the company's approach to pollution prevention. Panel discussions addressed "Legislative Impact on Process Change," "Process Change brings Energy Benefits" and "Barriers and Incentives to improving Industrial Pollution Control." Workshops covered "Managing for Environmental Performance" and "Selection and Implementation of Pollution Control Programs."

The Dallas conference was held last September with the theme "Profits through accomplishments in Pollution Control," with the keynote speech, "Pollution Prevention Pays".

Workshops covered: "Managing for Environmental Performance" and "Selection and Implementation of Pollution Control Programs."

The most recent Conference held in San Francisco last month was on "Pollution Imagineering." It was designed to spotlight

examples of successful integration of pollution abatement methods with corporate management philosophy.

The keynote speech was given by William D. Ruckelshaus, Senior Vice President of the Weyerhaeuser Company.

Administrator Douglas Costle gave the EPA address.

The Department of Commerce was represented by Dr. Allen Haile and by Ms. Anne Wexler, Deputy Under Secretary. The first panel discussion dealt with "Non-degradation/Non-Attainment—Water, where was Congress going?" Dr. Sidney Galler, Deputy Assistant Secretary for Environmental Affairs, served as moderator. The Congressional staff member was Ms. Joan Kovalic from the Committee on Public Works and Transportation.

The Second panel had as its topic "Non-degradation/Non-Attainment—Air, where was Congress going?" The moderator was Thomas Quinn, Chairman, California Air Resources Board. The Congressional Staff Member was Steve Connally, House Subcommittee on Health and the Environment.

Technical sessions covered (1) "Implementation" (2) "Process Examples" with speakers from the cannery, refining, mining, and pulp and paper industries and (3) "Financial Considerations." □

Report from Region 1

Continued from page 21

interests must always conflict is one myth I hope to erase as Regional Administrator. I do not believe that in the long run there is an inherent conflict between environmental and economic goals. They are not mutually exclusive and no strategy that seeks to pursue one by sacrificing the other is going to succeed.

I also come to this job as a confirmed believer in a tough but fair enforcement policy. I am willing to work with industries and municipalities who are having trouble complying with environmental laws. We will offer advice and technical assistance. But violators who flout the law, who make little or no effort to meet our rules and regulations will be targeted for swift enforcement action. It is simply not fair to allow one industry a competitive advantage over another because one must comply with pollution control regulations and the other is allowed to slide.

Enforcement is one of the most important elements of our regulatory program. We have on the books many new, tough anti-pollution laws. Only strong, vigorous enforcement of those laws will make them effective.

I intend to exercise my prerogative as Regional Administrator to impose some of my own philosophy on the operation of the regional office. First, I hope that free and open communication between me and my staff, and between the Agency and the States, municipal governments, the business community, and environmental groups will be one of the key features of my tenure as Regional Administrator. I have tried to make my staff, governmental officials, and business and environmental leaders aware that my door is open to them. I am interested in their opinions, in what they think we are doing right and

(Philip Wisman is an EPA Headquarters Public Affairs Officer.)

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Report from Region 1

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wrong, in their suggestions and recommendations. I recognize that in the end, the hard decisions are mine to make, but I am actively seeking advice before I make important decisions.



William R. Adams Jr.

This does not necessarily mean that I will take all the advice offered, but I will listen. No one will be able to say that this Agency has been arbitrary or is unwilling to listen to opposing opinions or has not done its homework.

Second, I want to see increased flexibility in what we as an Agency are willing to consider or to do. I do not mean to disparage the administration of my predecessor. He inherited a hodge-podge of programs and personnel and philosophies from many different agencies. His challenge was to take them and make them function effectively as a unit. My challenge is different; I have inherited a smooth-running organization—so smooth that it practically runs itself. The danger in this situation is that everything is easy as long as we don't step out of our established patterns, so we tend to try to do things as we have always done them.

I think it is a very typical rut—one to which all agencies must be vulnerable when they are about as old as EPA is, and I believe we must be zealous in our determination to stay out of it. We must be willing to stick out our necks, put our reputations on the line for new

approaches, and innovative technologies. We have to expect that this pioneering spirit will backfire on us from time to time, but we must be willing to take this risk, because yesterday's solutions simply will not work for tomorrow's problems. And I truly believe that if we are unwilling to take the risk, we are going to find ourselves the dinosaurs instead of the leaders of the environmental movement.

Third, I want this Agency to begin to do more acting than reacting. It is all too easy, particularly in the first years of an Agency's operation, to get into a fire-fighting situation and just never have a chance to sit down and anticipate or prepare for anything. However, we cannot continue to operate this way. We must make the time to think about what kinds of problems we are going to face in the coming years, and how we are going to deal with them. We need to think about our goals, about whether or not they are valid after seven years of operation. We need to think about what we have learned during those years, and whether we need to change our policies or goals on the basis of what we have learned.

We simply cannot expect to run an effective environmental protection program if we don't think very carefully about where we are going and why.

Since coming on board as, Regional Administrator, I have been asked many times about what I believed will be the most important environmental issues facing New England in the coming years.

One issue that I predict will receive a great deal of attention, not only in New England but nationwide, is preventive public health. The new drinking water standards, the new toxic substances act, the hazardous waste provisions of the Resource Conservation and Recovery Act are all designed to prevent public health problems before they occur. I think that this emphasis

on people will bring a whole new interest group into the environmental constituency. We will be dealing with very serious issues and making many important decisions that will have profound impacts on public health. I expect that we are going to be subjected to closer public scrutiny than we have ever before experienced. We are going to have to be scrupulously careful about what we do, or we will leave the Agency open to charges of carelessness and bureaucratic lack of concern for the public.

Another problem that I foresee is oxidant air pollution. Excessive levels of photochemical oxidants, or smog, have been recorded at every monitoring station in New England that measures this pollutant, and the frequency of violations is increasing.

In New England about half of the hydrocarbons that form oxidants are generated by automobile traffic. Eventually, the internal combustion engine can be redesigned to produce significantly less hydrocarbon pollution, but that is a long-term solution. For the short-term we are going to have to adopt specific measures to cope with automobile air pollution, particularly in Rhode Island, Connecticut, and Massachusetts. One thing we should do is to work to develop alternatives to commuting alone. I think more people should be encouraged to use car pools and mass transit. I also think it is essential that states adopt mandatory automobile inspection and maintenance programs. Programs such as this have been tried in other areas of the country and have proven to be an effective way of reducing pollution from cars.

Energy development certainly will be an important issue I will have to deal with. Off-shore oil drilling apparently is moving ahead off our New England coast. We are going to have to work to ensure that every possible environmental control is used so that our valuable commercial fishing industry in this region is not adversely impacted. We also must make sure that any on-shore development that may occur,

such as the construction of refineries or large storage facilities, is consistent with environmental requirements.

Of course, nuclear power development will be another issue which we will have to address. The Seabrook nuclear power plant issue raised a lot of questions that I am sure will come up again and again in this region. We will continue to review all proposed plant applications on a case by case basis, and we will continue to insist that the best available control technology be employed in order to minimize the effect of the facilities on our environment.

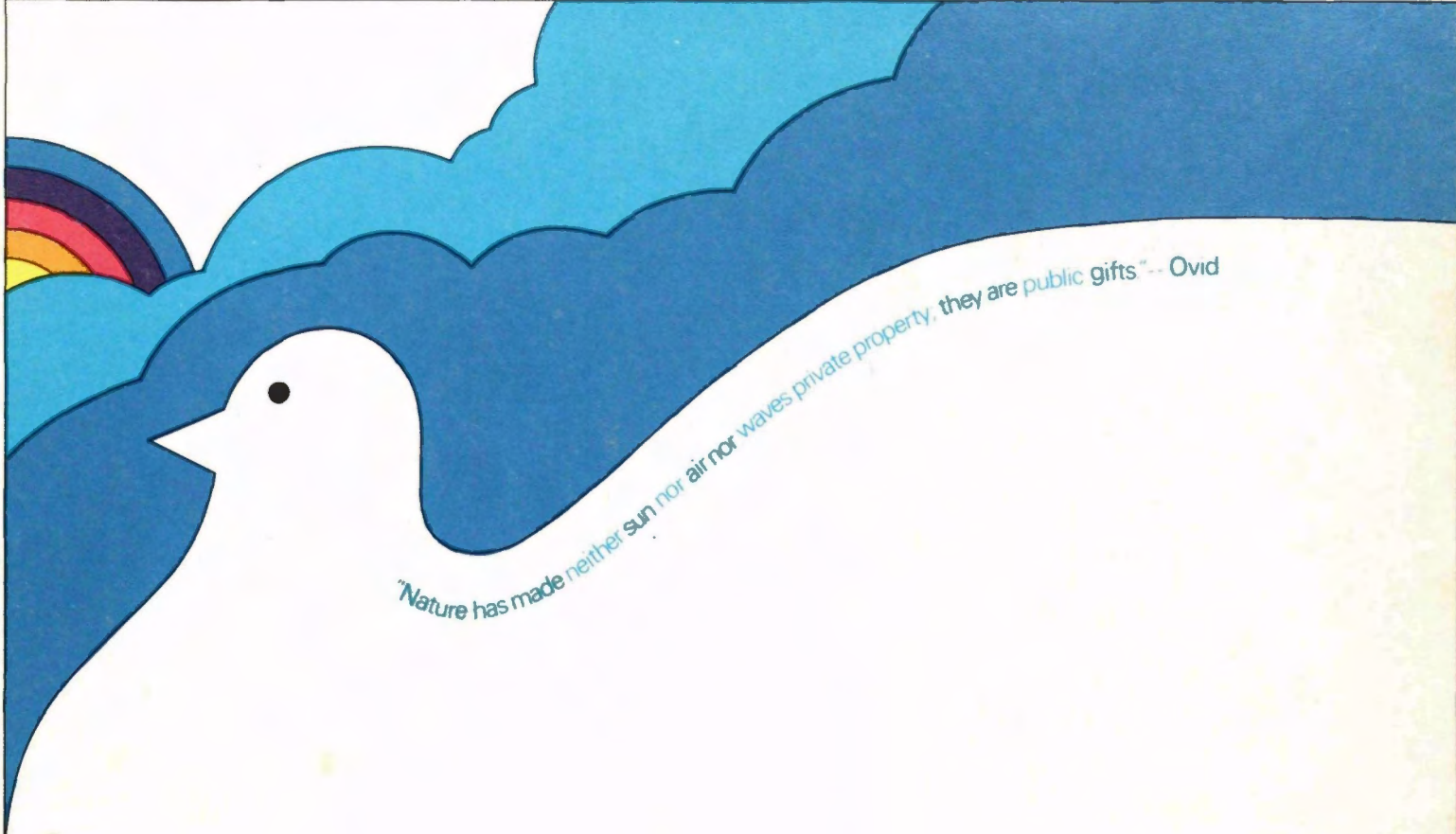
Another issue that I think is going to be very important over the next few years is solid waste management.

Let me say in closing that I do not believe any of these problems is insoluble. I have inherited a very capable, dedicated staff, and I am confident that if we keep the lines of communication open, and apply some creative thinking to the problems that confront us, we can realize our goal of a cleaner New England for us all. □

Opposite Page: The electrostatic precipitator (left) and "Venturi" scrubber (center) on this International Paper Co. plant at Jay, Me., are keeping pollutants out of the air.

Back Cover: This detail is from one of a set of posters produced by EPA on air, land, and water. Single copies of the posters will be available in March from EPA Printing Management (PM-215), Washington, D.C. 20460. Quantities may be purchased from the Government Printing Office, Washington, D.C. 20402.





"Nature has made neither sun nor air nor waves private property, they are public gifts" -- Ovid

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