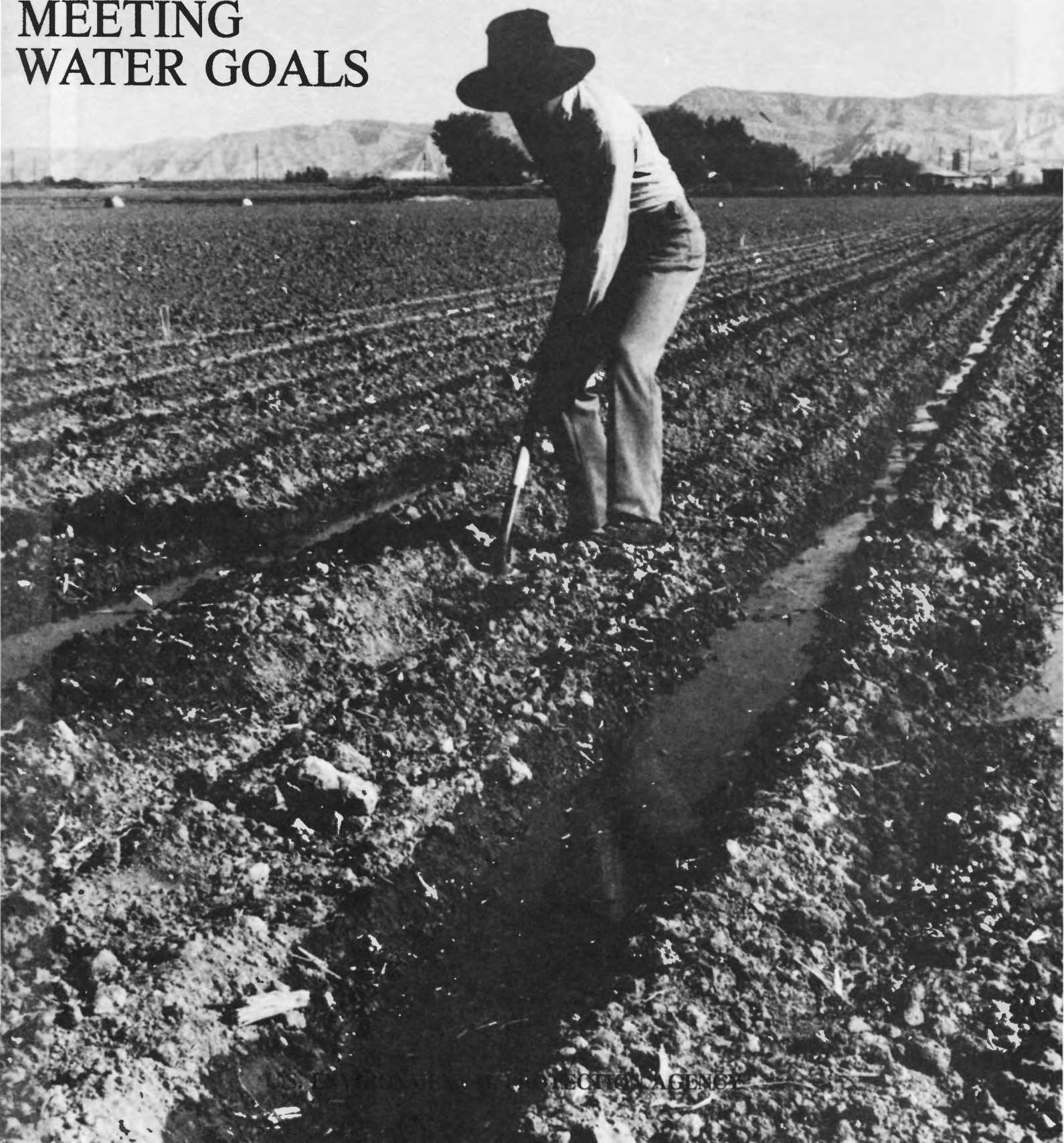
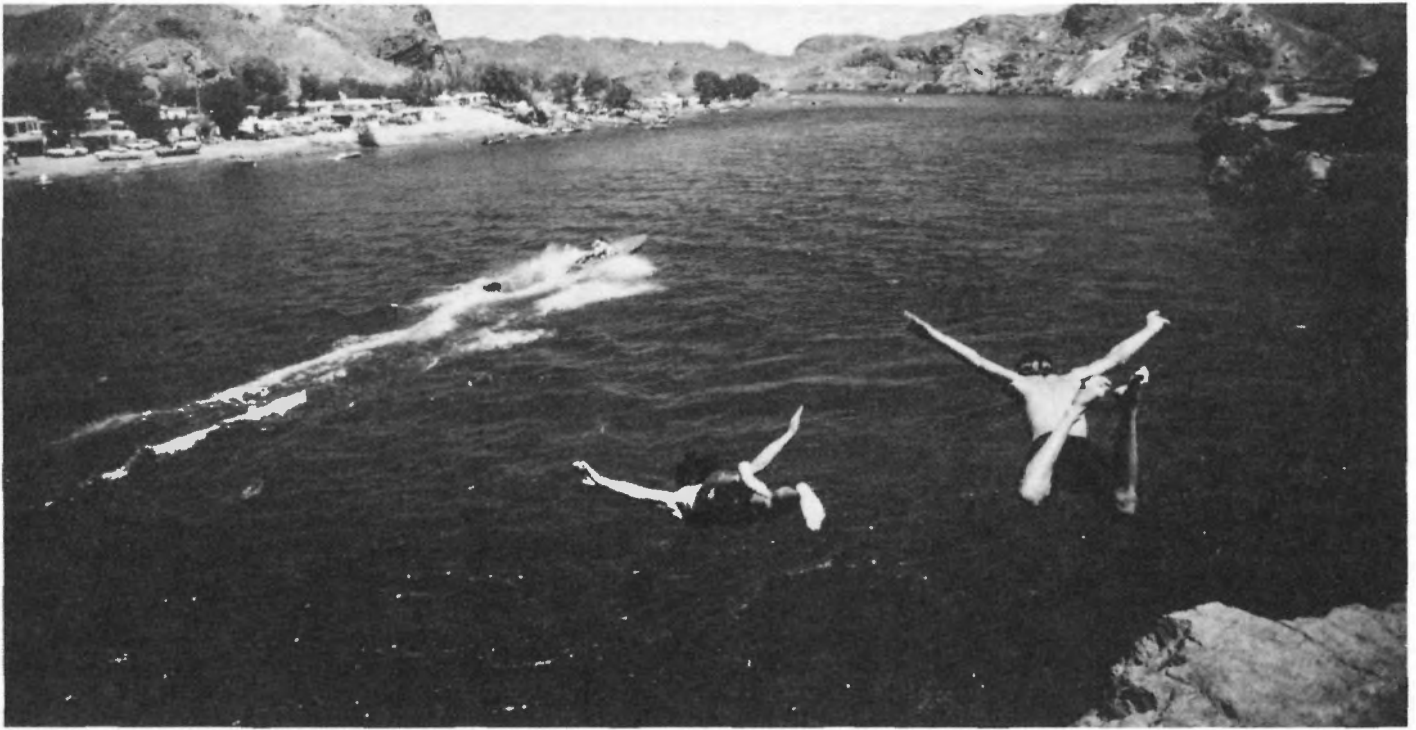


EPA JOURNAL

JULY-AUGUST 1977
VOL. THREE, NO. SEVEN

MEETING WATER GOALS





THE WATER MISSION

The continuing struggle to improve the quality of the Nation's waterways is the main theme of this issue of EPA Journal.

As the water program passed a major cleanup deadline on July 1, EPA announced a major enforcement effort is being launched. This is the subject of the lead article.

Thomas C. Jorling, Assistant Administrator for Water and Hazardous Materials, explained in testimony to a Congressional committee and in an interview with EPA Journal that the existing Federal Water Pollution Control Act is working well, but needs some "mid-course corrections."

Stressing the growing importance of water conservation, Jorling told a Congressional committee that EPA believes only those communities which act to reduce water consumption should be entitled to the full Federal share of construction grant money for waste treatment plants.

An example of the hard technical choices sometimes necessary in the awesome task of guarding the quality of the Nation's water is the Seabrook nuclear power plant case, the subject of another article in the Journal.

On another front, the Journal reports, EPA has been directing a major research program to reduce the worst pollutant in the Colorado River—salt.

The success of the Agency's efforts in reducing

the pollutants going into our streams and lakes will help achieve the goal of providing good drinking water, another major responsibility discussed in the Journal which EPA now shares with States and local jurisdictions.

The magazine's Environmental Almanac takes a look at some of the problems of pollution and river swimming.

A new laboratory at Narragansett, R.I., is expected to help EPA deal more effectively with pollution problems in ocean waters, an article reports.

To assist the overall pollution control effort, the Journal notes that EPA's new leadership is making a determined effort to stay in touch with various constituencies around the country.

The magazine's People Department includes an unusual number of appointments and proposed selections for high Agency posts as the new Administration takes firm control of EPA.

Other subjects in this issue of the Journal include an article about the growing shortage of firewood in some Third World countries, one of the lesser known environmental problems discussed in the UN's first State of the World Environmental report, and an article on the use of new equipment in EPA's Region II Office to help train smoke readers.

EPA JOURNAL

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COVER: Charles Lurvey, a Colorado State University researcher, cleans out an irrigation furrow on a plot where the university is finding ways to reduce salt in drainage water returning to the Colorado River. In the background are the Bookcliff Mountains bordering Grand Valley, Colo.

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WATER CLEANUP ENFORCEMENT

More than 300 industries and 100 cities and towns face enforcement action by EPA for failing to comply with Federal water pollution control standards by the July 1, 1977 deadline. This action is part of an enforcement policy designed to force polluting industries and municipalities to comply with EPA's long term abatement schedules.

Thomas C. Jorling, EPA's Assistant Administrator for Water and Hazardous Materials, said enforcement is necessary not only to attain EPA's clean water goals but also to be fair to those industries and cities which have already spent large sums of money in meeting Federal water pollution standards.

He added that EPA will be pressing for more prosecutions and higher penalties than ever before. Jorling said EPA plans to seek 400 lawsuits in the next few months—more than double the number of prosecutions for all of 1976.

Last year EPA filed actions against 150 industries and 20 municipalities accused of failing to meet preliminary deadlines in water cleanup schedules. Recent settlements in these cases include a \$4 million fine against U.S. Steel Corporation at Gary, Ind., and a \$1,250,000 penalty against National Lead Industries in St. Louis, Mo.

The 1972 Water Pollution Control Act set July 1, 1977, as the deadline for the first phase of water pollution abatement. The Act required cities and towns to construct secondary sewage treatment plants and industries to apply the "best practicable" treatment technology to the wastes they produce.

"Substantial progress has been made," Jorling pointed out. Approximately 85 percent of the major industrial dischargers complied with the first stage of the water pollution abatement program on time. Over 30 percent of America's cities and towns are on schedule.

In his environmental message to Congress on May 23, 1977, President Carter directed EPA officials to take vigorous

action in the administration of existing environmental programs. In the spirit of that directive, EPA is demanding civil penalties that would make it unprofitable for delinquent industries and municipalities to continue to pollute. Criminal sanctions will be sought in cases where the neglect has been gross or willful, Jorling warned.

The 1972 Act requires industries to install the best practicable clean-up equipment necessary to achieve an 85 percent reduction of solids and organic matter in their discharges. Only 600 of the 4,000 major industrial dischargers failed to meet the July 1 deadline. "This is a spectacular achievement and one in which the Nation's private industry can justifiably take pride," Jorling said.

"Although substantial progress has been made in cleaning up our waters it would clearly be unfair for us to overlook those industries and municipalities that, through their own action or inaction, have held us back from attaining our clean water goals. We must not reward the recalcitrant by failing to take firm and prompt action against noncompliers," he said.

In the industrial area EPA has followed through on its promise to move swiftly against the big polluters whose discharges pose the greatest threat to water quality. Selection of industrial targets for prosecution is based on three factors: potential harm to human health, extent of cooperation and good faith efforts at compliance, and length of time required to obtain compliance. Special consideration is given to industries that received permission to discharge wastes into municipal treatment systems that have not yet been completed.

"The overall goal of this enforcement effort is to promote the greatest degree of cleanup possible with available resources," Jorling said. Consequently penalties for noncompliance are being set

so as to neutralize any economic advantage which an industry or municipality may derive from noncompliance. The maximum civil penalty is \$10,000 per day of noncompliance. Jorling stated that EPA will support its enforcement policy by seeking criminal sanctions in cases where the discharger is willfully ignoring Federal regulations.

New York, California, and Pennsylvania, with more than 40 industrial violators each, currently head the list of States behind in their water pollution abatement schedules. Michigan, Ohio, and New Jersey each have from 25 to 40 industries subject to civil fines or criminal prosecutions. Only Wyoming, North Dakota, and Maine have no industrial violators.

According to recent EPA reports, blast furnaces are the major water polluting industry with 46 percent of the facilities in violation of Federal standards. They are followed by pulp mills and electric power plants with 34 percent noncompliance each.

In the cities progress has been slower. About half of the 4,300 municipal sewage treatment plants serving populations of 10,000 or more failed to meet the July 1, deadline. The 1972 Water Pollution Control Act requires cities and towns to build secondary sewage treatment plants as well as more advanced facilities where necessary to protect water quality.

Congress has allocated more than \$18 billion to cities and towns to build these plants and the President has asked the Congress for an additional \$45 billion over the next ten years. The construction grants program is now the largest public works project ever undertaken by the Federal government.

Despite this Federal support, the construction of municipal treatment plants has been subject to delays. "Our experience," Jorling said, "has disclosed a complexity of problems in operating the multi-billion dollar Federal grant program. Such problems include the magnitude of investment needed from municipalities,



Industrial wastes pour from pipes into Kanawha River in West Virginia.

the fact that Federal funding has not been available in some cases, and the substantial time involved in completing construction."

These problems have been considered in deciding which cities to prosecute. The primary targets of enforcement action are those large cities that either failed to use available Federal funds for waste treatment or are not properly operating and maintaining existing facilities.

The fact that EPA is prosecuting a higher percentage of the industrial violators than municipal violators in the courts reflects a difference in Agency enforcement procedure rather than policy choice. A much larger proportion of municipal violations are handled by administrative law orders than through the courts. Court action is sought only in cases where administrative orders are ignored or prove ineffective. Since a higher percentage of the industrial violations are willful, the more coercive remedies available in court are necessary.

EPA plans to complement its municipal enforcement policy with several measures designed to help make sure Federal construction grant funds are used in the most cost effective and environmentally sound ways. EPA is scrutinizing many pending projects that include construction of costly new collector sewers (the type used along most city and residential streets). Jorling said collector sewers sometimes serve to encourage excessive suburban development and add to pollution.

"We believe that funding for some of this proposed sewer construction could be spent more effectively in building or upgrading waste treatment plants," he explained.

EPA has a program staff of 581 attorneys, inspectors, and clerical employees working on these review and enforcement actions which will continue to be a top Agency priority for the next few months. ■

NEW DIRECTIONS FOR WATER PROGRAM

An interview with Thomas C. Jorling, EPA's Assistant Administrator for Water and Hazardous Materials

Q: *Have we been making progress in cleaning up America's rivers and lakes?*

A: I think the fair answer is yes. The water is getting cleaner. But we must qualify that by being somewhat precise in our analysis.

It is clear that our control over the traditional sanitary pollutants, such as suspended solids, coliform organisms and oxygen-consuming materials has been effective and successful.

Where we need now to focus our attention is on the problems that result from the fact that we live in an industrial-chemical era. We have to learn how to deal with the chemical constituents now finding their way into the waste stream. In addition, we must learn to deal more effectively with non-point pollution sources such as erosion and agricultural wastes.

So we have a lot of work left to do.

Q: *Has EPA's construction grants program been successful? Do you have enough people to run it properly?*

A: The construction grants program has been run remarkably well. However, it is understaffed.

For example, the highway program, which is running at a level somewhat less than the \$4.5 billion per year now committed to our construction grants program, has a staff of 4,500 at the Federal level and these 4,500 people have to deal primarily with the State governments.

In contrast, the EPA construction grants program is managed by a staff of 900. We have to deal with applications from approximately 10,000 cities and other local jurisdictions.

Our problems are much more complex. We have to deal with the basic mechanics, structure, and function of human habitations.

While we have been doing a good job I do not want to suggest that the work we have been doing is totally adequate. We have to stress more consideration of alternatives especially land treatment. We have to focus more on pretreatment, on user charges, and industrial cost recovery. All these are the important elements that are going to make what we build successful into the future.

Q: *What specific steps do you plan to take to deal with the problem of toxics in our waterways?*

A: Under the present law, we are required to establish effluent limitations set at a level of best available control technology.

We have embarked on a rather large campaign to establish those effluent limitations for 65 toxic pollutants. That is the first and base level of effort.

At the same time, we know that we occasionally run across new pollutants that are toxic, and we need authority to regulate pollutant by pollutant. Therefore, we do need the authority that is represented in Section 307(a) of the Water Pollution Control Act. We will be seeking some amendments to improve the efficacy of that authority.

In addition, we have to move aggressively under Section 311 (Oil and Hazardous Substance Liability) to control the discharge of hazardous pollutants, and we hope to promulgate regulations in the near future.

Q: *Do you think the area-wide planning called for by Section 208 will work effectively to curb non-point pollution such as land erosion?*

A: We believe that the 208 vehicle for the control of non-point sources is the most effective one that anyone has yet developed.

Erosion and other non-point problems are beyond the scope of a direct Federal regulatory program such as these we have for control of industrial and municipal point sources.

We must urge the States and the area-wide agencies to move aggressively on non-point pollution. We have to develop the kinds of techniques and tools that are established by best management practices and develop strategies necessary to apply them.

And I might add that we are working closely with the new administrations in the Departments of Agriculture, Housing and Urban Development, and Interior as well as with the Corps of Engineers to achieve the non-point source control objectives as part of 208 implementation.

Q: *What major changes, if any, do you hope to make in EPA's Water Pollution Control Program?*

A: The major changes are basically to accelerate the full implementation of the Federal Water Pollution Control Law.

We hope particularly to speed our efforts on toxic pollutants.

We also want to move aggressively into the recycling and reuse of water. We hope to demonstrate in many areas of the country that there are superior alternatives to conventional waste treatment technology, especially in municipal systems.

We want to integrate our planning.

Q: *Do you regard as feasible the requirement in the Federal Water Pollution Control Act that industries must provide best available treatment technology by July 1, 1983?*

A: The answer is most affirmatively yes for toxic pollutants. The problem with the 1983 requirement has been that people have focused on the conventional parameters of waste, and they have ignored the chemical discharges, especially from industries, and from municipalities as well.

We are concerned that the application of strict best available technology requirements for oxygen-consuming wastes alone may hinder progress towards recycling and reuse. But that problem is restricted to the conventional pollutants and we are convinced that the '83 requirement for toxics must be adhered to.

Q: *Do you consider as realistic the goal of the Act to have no discharges of pollutants in the Nation's waters by 1985?*

A: The goal of no discharge by 1985 has served very important purposes and it has achieved dramatic results. We are now beginning to focus on questions of water reuse and recycling and confining and containing the disposal of pollutants. We have now some industries, such as Dow Chemical Company, adopting as a corporate policy the elimination of discharge of pollutants.

The intent of the goal is to achieve closed-cycle production. This is an ecologically sound, and I think absolutely necessary policy for us to achieve if we are to develop human societies that can flourish in conformity with the limitations of the biosphere.

The exact date we achieve the goal is less important. Dates serve to provide benchmarks against which to measure progress. I think, perhaps, a five-year increment goal would always be useful. In conjunction with non-deterioration it serves to force technology.

We are now already aware of many industrial operations for which we can eliminate waste discharges by 1985. Some industries are actually implementing such performance levels now. So I believe the no-discharge goal has been a very important element of the Act, and I believe it should be adhered to.

Q: *Some industrialists will argue it is not worth the billions it would cost to eliminate the final 5 or 10 percent of pollutants in their discharges. What is your response to this type of argument?*

A: That they are mischaracterizing the issue. The issue is not simply incremental removal for the sake of incremental removal. We do not support that, and I don't think it is fair to characterize the program as one that requires that.

We do believe that the effluent limitations established by the measure of best available control technology should be applied to toxic pollutants and other chemicals which are persistent in the environment.

We believe that only a few industry categories are going to be subject to incremental removal of all oxygen-consuming wastes. We feel that the Act, rather than insisting on incremental removal, provides sufficient discretion so that an industry can satisfy the requirements by moving toward recycling systems of production.

Q: *Is there a particular message you would like to give EPA employees at this point?*

A: I think the message that I would like to carry to the employees is that the mission of this Agency is an extremely important one. It deals with the ability of future populations to live in harmony with the environment.

To carry out that mission, we need dynamic and committed individuals. EPA should be an exciting place to work.

Our task is important in the scheme of things and one that I hope people will feel proud of participating in. ■

Thomas C. Jorling has been named EPA's Assistant Administrator for Water and Hazardous Materials. He succeeds Andrew W. Breidenbach, now a Special Assistant to the Administrator.

Jorling has been director of the Center for Environmental Studies, Williams College, Williamstown, Mass. since 1972.

Previously, Jorling had served as an attorney-advisor in the Solicitor's Office, Department of the Interior; assistant general counsel for the Smithsonian Institution; and minority counsel for the Senate Committee on Public Works.

Jorling is a member of the American Association for the Advancement of Science and the Ecology Society of America. He has had several articles published on legal aspects of pollution control.



He has a bachelor's degree in biology from the University of Notre Dame, a master's degree in biology from Washington State University, and a doctor of law degree from the Boston College Law School. In 1971 he was a visiting Ford Foundation Fellow at the Yale School of Forestry.

THE SEABROOK CASE

"The Seabrook plant has become a major symbol in the debate over nuclear power. The sit-in last month clearly demonstrated the depth of feeling of many people about this issue. However, the decision before me in reviewing this appeal was an extremely narrow one."

—EPA Administrator Douglas M. Costle

On Friday, June 17, at 10:15 am Douglas M. Costle stood before a packed news conference in Washington, D.C. to make an announcement: "Today, I am approving the proposed thermal discharge system for the nuclear power plant planned in Seabrook, New Hampshire."

The decision—upon which construction of the \$2 billion, 2,300 megawatt plant depended—was clearly the most difficult of Costle's new stewardship at EPA. It involved countless technical questions about the environmental effects of discharging billions of gallons of heated water into the Atlantic Ocean. It involved the review of reams of documents which comprised the official record on Seabrook. It involved the solicitation and review of additional information.

And its outcome would affect the most bitterly contested battle to date between proponents and opponents of nuclear energy.

Costle stressed that technically and legally, the scope of his decision was limited to two narrow factors:

"Was the formal record adequate to determine whether (a) the proposed thermal discharge will assure the protection and propagation of a balanced, indigenous population of fish, shellfish, and wildlife in and on the receiving waters, and (b) will the proposed intake structures reflect the best technology available for minimizing adverse environmental impacts."

A special group of Agency experts had been assembled by Costle to aid in the review of the record and the analysis of its contents. "I concur with their findings," the Administrator stated, "that the record, although not of high quality, is sufficient to decide that the proposed cooling system does meet the test set forth in the law.

"I have said that the record was not of high quality. This judgment led me to consider another option: remanding the proceeding to the Regional Administrator to continue the hearing and improve the quality of the record.

"I rejected this option when I concluded that—six months and millions of dollars from now—the final decision would be the same. In short, while the record could be better, it is adequate to reach a decision.

"Having said what my decision is, let me emphasize what it is not. It is not a seal of environmental approval on the Seabrook plant. . . . The decision is not a finding that construction of the plant is or is not desirable on other social, economic, or energy supply grounds.

"Finally, let me state that I am sensitive to the concerns of the various parties in this case. I understand the desire of the utilities to receive a clear red or green signal from the Government, rather than a flashing yellow. . . . But I also sympathize with the opponents of the proposal. . .

"Our society must decide what level of energy supply is necessary and acceptable, how that supply should be generated, at what level of expense and risk, and where power plants should be located.

"This appeal proceeding, highly technical and narrow, did not represent a forum for resolving those issues."

Seabrook is a small community in the southeastern corner of the State. If built, the new plant, which involves the construction of two nuclear reactors, will be operated by the Public Service Company of New Hampshire. It is intended to provide electricity in New Hampshire and Massachusetts beginning in the early 1980's. The company filed its application for construction with the Atomic Energy Commission (now the Nuclear Regulatory

Commission) in July of 1973.

The Nuclear Regulatory Commission has expressly made EPA's approval of the cooling system a condition of final approval. Nuclear power plants produce steam to drive turbines, and constant cooling of the heavy machinery is required. The cooling system at Seabrook, when operating at full capacity, will draw 1.2 billion gallons daily of seawater through an intake tunnel in the ocean floor. This is the equivalent of about four times the daily water supply for Metropolitan Boston. The water is returned to the sea by another tunnel. Upon return, however, it is 39° F warmer than the normal ocean temperatures, which range from 40° to 60° F.

In addition, once or twice a month the cooling system will be cleaned out by reversing the flow and drawing water in through the pipe normally used for discharge. This process, called back-flushing, discharges water at 120° F.

In his 48-page formal decision on Seabrook, Administrator Costle ruled that the plant must limit backflushing during adverse meteorological and hydrological conditions, such as prolonged onshore winds, to further assure protection of ocean life.

Costle also affirmed a previous finding that the plant's intake tunnel be sited 7,000 feet offshore to minimize potential environmental effects. The company's original proposal was for a tunnel only 3,000 feet into the ocean.

EPA originally became involved in the regulatory process affecting Seabrook in late 1975 when John McGlennon, then EPA Region I Administrator, gave preliminary approval to plans for a cooling system. In June of the following year, the Nuclear Regulatory Commission issued a permit, and actual construction began the next month.

However, environmental and other

groups requested an adjudicatory hearing to contest Region I's decision. Hearings were held, and the Administrative Law Judge certified the hearing record to the Regional Administrator.

On November 1976, the Region I Administrator ruled that the record was inadequate for him to determine that the proposed discharge would meet statutory requirements. As a result, the preliminary approval was revoked.

The company appealed that decision to then EPA Administrator Russell E. Train, who agreed to hear the appeal on two issues: the adequacy of the record regarding the thermal discharge, and the location and design of the intake structures.

Although construction of the plant was virtually stilled during this period, on May 1, 1977, more than 2,000 demonstrators protesting the use of nuclear energy staged a sit-in at the construction site. The Washington Post termed the event, which was sponsored by an organization called the Clamshell Alliance, "the first massive show of civil disobedience against a nuclear power plant in the United States." Police, under the direction of New Hampshire Governor Meldrim Thomson Jr., arrested some 1,400 of the protesters.

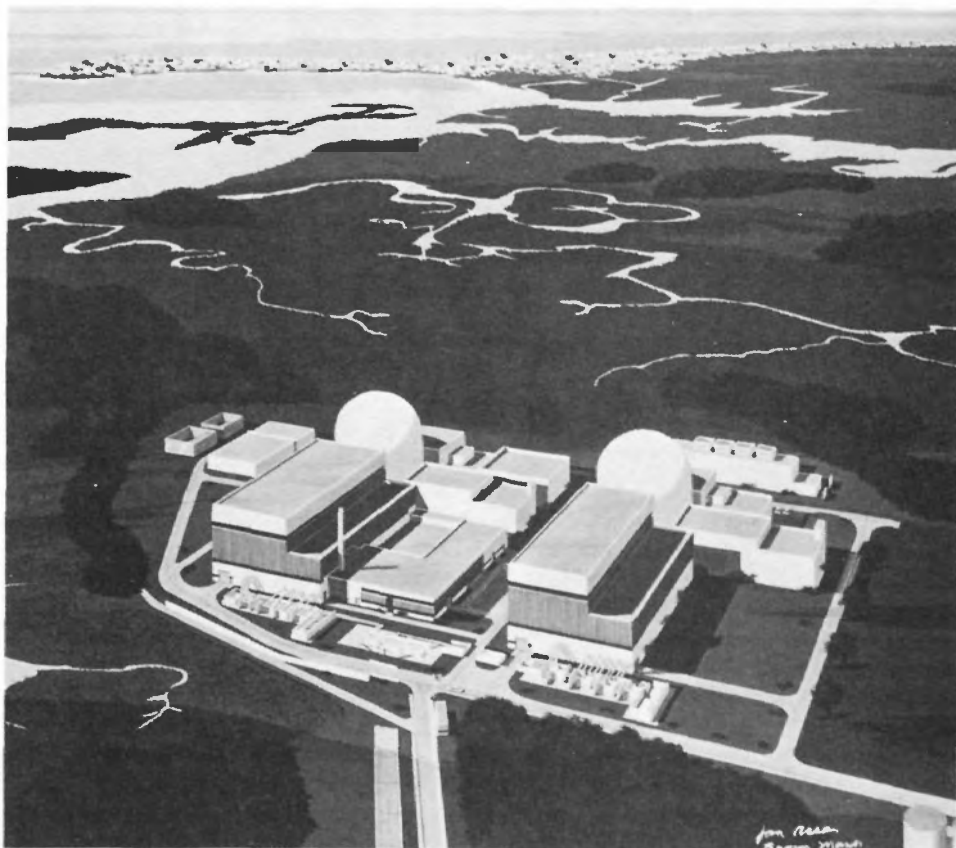
Members of the Clamshell Alliance were also present at Administrator Costle's press conference on Seabrook. One presented him with two dead fish, symbolic of the environmental destruction she felt the plant would cause.

The company, on the other hand, estimates that it has lost hundreds of millions of dollars in construction delays brought on by the seemingly cumbersome regulatory process.

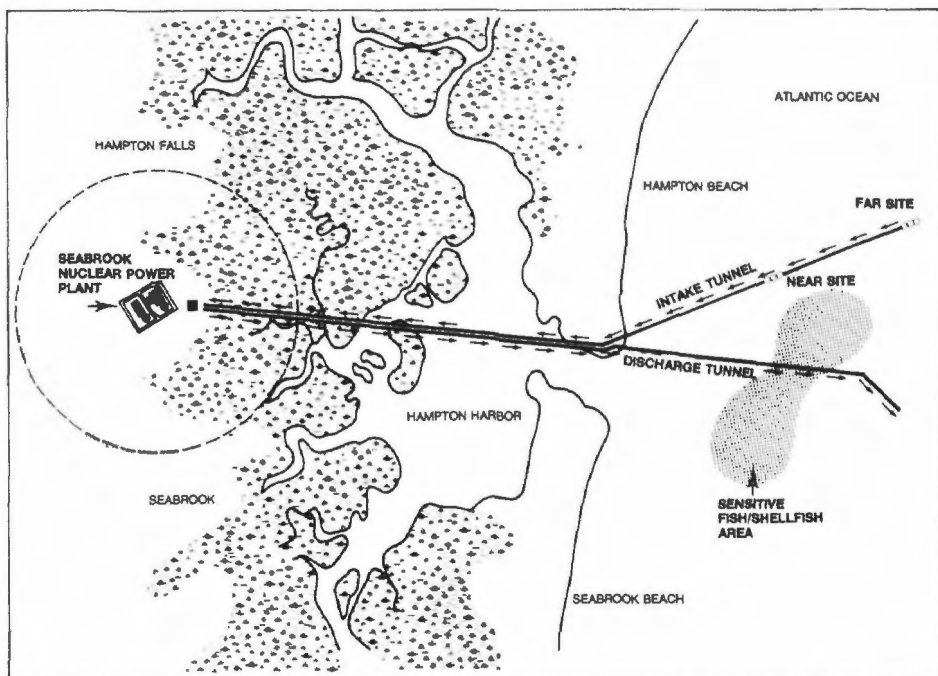
When Costle became Administrator in March, 1977, he assembled the group of Agency scientists who helped him review the Seabrook record. He also requested additional information from the company about backflushing. Costle's panel and staff members recommended reversing the Regional Administrator's decision, and the Administrator concurred.

Final approval for construction of the Seabrook plant still rests with the Nuclear Regulatory Commission. Some environmental groups have said they will try to challenge the construction of the plant by taking the issue into court.

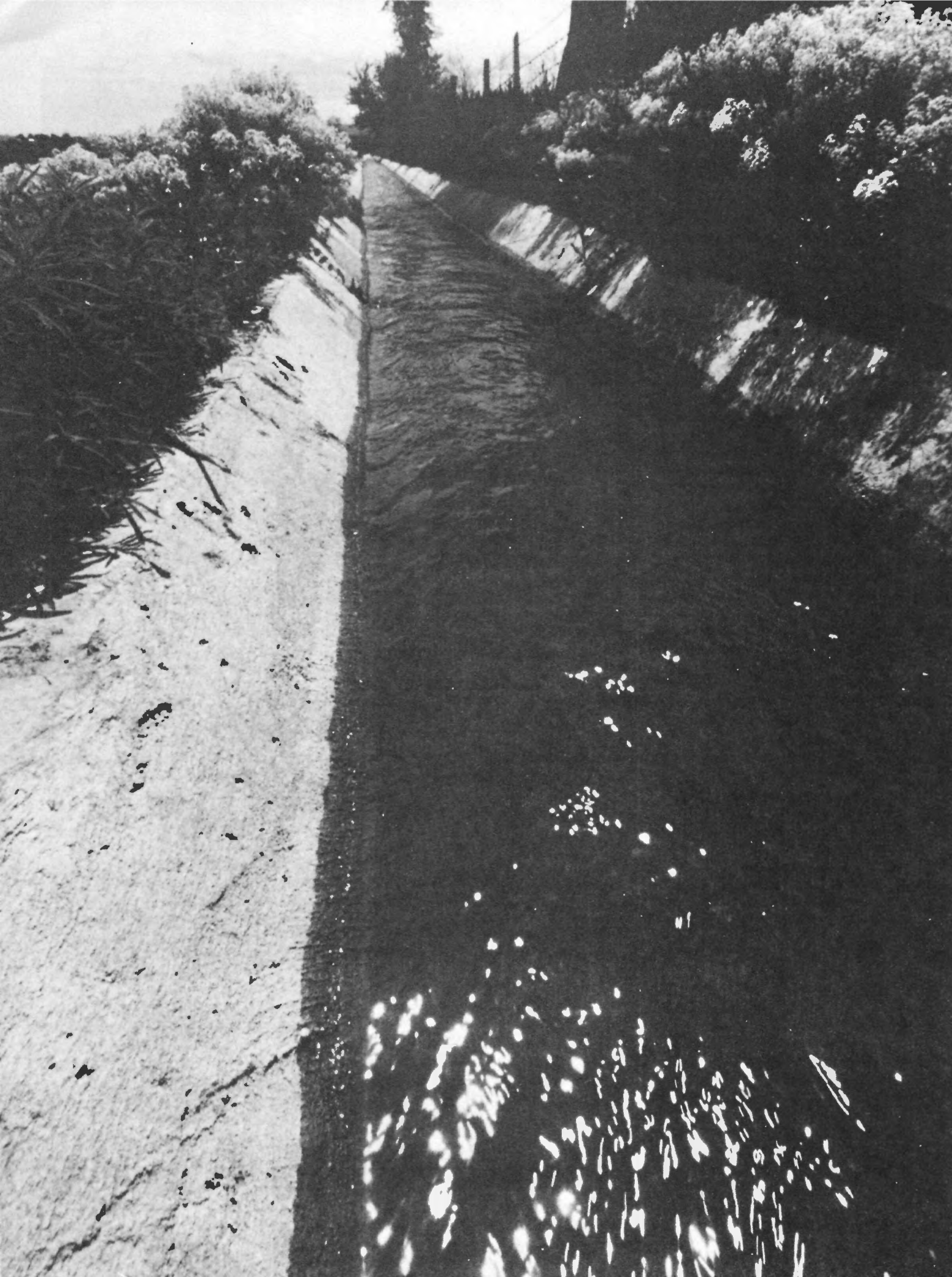
Costle concluded the prepared remarks of his press conference on Seabrook by saying, "The question, I am sure, arises: How does this decision affect other nuclear power plants? The answer is that it does not. It is confined to the facts of this case, on the narrow technical issues raised to me on this appeal. ■"



Artist's rendering of Seabrook Nuclear power plant being built by Public Service Co. of New Hampshire and other joint owners.



Inlet and discharge of condenser cooling water will come from points in Atlantic Ocean beyond the barrier beach.



COLORADO SALT

By Charles D. Pierce

On the floor of an ancient sea, which receded millions of years ago and left behind a desert, lies Grand Valley, now a prosperous western Colorado farming area because irrigation waters have helped such crops as corn, barley, and peach trees to thrive.

The valley, which draws its water from the Colorado River, is surrounded by such stunning geologic formations as Grand Mesa, an enormous flattop mountain, and the million-year-old canyonlands of the Colorado National Monument.

Yet to the people living in this valley and along much of the lower Colorado River one of the most significant geological legacies may be the vast deposits of salt left underground by the inland sea.

Salt from this and other sources has destroyed the usefulness of tens of thousands of acres in the Colorado River Basin and caused millions of dollars of damage to users of the Colorado waters in Colorado, Utah, Arizona, Nevada, California, and Mexico.

With financial support and program direction from the Environmental Protection Agency, Colorado State University has now developed an integrated control system which could substantially reduce the amount of salt being discharged into the river from Grand Valley. It may offer similar opportunities for other areas in the basin.

Salinity is the most serious water quality problem in the Colorado Basin. Of the 70,000 acres in the Grand Valley area receiving irrigation waters, 30,000 acres can be used only for low-value cash crops such as pasture because of salt pollution damage to the land.

Some fields in the Grand Valley glisten in the sun as if they were covered by ice because underground salts have been carried to the surface by a rising water table. The rise is caused by excessive saturation of the heavy clay soils with irrigation waters.

Over-irrigation can also result in the leaching of the Mancos shale, the under-

ground saline formation beneath the surface, into the Colorado River.

In the Grand Valley, large ditches or canals are used to bring the water from the river to the farming area. The water is then distributed to the individual users through small ditches called laterals. Most of these laterals are simply dug into the earth and are unlined. If the ditches are choked with weeds—as they often are in midsummer—the water soaks deeply into the ground.

As a result, the farmer must irrigate a crop above a subsoil already saturated with water because of ditch seepage. Furthermore, the root zone where the new crop obtains its nourishment is laden with harmful salt.

So the critical problems are over-irrigation by Grand Valley farmers who use to the fullest their long-standing rights to the Colorado River water and the seepage from the lateral ditches.

The impact of this salt pollution on individual farmers was explained by George Bargsten, who said that he has spent most of his life farming in the Grand Valley.

"I can still sense the despair many families felt as they walked away from their alkali-covered farms during the early years of the Great Depression," Bargsten recalled.

"However, it was not the depression that drove them from their farms, but the salt that invades the root zones when the water table rises."

There were no governmental agencies in Grand Valley in the 1920's to do research on these problems and help save farmers from disaster, Bargsten recalled. As a result, many owners lost their farms even though they had been paying on them for years.

Bargsten said he eagerly sought a job with the demonstration project being conducted by Colorado State University to reduce the Grand Valley salinity damage.

Now a research assistant for the university project, Bargsten said that many farmers in the area have become convinced that new irrigation techniques encouraged by the university have greatly improved their land.

"I can still feel the anguish of seeing

good land gradually become useless by the bitter water from underground," Bargsten said.

"However, because knowledge is now available, we can regain our wasted farm lands. Whatever programs and money are needed to restore these lands and prevent further land destruction will be justified. Governmental agencies and university researchers can make important contributions to the farmers."

The demonstration project, now drawing to a close, has been directed by Gaylord V. Skogerboe, Professor in the Department of Agricultural and Chemical Engineering at Colorado State University, Fort Collins.

EPA's project officer for the demonstration work is James P. Law Jr., Chief, Irrigated Agriculture Section. Robert S. Kerr Environmental Research Laboratory, Ada, Okla.

Grand Valley was selected for the field work because it is the largest contributor of salt per acre in the Colorado Basin. Of the total salinity in the Colorado River an estimated 40 percent is contributed as a

Continued

Robert Evans, a Colorado State University researcher, explains the advantages of sprinkler systems used on the fruit orchard behind him.



An irrigation canal brings precious water to Grand Valley, Colo.

(Pierce is editor of EPA Journal)



Jack Scott, a Grand Valley farmer, checks his trickler irrigation system while his hunting dog watches.



result of farming activities and 60 percent comes from natural sources such as salt springs and underground salt deposits.

Of the 40 percent of the salt load coming from agriculture, Grand Valley contributes about 18 percent, or about 800,000 tons of salt per year.

Another important reason Grand Valley was selected for this work is that most of the salt contribution was caused by existing irrigation practices which farmers could change once they saw the need for doing so.

To minimize the amount of salt draining into the Colorado, a basic requirement is diminishing the amount of deep percolation and underground water return flow into the River.

A number of techniques for doing this have been tested by the Colorado State University researchers partly on farm property rented in Grand Valley but mostly on farmers' fields. Cooperative efforts were undertaken with 70 farmers in recent years to provide irrigation improvements and to increase the effectiveness of water management by those farmers.

The results of this work will be used to develop best management practices for salinity control in Grand Valley. One of the most significant findings from the study was that no single control measure will be effective in controlling the salinity problem of irrigation return flows in all circumstances.

A combination of improved farm water management techniques, delivery system improvements such as lining canals and lateral ditches and use of more effective drainage systems will be required, the Colorado State University researchers found.

Some of the specific techniques being encouraged by the university include use of sprinkler systems and drip or trickle irrigation mechanisms, which apply water more effectively and result in less salt-contaminated drainage.

Robert G. Evans, one of the Colorado State University researchers, pointed out that the use of sprinklers in orchards not only uses less water than furrow irrigation but also helps prevent freezing of the fruit.

With the help of funds supplied by EPA an overhead sprinkler system was installed on part of a 54-acre orchard in Grand Valley.

"In the spring of 1976, the orchard owner lost all of his fruit because of frost

Irrigation waters give life to these fruit trees in Grand Valley, Colo. In the foreground and background are the desert conditions which make irrigation necessary for farming.



Charles Lurvey and Jan Gerardo, Colorado State University researchers, check irrigation meter in Grand Valley project.

damage except those on the 13 acres where sprinklers had been installed," Evans said. He added that the sprinklers can also be used to protect the fruit trees from excessive heat and to apply pesticides and fertilizers.

EPA has provided \$972,479 to help support salt reduction projects in Grand Valley which cost a total of \$1,266,939. Of this total, approximately \$750,000 was spent for improvements on farmers' fields, such as canal linings.

Thomas Murphy, EPA's Research Program Deputy Assistant Administrator for Air, Land and Water Use, in evaluating the Grand Valley research, stated:

"Technology is rapidly becoming available to control pollution from irrigation crop production. Already a number of practical control measures, useful in improving the quality of irrigation return flows, are being demonstrated.

"It must be stressed, however, that no single technology will cure all the problems. Typically, a varying combination of methods will be required to remedy the situation, for like most non-point source problems, irrigation return flows are influenced by a wide range of conditions at each site."

Dr. Murphy stressed that "the mere development and demonstration of these improved techniques is only a first step. Continued and increased cooperation from the agricultural community will be necessary to develop irrigation management systems which are acceptable and tailored to local conditions. A significant cooperative effort will be necessary to implement such systems to actually improve water quality. We are striving to show that this can be accomplished by best management practices while at the same time we are maintaining or enhancing crop production."

In addition to the Grand Valley project, EPA is also helping to fund irrigation

studies in several other areas, including the Upper Rio Grande Basin, San Joaquin Valley, Snake River Basin, Columbia River Basin and the lower Colorado River Basin.

High salinity in the soil as a result of unwise irrigation practices has destroyed ancient civilizations and is still an ominous threat in many areas of the world. "Fortunately," Dr. Murphy said, "our technology has provided us with tools to examine the problem and to find out what to do about it. Our goal is to use these tools to minimize pollution from irrigated crop production in the current areas and in the areas to be brought under irrigation in the future."

Irrigation is responsible for a major share of the increased salt-concentration in many of the Nation's western streams and rivers.

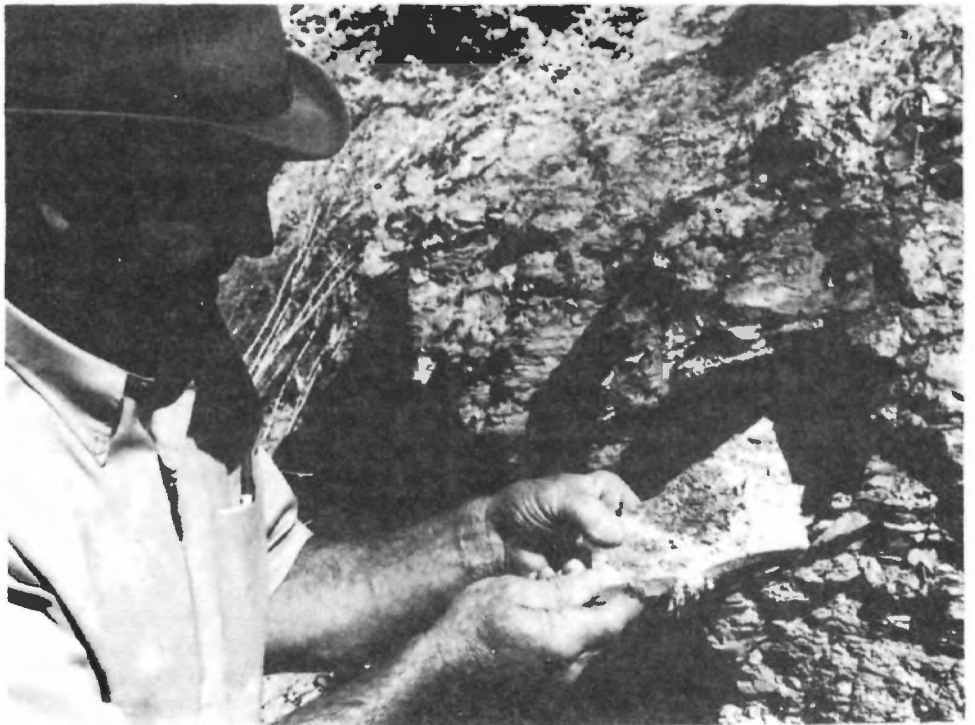
At present irrigation is the largest single consumer of water in the United States. Unlike many other water uses, irrigation does not return all the water after use to a river but actually "consumes" over half of it through seepage, evaporation and crop use.

Of the 480 million acres used for cropland in the United States, about 47 million are now irrigated. High cash value crops such as vegetables and fruits are usually grown on irrigated land. Approximately 25 percent of the total value of crop production in the United States is derived from this irrigated cropland.

In the past 75 years, irrigated land in the United States increased by more than 1,000 percent. By the end of this century, according to the Economic Research Service, approximately 57 million acres will be irrigated, an increase of nine million acres or about 20 percent over the present irrigated acreage. ■

Additional technical information on the control of irrigation wastes can be obtained by writing James P. Law, Jr., Chief, Irrigated Agriculture Section, Robert S. Kerr Environmental Research Laboratory, Ada, Okla. 74820

George Bargsten examines a sheet of the underground Mancos shale which is a major source of salt in irrigation runoff waters.



DRINKING WATER STANDARDS TAKE EFFECT

A new era has started with the promulgation of the first comprehensive Federal drinking water standards. These standards were established by EPA under the Safe Drinking Water Act of 1974.

Now, the 40,000 community drinking water systems and 200,000 other public water systems from Maine to California will have to sample their water routinely to make sure it meets the Agency's new standards. Many systems already meet these requirements as a result of existing State programs.

Equally important to consumers, persons using a public water system must be told by the water supplier if these standards or monitoring requirements aren't being met.

"The public notification provision of the regulations is the most novel feature of the new drinking water program," Barbara Blum, EPA Deputy Administrator explained. "The notice to consumers will explain any problems, specify corrective action that is being taken and, if appropriate, suggest precautions the consumer can take.

"The written notice—perhaps accompanying the water bills—must be made if any part of the regulations is violated. In addition, whenever a specific health standard is not being attained, notice by newspaper and notification to radio and television stations is also required.

"Consumers will now be better able to keep abreast of events and participate at the local level in this most basic of health programs."

Administrator Costle explained that "Both EPA and the States believe that most water supplies already meet the standards. Those that don't, however, will have to take whatever action is needed to remedy the problem.

"This could include installing more equipment at the treatment plant to either treat or remove the harmful substances. In severe cases, it may necessitate the water system finding a new source of water, or tying into a nearby water system.

"Congress recognized that the States, due to their existing expertise, should play the key role in protecting the healthfulness of their citizens' drinking water. For a State to become the central figure in regulating the quality of drinking water, it must assume primary enforcement responsibility (or primacy) over a program designed to meet mini-



mum national standards. Should a State be unwilling to do this, the law requires that EPA assume responsibility."

Alabama, Arkansas, Connecticut, Georgia, Louisiana, Mississippi, Nebraska and Oklahoma have achieved primacy. Approval of the State programs of California, Iowa, Maine, Massachusetts, Minnesota, New Mexico, New York, Texas, and Virginia are expected shortly. EPA is hoping over 40 States will assume primacy by the end of the next Fiscal Year, and that the rest will follow their lead.

To assist the States in moving toward the assumption of primacy, EPA has disbursed \$25 million to help set up and maintain adequate State programs. An additional \$20.5 million is available for Fiscal Year 1978, which begins in October of this year.

The new regulations set health standards for contamination by bacteria, which can cause waterborne diseases such as typhoid, cholera, dysentery and hepatitis. They also regulate ten inorganic chemicals: arsenic, cadmium, lead, mercury, chromium, fluoride, barium, silver, selenium, and nitrate. Nitrate, for instance, has been of concern because it can cause an anemic condition in very young children.

The new standards also apply to the pesticides endrin, lindane, methoxychlor, toxaphene, 2,4-D, and 2,4,5-TP Silvex. Additionally, there is a maximum level for turbidity, or murkiness, which can interfere with the disinfection of water. Standards have been set for radiological contamination as well.

Some types of water suppliers have more

time than others to start monitoring for certain contaminants. Monitoring begins immediately for coliform bacteria and turbidity, both of which relate to the possible transmission of disease in drinking water. Monitoring for the chemical contaminants will be phased in according to a specified schedule.

Furthermore, the Safe Drinking Water Act provides for a system of variances and exemptions for industrial water supplies. A local water system, for example, may obtain an extension in compliance deadlines where serious economic or other problems are encountered. However, no such variances and exemptions may be granted where there is an unreasonable risk to public health. The public must also be notified when they are granted.

Just before the new standards went into effect, the Agency received the full report of a "drinking water and health" study prepared over the last 18 months by the National Academy of Sciences. It examined all available data on the health effects of over 150 contaminant compounds. The NAS report was intended by Congress to advise EPA on additional regulatory actions. The report will provide the basis for issuing revised regulations to provide more comprehensive health protection.

Some chemicals which are currently unregulated are suspected of causing cancer when taken into the body in large concentrations. Controlling this type of contamination is now the subject of an intensive research effort at EPA. ■

ENVIRONMENTAL ALMANAC

A GLIMPSE OF THE NATURAL WORLD WE HELP PROTECT

July-August

RIVER SWIMMING

The National Park Service recently erected signs at its riverfront park area on the Shenandoah River at Harpers Ferry National Historical Park.

The signs state:

"NOTICE

Fast Current
Very Deep Water
Slippery Bottom
Steep Drop Offs
Polluted Water

PARENTS WATCH CHILDREN"

Despite these ominous warnings, hundreds of visitors to the park on a recent sultry holiday weekend were swimming, floating and wading in the river at this site.

Also in the water were several barking and tail-waving dogs. Occasionally the dogs would emerge and shake off their excess water, often near a group of indignant picnickers.

Shrieking children splashed each other. A few adventurous young swimmers rode head first and stomach down through the swift currents where the river found passage between huge boulders.

Three youngsters perched on a large rubber inner tube bobbed over a small rapid. With their arms tightly wrapped around each other and giggling uncontrollably, they rode their slowly revolving craft until it reached calm water.

Near the middle of the river men and women sunbathed on large rocks. A few who had brought their rods were fishing.

While EPA and the Park Service are making major financial contributions to help build a large waste treatment plant at Harpers Ferry, where the Shenandoah joins the Potomac River, the plant will not be completed until next year.

Also still the victim of many

pollution problems, despite a massive cleanup effort by EPA and State and local governments, is the Potomac itself. Yet anyone hiking along the Chesapeake and Ohio Canal above Washington will find trails leading from the green sanctuary of the tow path to unofficial swimming areas in the Potomac. And across America this summer, especially in rural areas, the sound of laughter and splashing can be heard in the country's rivers, creeks, and lakes.

In addition to such hazards as pollution, treacherous currents, and slippery bottoms, there is the danger of water so murky that attempts to find an injured and sinking swimmer are often extremely difficult.

Despite the obvious dangers, local, State and Federal officials are unable to stop people from swimming in rivers and lakes on a scorching afternoon. Jumping into the old swimming hole is a tradition which continues.



We've talked to many local and State officials who earnestly explain how much more sensible and economical it would be if people would just accept the idea of using modern, sanitary, and relatively safe swimming pools.

However, Congress, recognizing the great appeal of swimming in natural waters, set as a goal in the Federal Water Pollution Control

Act the achievement, by July 1983, of water that is clean enough for swimming and other recreational uses wherever possible.

For rivers have an attraction that no chlorinated artificial pool can ever match, no matter how safe and sanitary.

Swimming in a river or creek you are exposed to constantly changing sensations. The natural setting is always varied, never still.

For example, the Cacapon River in West Virginia, one of the Potomac's most beautiful tributaries, has banks carpeted with trout lilies and phlox in the spring while black eyed susans, the white button bush and masses of orange day lilies provide color in summer.

The sunlight reaching the river is dappled as it filters through huge elm and sycamore trees that arch almost across this small waterway.

Swimming in the Cacapon on a recent afternoon you could glide up to within a few feet of turtles dozing on rocks and floating logs before they suddenly awakened and slid into the water.

Floating on your back you could watch the clouds sailing by overhead. Darning needles zig-zagged by on their gossamer wings. A pileated woodpecker screamed its wild call as it returned to its nesting hole.

As dusk descended, some boys in the distance began skipping rocks across the water. The circular dimples grew smaller and smaller until the rock sank. The river surface then became mirror calm.

Far away a whippoorwill hidden behind a wall of green shrubbery began its insistent call.

It is experiences like these that help you understand Justice Holmes' observation that a river is "a treasure."—C.D.P.

LABORATORY DEDICATED AT NARRAGANSETT

By Van Trumbull

EPA's new \$4 million Environmental Research Laboratory was dedicated recently at Narragansett, R.I., with short talks by two U.S. Senators, a week-long open house for 3,500 visitors, a scientific symposium, music ranging from classical string trios to rock-and-roll, several picnics, and a sailing regatta.

Sitting on a grassy bank overlooking Narragansett Bay, which sparkled in the morning sun, more than 300 persons heard Sen. Claiborne Pell, Rhode Island's senior Senator, give the dedicatory address.

Sen. Pell praised EPA's research and development work in preserving the natural resources of the biosphere. It is particularly appropriate, he said, that the Agency's major laboratory concerned with marine ecology should be located on Narragansett Bay, in the "Ocean State." Oceans and estuaries constitute a vital part of the environment that must be protected to sustain human life.

Pell said he hoped that some kind of international environmental impact study would soon be required before any single nation takes an action that can affect the quality of ocean waters and their plant and animal life.

Rhode Island's junior Senator and former Governor, John A. Chaffee, also spoke, as did Dr. Wilson K. Talley, former EPA Assistant Administrator for Research and Development, and Dr. Clarence M. Tarzwell, director of the laboratory until he retired five years ago.

Dr. Tarzwell recalled the founding of the laboratory under the Federal Water Quality Administration, an EPA predecessor agency, 12 years ago in rented quarters at the University of Rhode Island, West Kingston. "We were nine miles from the bay," Tarzwell said, "and had to carry the seawater for our experiments in and out in tank trucks."

The laboratory was moved to its shore location in 1973, and seawater is now piped to its testing tanks. The new addition more than doubles the space available for research work, and many new facilities and improvements have been added. Total cost of the

expansion was \$4 million, and the total new floor space for wet labs, dry labs, offices, and support facilities is 51,000 square feet. About 85 scientists and other professionals work there, as well as a support staff of 45 persons. Dr. Eric D. Schneider has been Director of this laboratory since 1972. Dr. Frank G. Lowman is Deputy Director.

In concluding remarks, Dr. Schneider praised the people of Rhode Island for their support of EPA's marine work and their confidence in the ultimate success of protecting ocean life and resources. The new laboratory with its fine equipment will help a great deal, he said, but "the collective energy and enthusiasm" of its staff "is still the greatest resource we have at the Narragansett Laboratory."

A symposium on "The State of Marine Environmental Research" was held at the laboratory with 29 technical papers presented by scientists from EPA, research institutions, and ten universities ranging as far as Hawaii and Miami. These papers will be published. Keynote speaker for the symposium was the famed ecologist, Dr. Eugene Odum, of the University of Georgia, who said the three E's, "environment, energy, and employment are synergistic," that is, they work together and reinforce each other.

The laboratory specializes in research needed to find ways to restore and protect the quality of coastal and marine water and to maintain healthful and productive habitats for ocean life. Its principal divisions include:

* Bioassay methods—development of test systems to determine the effects of pollutants on marine life.

* Ecosystems analysis—simulating ocean environments in the lab to learn how natural populations of plants and animals live and react to environmental changes.

* Oils—a special research effort on the effects of petroleum products in seawater.

* Response parameters—are there early indicators, short of death, of a pollutant's presence: changes in behavior, motility, feeding?

* Marine culture—how to grow fish and other marine animals from eggs and larvae and rear them successfully for use in laboratory research.

The laboratory at Narragansett is part of

what Sen. Pell called a "golden triangle" of marine science on the Bay. Just south of the EPA lab is the Bay Campus of the University of Rhode Island, with its own marine lab, pier, research vessels, and Graduate School of Oceanography. Across the road to the west is a research station of the National Marine Fisheries Service of the Commerce Department's National Oceanic and Atmospheric Administration.

There is a good deal of formal and informal information exchange among the three components of the triangle, according to Dr. Schneider. Scientists in each component are stimulated by the presence of the other two, and 38 university students are doing research for their degrees under EPA scientists.

The week-long celebration of the new EPA laboratory began on Sunday, June 12, with an open house for all construction workers who had built the laboratory. All employees of the Cumberland Construction Co., associated contractors, and their families, were invited to visit the lab and bring their lunches. Picnic tables, chowder, beer and soft drinks were provided. About 300 persons attended, toured the facilities and witnessed the exhibits of the laboratory's work.

From Monday through Thursday that week four 90-minute lab tours per day were conducted for invited groups of students, senior citizens' clubs, environmental and public interest groups from all over the State.

A 60-foot tent on the grounds (occupying a flat clay court usually used for noon-time volley ball games) housed exhibits by a dozen public and private organizations concerned with fisheries, marine resources, and oceanography.

The 110-foot barkentine *Barba Negra* (Black Beard) sailed from New London, Conn., to moor at the University pier for the week, was open to visitors. Now owned by the environmental group SOS (for Save Our Seas), the 81-year-old vessel was once a whale chaser. Its harpoon cannon are still in place, but its owners now work to preserve the whales.

Each day at noon there was a live concert of folk music, country music, barbershop singing, chamber music, or hard rock. Friday night there was a dedication concert by a jazz group, Roomful of Blues, and a mime

(Trumbull is a staff writer for EPA Journal)



performance by Michael Grando.

Throughout the week, Schneider said, more than 3,500 persons had visited the laboratory and seen exhibits created by each division to illustrate current work. These included gear for taking core samples of mud from the ocean floor, ingenious dredges and nets for gathering marine life from any desired depth, and scores of glass tanks containing lab simulations of various marine environments.

One popular exhibit was the "bugwatcher," a system for automatically tracking and recording the movement and behavior of tiny marine creatures. Developed under an EPA contract by scientists at Southeastern Massachusetts University, the bug watcher links a microscope and TV camera to a video recorder and a computer. Images of the "bugs"—in this display they were brine shrimp larvae about one millimeter long—are shown on a TV monitor screen and also converted to blips of light that the computer

EPA's new marine laboratory at Narragansett, R.I.

can read and trace. The computer then prints out diagrams that record each larva's motion, speed, and direction. This technique is expected to greatly simplify the analysis of animal behavior, which EPA scientists hope will provide more discriminating and faster clues to the presence of water pollutants.

Some exhibits involved the simple ABC's of ocean biology, centered on Narragansett Bay: varieties of clams, scallops, shrimp, seaweed.

Did you know you can make pudding from an alga called Irish moss? Cook it with milk

in a double boiler, then strain out the seaweed and chill. A card on the seaweed exhibit gave the recipe for "New England blancmange."

Especially popular with the younger visitors—and with a lot of the older ones too—was a shallow "touching tank" filled with live fish and shellfish. Tickle a lobster, scratch a shark, grope for a grouper. All very friendly and safe (the lobster's claws were rubber-banded). Every specimen in the touching tank came from the Bay except for one. This ringer was a large Dungeness crab from Oregon; EPA's netters just failed to catch a large enough native crab.

On the Saturday after the dedication, the laboratory sponsored a sailing race, over a triangular course that started and ended at the EPA pier. That afternoon there was a picnic for laboratory staffers and their families, followed by a staff talent show.

Then the outside exhibitors' tent and the speakers' canopy and bandstand were taken down and the volley ball net put back up. ■

AROUND THE NATION



teacher training

Forty teachers of auto mechanics in Massachusetts vocational high schools are receiving special training in the repair and maintenance of emission control equipment. Region I officials are cooperating in the program, which is funded by a \$5,000 grant from the U.S. Office of Education. Objective is to create a pool of qualified instructors for the next school year, who would be available to support a state-wide inspection and maintenance program.

environmental poll

New England residents rate water pollution control as the most important environmental problem, according to Region I's second annual opinion poll, published in the Regional newsletter and distributed at several conferences. Second priority was given to drinking water safety and third to the control of toxic substances. Land use controls and noise abatement were the areas of least concern among the ten items on the questionnaire.

pulp mill fined

The Scott Paper Co. recently paid \$52,000 in penalties for violating sulfur dioxide regulations in April and May at its pulp mill at Winslow, Maine. The consent decree stipulated July 1 as the absolute deadline for halting production at Winslow and opening a new, less polluting plant at Somerset, the construction of which has been delayed.



jersey takes over

Region II has delegated authority to the State of New Jersey to enforce air emission standards for new stationary sources and for hazardous air pollutants. Some aspects of asbestos and vinyl chloride enforcement are being retained by the Regional Office.

red hook plant

Region II has awarded New York City \$50.3 million in third-phase construction funds for the big Red Hook sewage treatment plant in Brooklyn. Work on this phase will start in October and be completed in three years. Total cost of the Red Hook project will be about \$500 million. It must be finished by December 1984.



vw air accord

Region III and Pennsylvania officials have agreed on specifications for allowing construction of a Volkswagen assembly plant at New Stanton, near Pittsburgh. The proposed plant, expected to employ about 5,000 persons, will emit hydrocarbons from paint spraying, and these emissions must be offset by reductions elsewhere in the area. The State agreed to switch to low-polluting asphalt for road repairs, reducing hydrocarbon emissions about 1,025 tons per year. The auto painting operation will be allowed only 900 tons per year of hydrocarbon emissions.

fine

An EPA administrative law judge has recommended that Philadelphia pay a civil penalty of \$225,000 for violating its interim ocean dumping permit. If upheld on appeal, it will be the largest penalty ever assessed under the Ocean Dumping Act. EPA charges the city with 32 violations, including failure to develop an on-land disposal system for sewage sludge and failure to inform EPA of its delinquency. The judge supported EPA's reporting procedures as reasonable and necessary for carrying out the law.



detective work

Investigations by Region IV enforcement officers and scientists were commended by Stanley Czarnecki, FBI Special Agent, in helping solve the case of the poisoned sewage plant in Louisville, Ky. EPA people identified the toxic chemicals that appeared in the plant in late March, sickening a number of workers with toxic fumes and putting the plant out of operation for two months. EPA also helped trace the chemicals to their suspected source, Kentucky Liquid Recycling Inc. Two officers of the company and one employee are scheduled to go on trial Oct. 24 on charges of violating the Water Pollution Control Act. Conviction can bring a year in prison and a \$25,000 fine.



detroit sued

At the request of EPA Region V officials, the Justice Department has started legal action against the City of Detroit for polluting Lake Erie with effluent from its sewage treatment plant. Regional Administrator George R. Alexander said Detroit is producing excessive amounts of phosphorus—40 percent of all phosphorus input to the lake—and contributing to the Nation's inability to meet its agreement with Canada on the cleanup of the Great Lakes. The city has passed its discharge permit deadline to give all its sewage secondary treatment by July 1. In the last two years it has violated monthly discharge limits 182 times and daily monitoring requirements 648 times.

erie survey

An extensive survey of phosphorus pollution in Lake Erie began in May when scientists from Ohio State University sailed from Cleveland in EPA's research vessel Hydra II. The 65-foot ship has been on loan to the University for four years. It will make eight cruises this year to sample the phosphorus content in all parts of the lake, with particular attention to the area near Sandusky and Lorain, Ohio, where the lake is shallow and warm and close by Detroit's pollution. Last year's surveys found the lake water quality "not getting better, but not getting worse either."



offset troubles

Region VI officials have been actively carrying out EPA's "offset policy" which allows new industrial plants that will pollute the air to be built only when counter-balancing reductions are made in air pollution elsewhere in the area.

Legal action was started against the Corpus Christi Petrochemical Co, in Corpus Christi, to halt construction of an ethylene plant. EPA alleges that the company cannot demonstrate that its emissions would not increase pollution in an area that already exceeds the ambient air standards. The construction permit issued by the Texas Air Control Board is invalid, EPA says, since it violates the State's implementation plans.

Similar notices of violation have been served on Arco/Polymers, Inc., Port Arthur; Monsanto Co., Alvin; and Daubert Chemical Co., McKinney. The offset policy was tested successfully in Region VI earlier this year in Oklahoma City, Okla., when EPA officials obtained agreements from several area firms to reduce their emissions to offset those of a new General Motors auto assembly plant.

dumping hearing

A public hearing will be held in New Orleans July 26 on the Ethyl Corporation's request for a three-year permit to dump sodium-calcium sludge in the Gulf of Mexico 50 miles south of the Mississippi River's Southwest Pass. Industrial waste dumping in the Gulf has been reduced more than 90 percent in the past two years. Toxic waste dumping has been halted entirely, and the disposal of non-toxic sodium-calcium and biological sludges is expected to end in the next few years.



environment day

Kansas City celebrated World Environment Day June 5 with flags, jazz bands, river boats, and a large blue and white tent filled with educational exhibits.

Seventeen groups ranging from the Audubon Society to the Zoo sponsored booths and displays. EPA's Region VII Office demonstrated emergency response operations and offered free literature, posters, and litter bags. Two bands provided music for the strollers, picknickers, and frisbee throwers in the river side park. Girl Scouts did their good turn by picking up litter and leaving the park clean.

mighty mo

An hour-long documentary, "The Mighty Missouri," had its premiere telecast May 17 over Station KCPT, Kansas City. Funded by Region VII, the film covered the 2,500-mile river through nine States, illustrating the environmental issues affecting the river, its tributaries, and the Great Plains area it drains. The program has been made available to stations and regional networks of the Public Broadcasting Service.



salt lake forum

Deputy Administrator Barbara Blum presided at EPA's third Environmental Forum in Salt Lake City, Utah, July 19. She had breakfast with community leaders and meetings with Utah Governor Scott Matheson, Salt Lake City Mayor Ted Wilson, and officials of the Utah Health Department.

colorado i & m

The Colorado legislature passed a law requiring inspection and maintenance of auto emission control systems just before ending its session the first week in June. All 1977 and later model automobiles registered in nine Colorado counties will have to be inspected annually, starting in 1980. The cost will be \$5.20 per car. Many environmental groups are recommending an amendment to include 1975 and 1976 models. The nine counties are those of the "front range," covering metropolitan Denver and a widening area to the east, where Colorado's air pollution is most severe.



sewage to land

Region IX has approved a \$1.35-million grant to Brawley, Calif., for a land disposal system for its sewage. The city of about 15,000 in the Imperial Valley, 90 miles east of San Diego, will buy farm land and irrigate it year-round with wastewater from a plant that gives the sewage only primary treatment (gravity settling of solids). This wastewater is now discharged into the New River in violation of the Regional Water Quality Control Board's standards. The city will not have to build a secondary treatment plant, and the value of the crops—sugar beets, wheat, and cotton, in rotation—will help defray operating costs. "In a time of severe drought," said Sheila Prindiville, who heads the Region's Water Division, "any program that fosters water reuse is valuable." The Brawley system, she said, would save money and break new ground in the Nation's approach to wastewater discharges.



noisy pumps

Many Northwest homeowners, installing heat pumps to save energy, find themselves in another environmental bind: too much noise. The reversible energy exchangers that cool a house in summer and warm it in winter—often at a net saving of fuel—can produce more than 70 decibels of sound. State and local noise ordinances generally limit nighttime noise in residential areas to 45 decibels. In Seattle EPA regional officials have received dozens of heat pump noise complaints in the last year, and they have no jurisdiction. Seattle city officials received five complaints in a recent week. The solution may lie with manufacturers building quieter products, according to Debbie Yamamoto, who heads the Region X noise control program. An EPA study of home equipment noise and its effects is under way, she said. The results will help determine if EPA will recommend noise rating labels for such equipment, or noise emission standards, or both.

REACHING OUT TO THE PUBLIC

"Government officials can't be sensitive to your problems if we are living like royalty here in Washington . . . My Cabinet members and I will conduct an open administration, with town hall meetings across the Nation where you can criticize, make suggestions and ask questions."

—From President Carter's first "fireside chat"

Fred Zengel is a resident of Stone County, Arkansas. He has been working with a local environmental group to stop airplanes from spraying a herbicide called 2,4,5-T, used to turn overgrown land into pasture. Zengel and his friends, along with many residents of the county, feel that the use of 2,4,5-T poses a serious threat to their health. They recently gathered enough signatures to have the "stop spraying" issue placed on a ballot for a referendum. It lost by only 60 votes, but they have not abandoned their effort.

In mid-May, a friend of Fred Zengel's received an open invitation to attend a meeting

called an American Environmental Forum sponsored by the U.S. Environmental Protection Agency. The invitation read, in part, "This is your opportunity to . . . tell our top people what you think of us, and why. We guarantee that we will be listening, and that you will get answers."

The forums are part of a major effort by EPA's new leadership to solicit opinion from citizens around the country.

EPA's first American Environmental Forum in a nationwide series was held in Little Rock on May 24 in the city's Convention Center Exhibit Hall. The meeting featured

Barbara Blum, the Agency's Deputy Administrator. Nearly three hundred people were in attendance. The first speaker was Fred Zengel.

"You, the EPA, are the Federal Agency with whom the authority and the responsibility lies for regulating this herbicide 2,4,5-T," he told Ms. Blum. "You have done so to some extent in banning its use around homes, waterways, and on food crops, excepting rice.

"We want to know when you are going to finish the job and extend the ban to cover the use of this herbicide on rangelands, forests, right-of-ways, and rice crops."

Blum told him that EPA is soon going to place 2,4,5-T in a special category for review and reconsideration of its remaining uses. He thanked her and later remarked to an EPA Journal reporter, "I think this forum has been a good thing. I don't know how else ordinary people could gain access to such a high-ranking official." Before the meeting was over, Blum would engage 27 other people in face-to-face discussions about environmental issues.

Barbara Blum arrived in Little Rock at 11:15 a.m. on the day of this town meeting. The headline of the local morning newspaper read "President Proposes Steps to Strengthen Environmental Goals." At an airport press conference, she answered reporters' questions about Mr. Carter's freshly announced Environmental Message, and explained, "The reason we're here today is because we felt this city is very much a part of the mainstream of America. The environmental problems you have are very similar to the problems that people have in other places."

At the news conference, Mayor Don Mehlberger presented Blum with a key to the city.



Administrator Costle exchanges views with citizens in Portland, Ore.

After the press conference, the Deputy Administrator met with Governor David Pryor, who earlier in the day had issued an official Proclamation declaring May 24, 1977, as Arkansas Environment Day. The Proclamation stated, in part, "I hereby proclaim Arkansas Environment Day in the spirit of the efforts to achieve and preserve environmental tranquility for our State and Nation, and call upon the people of our State to support the first American Environmental Forum by their attendance and participation."

Before the actual Environmental Forum, Blum held meetings with environmental leaders and with businessmen.

In remarks made at the outset of the Environmental Forum, Blum said, "What we're doing today is coming out and bringing EPA to the people. The President feels, as we have long felt, that the best kind of Government is the Government that comes from the people.

"We are not here to make speeches to you. We want to hear from you about how you feel about the problems in your area, how you feel about the problems nationally, and how you feel we can best help you. I want to know what I can take back to Washington to help in developing a policy in the new Administration.

"Much of our responsibility is mandated by Congress, and we don't have any control over what Congress tells us, but we can tell Congress what we hear the people say, just as you can tell your Congressmen and your elected representatives."

Three weeks after the town meeting in Little Rock, Administrator Costle participated in his first American Environmental Forum on June 15, before 250 people in Lincoln Hall Auditorium on the Portland State University Campus, Portland, Oregon.

Costle told the Forum that "Oregon has been a leader in the Nation in environmental protection. We know you have the best basketball team in the Nation, the Trail Blazers, but we have known for a long time that Oregon was a trailblazer in environmental matters.

"We have come to Oregon to conduct a town hall meeting and we will be back to hold more of them. It is President Carter's determination to get his appointees away from their Washington desks and out to talk to the people.

"It is important to me not to get trapped in the Washington, D.C. syndrome, separated from the rest of the country by the Potomac River."

While in Portland, Costle met with Oregon Governor Bob Straub to discuss environmental matters. Like Blum, he also held discussions with area environmentalists and businessmen.

American Environmental Forums featuring



Deputy Administrator Barbara Blum speaking at press conference in Little Rock, Ark.

either Administrator Costle or Deputy Administrator Blum are scheduled for several cities around the Country in order to bring people more into the decision making process of the Federal government. But EPA is also involved in other outreach programs.

For example, on June 8 and 9 at the Park Plaza Hotel in Boston, EPA and the U.S. Department of Commerce jointly sponsored an Industry Conference. The meeting attracted about 265 members of the business community from the New England area.

The Industry Conference focused on how managerial and technological changes could be introduced by companies to meet Federal clean water standards for discharges of wastes. Among the many participants who addressed the conference were EPA Administrator Douglas Costle, Department of Commerce Assistant Secretary Jordon Baruch, and Massachusetts Governor Michael Dukakis.

A similar Industry Conference in Chicago preceded the Boston conference, and several more are being scheduled. The next one will be in Dallas on September 8 and 9. Along with Administrator Costle, it will feature Department of Commerce Secretary Juanita M. Kreps.

In the future, EPA plans to conduct open meetings with groups from all regions of America. "I have met with more than 200 groups including manufacturer's associations, farmers, industries and labor people since I assumed my post," Administrator Costle said. "We will be seeing a good cross section of people." ■



EPA Administrator Douglass M. Costle explains an environmental issue at a press conference in Portland, Ore.

FIREWOOD

THE POOR MAN'S ENERGY CRISIS

A growing shortage of firewood is causing "a poor man's energy crisis" in the developing nations where firewood is often the only available fuel.

This disturbing development is reported in the "State of the World Environment 1977," the first report of the executive director of the United Nations Environment Program, Dr. Mostafa Kamal Tolba.

The report recognizes some successful attempts to protect the environment but warns that in four major areas man's activities are endangering the environment.

In addition to firewood depletion, other areas of immediate world concern raised in the report are reduction of the ozone layer, soil loss and environmental cancer.

Wood is the fourth most important source of energy in the world after oil, coal and natural gas, the report notes.

"In rural areas of the Third World where wood is readily available, nearly 95 percent of households use it as a primary source of energy, according to the report.

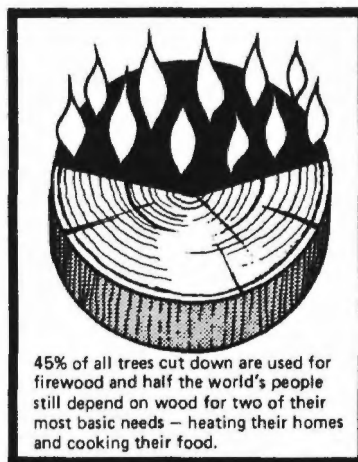
"Since the greater part of firewood production and usage takes place outside commercial channels and therefore goes largely unrecorded, as much as substantially over half the world's wood crop could be burned as fuel. In developing regions, the proportion is much higher; according to Food and Agricultural Organization statistics, 93 percent of wood cut in Africa south of the Sahara is used as fuel, and 86 percent is so used over all the developing world."

The magnitude of firewood consumption in the world, especially in the developing countries, as well as its significance in the everyday life of well over two billion people, was not realized until recently, the report states.

Most firewood is for family use. The collection and transport of wood in rural areas is mainly by human and animal labor so it is normally gathered from areas within walking distance of the consumer. In India and in Africa south of the Sahara, firewood is in such short supply that villagers may travel up to 50 kilometers (more than 30 miles) to gather it and bring it home.

In some regions the search for firewood is helping to create new deserts. In much of

India forests are rapidly declining. "With the growth of human population, the forests are being cut down faster than they can grow, partly to make room for new farmlands, and partly for use as fuel. As a consequence, the upland areas—the watersheds for the great rivers which flow through the plains—are subjected to destructive erosion, while the resulting sediments cause rapid filling of reservoirs. Destructive floods downstream severely reduce the cover of cultivable soil and the food which can be produced from it."



Elsewhere the search for firewood is helping to create new deserts. In some countries dung is burned because of the shortage of firewood. Not only does this deprive the land of essential nutrients which should be returned to the soil, but it causes severe air pollution which can be grossly harmful to health.

The Ozone Layer—The UN report also focuses upon the problem of ozone. Ozone, a compound of oxygen, is found in naturally small quantities—usually no greater than one part per 100,000 parts—in the stratosphere. Nevertheless, this small amount acts as a shield to protect the Earth from the sun's harmful ultra-violet radiation. Without this protection, life on Earth would not exist. But the layer is fragile and could be destroyed by a number of chemicals discharged on Earth. The UN report stated that chemicals such as those used for aerosol propellants and refri-

gerants are already thought to have reduced the ozone layer by one percent, and if releases continue at 1973 rates, they could cause as much as a three percent reduction in ozone by the year 2,000 and up to a 10 percent reduction by 2050. Other threats to the ozone layer noted by the report are the accelerating use of nitrogen fertilizers and the possibility of a large-scale nuclear war which could blast enough nitrogen oxides into the atmosphere to reduce the ozone layer by as much as 70 percent for a period of from five to 10 years.

Cancer—The report estimates that in developed countries, cancer is now responsible for 17.2% of all deaths, and that somewhere between 60-90% of those cancers may be, in some way, environmentally linked. Although it is difficult to establish causal factors, a number of chemical compounds have been identified as carcinogens and many more are suspected as being so. Many thousands of others are entering the biosphere and may act in concert with others to increase the incidence of cancer, or susceptibility to it.

Losing ground—The world is literally 'losing ground' through erosion, salinization, desertification, and urbanization. It is estimated that the present rate of erosion may be as high as 2500 metric tons per year, or 1/2 ton for everyone on the planet. The intensification of agriculture in marginal lands, overgrazing, overcultivation and policies like slash and burn in various parts of the world have made soil erosion and desertification most difficult and pressing problems facing the world community. Programs for adding more agricultural land may not catch up with the degradation and competing uses. For long-term productivity the carrying capacity of the land will have to be ascertained and respected.

The 1977 report concludes:

"In order to create better conditions of life for a greater proportion of mankind in an environment which is not being damaged irreparably, an international collaboration on a scale not seen so far in the history of mankind is essential. Planned action towards integrated environmental management is necessary rather than incremental ad hoc steps taken for environmental protection."

The UN report was released to the public on June 1, World Environment Day. □

PEOPLE



Kathleen Quinn Camin will head EPA's Region VII Office in Kansas City. She succeeds Jerome Svore in that post.

Camin is currently Associate Dean, College of Business Administration Wichita State University, Wichita, Kansas. She received a bachelor's degree in government from Smith College in 1957, did graduate work in social sciences at the Institute of Social Studies, the Hague, Holland, and in economics at the University of New Mexico. Camin received her Ph.D. in economics at the University of Missouri in 1969.

She has done extensive research into strip mine reclamation in Kansas, Missouri, and Oklahoma; directed workshops for an EPA program, "Citizens' Role in Water Quality Control"; and completed the first national study on water pollution generated by the meat-packing industry.

Carol M. Thomas, Director of EPA's Office of Civil Rights, has been named Secretary of the Federal Trade Commission. Thomas, who held the Headquarters civil rights post since 1972, joined the Agency in 1971. Thomas served previously with the Peace Corps. His earlier government experience includes positions with the Office of Economic Opportunity and the Navy Department.

David G. Hawkins has been recommended for the post of EPA Assistant Administrator for Air and Waste Management. The recommendation to the White House was made by EPA Administrator Douglas M. Costle. Hawkins has been a staff attorney for the Natural Resources Defense Council since 1971. He dealt with a wide range of air pollution issues including transportation controls, air quality maintenance, indirect source controls, steel industry compliance, hazardous emissions from smelters, new source review in non-attainment areas, lead, and energy. From 1970-1971 Hawkins was an environmental attorney at Stern Community Law Firm, a foundation-supported public interest firm in Washington, D.C. He taught school in New York City from 1967-1969. Hawkins received a bachelor's degree in English from Yale University in 1965 and a doctor of law degree with high honors from Columbia University Law School in 1970.

Alice Brandeis Popkin has been chosen to direct EPA's Office of International Activities. Mrs. Popkin is an attorney/professor at the Antioch School of Law. She serves on the National Assembly of National Voluntary Health and Social Welfare Organizations, and is a consultant for the National Collaboration for Youth.

She earned a bachelor of arts degree, Phi Beta Kappa, with high honors from Radcliffe College in 1949. She graduated from Yale Law School in 1953 and was a Member of the Board of the Yale Law Journal. Popkin was a member of the original staff that set up the Peace Corps. She served as Director of International Programs for the Corps from 1961-1963. From 1964-1966 she was a representative of the Experiment in International Living in Morocco. From 1967-1972 Popkin co-directed a research project for the Georgetown Institute of Criminal Law and Procedure. During 1971-1972 she also worked on the Youth Involvement Program of Children's Hospital of Los Angeles. From 1972-1974 Popkin was Special Counsel for the Senate Subcommittee to Investigate Juvenile Delinquency.

William Drayton, Jr., has been nominated for the post of EPA Assistant Administrator for Planning and Management. Before his appointment, Drayton was a lecturer at Harvard University's Kennedy School of Government in the field of public regulation and management reform. He was also a management consultant for McKinsey and Company in New York City.

Drayton had been employed by McKinsey and Company since 1970. He had been on leave from the firm since 1975 to serve as a visiting associate professor at Stanford Law School in 1975-1976 and hold his lecturing post at Harvard. In 1976 Drayton worked on the Carter-Mondale campaign and the transition staff on regulatory reform and reorganization.

Drayton received his bachelor's degree from Harvard University, a master's degree from Balliol College, Oxford University, and a doctor of law degree from the Yale Law School.

Dr. John K. Burchard has been appointed Senior Research and Development Official at EPA's research facility at Research Triangle Park, North Carolina. Burchard, Director of EPA's Industrial Environmental Research Laboratory at Triangle Park, has been with the Agency since 1970. Prior to that time, Burchard was with private industry in California. Burchard received his undergraduate degree in chemical engineering from Carnegie Institute of Technology (now Carnegie-Mellon University) in Pittsburgh, Pennsylvania. He also received his M.S. and Ph.D. degrees from that institution.



Eckardt C. Beck has been appointed Administrator for EPA's Region II office in New York City. He has been Deputy Assistant Administrator for Water Planning and Standards, Office of Water and Hazardous Materials, for the Agency since 1975. Beck will succeed Gerald M. Hansler.

Before joining EPA, Beck was Deputy Commissioner of the Connecticut Department of Environmental Programs for several years, in charge of the State's air, water, radiation, pesticides, noise, and solid waste management programs. Earlier he helped to establish the State energy agency, acted as the agency's first administrator, and was chief energy advisor to the Governor.

Beck graduated from Emerson College in Boston, did graduate work there in communications, and went on to earn a master's degree in public administration from New York University in 1972, where he is now a doctoral candidate. He attended the Yale University Graduate School of Epidemiology and Public Health and holds a Graduate Certificate in Air Pollution Administration from the University of Southern California Graduate School of Public Administration.

Continued



George Alexander, Jr., has been reappointed as Regional Administrator of the Chicago EPA Office, a post he has held since March 1976. He joined the Agency in 1972 as Deputy Regional Administrator of the Dallas office. In 1974 he became Deputy Director of the Office of Regional and Intergovernmental Operations in Washington. Alexander was awarded a Bronze Medal for exceptional service to the Agency in 1974.

He had a private law practice and held executive positions with several companies before entering the government service.

Dr. Gilman Veith, analytical organic chemist for EPA's Environmental Research Laboratory, Duluth, has been selected to receive the 1977 Environmental Chemistry Award of the Synthetic Organic Chemical Manufacturers Association. The award recognizes outstanding accomplishments in environmental organic chemistry "which contribute in a significant way to improving the Nation's environment and the general welfare of its citizens." Veith's selection was based upon his explanation of the role of polychlorinated biphenyls (PCB's) in environmental contamination. His work has been instrumental in the development of legislative controls on the discharge of these chemicals into the environment. A gold medal plus a \$1,000 honorarium, will be presented at the association's September 1977 meeting in New York City.

Donald B. Mausshardt has been named Executive Assistant to the Deputy Administrator, and Director, Operations Coordination. He was formerly Deputy Director of the Office of Intergovernmental Relations. Mausshardt has worked for EPA and predecessor agencies since 1964. His Agency service includes positions as Chief, Implementation Branch, Solid Waste Management Program; Chief, Technical Support Branch, Region X; and Chief, Laboratory Support Branch, Region X.

Marvin B. Durning has been recommended to President Carter by the Administrator to head EPA's Office of Enforcement. If approved by Congress, Durning will replace former Assistant Administrator for Enforcement Stanley W. Legro. Durning, 47, has been in private law practice in Washington State for the past 18 years. He was a partner in the Seattle law firm of Durning, Smith, and Brucker. After receiving a bachelor's degree with honors from Dartmouth College, Durning studied at Oxford University under a Rhodes Scholarship for 2 years. He holds a law degree from Yale University Law School. Throughout his career Durning has been involved in major land use planning, transportation, and energy litigation. In 1966, he received the Conservationist of the Year award from President Johnson. Born in New Orleans, La., Durning is married and has three children.

Dr. Alphonse F. Forziati has been appointed Director of the Stratospheric Modification Research Staff in EPA's Research and Development Program. He has been the Executive Secretary of the Environmental Measurements Advisory Committee since 1974.

Dr. Forziati received his bachelor's, master's, and doctorate degrees from Harvard University. He was a research associate for 20 years with the National Bureau of Standards. Forziati also did research for the Department of the Army and the Department of Defense before joining the Federal Water Pollution Control Administration of the Department of the Interior in 1966.



Paul DeFalco, Jr. has been reappointed as Administrator of EPA's office in San Francisco. A long-time career official, he has held that position since September, 1971. Before his appointment as Administrator, DeFalco served as EPA's Interim Regional Administrator in San Francisco and Regional Director for the Federal Water Pollution Control Administration's Pacific Southwest Region. He had previously served as Director of the Hudson-Champlain Comprehensive Water Pollution Control Project and the Raritan Bay Project. He was also involved in studies of the Delaware River, Narragansett Bay and the Connecticut River. Before joining the Federal Government, he was with the Interstate Sanitation Commission, an agency serving New York, New Jersey and Connecticut.

Dr. Gunter Zweig of EPA's Criteria and Evaluation Division, Office of Pesticide Programs, has won the 1977 Harvey W. Wiley Award. The award is presented annually by the Association of Official Analytical Chemists. Zweig joined the Agency in 1973. He received a bachelor's degree from the University of Maryland in 1944, and a doctorate there in 1952. He will address the Association in October on "A Status Report on the Technology of Pesticide Residue Analysis."

Joan Bernstein who has had 25 years experience as an attorney in government and private practice, has been appointed EPA's new General Counsel.

A native of Galesburg, Illinois, Bernstein was a partner in the law firm of Baker, Hostetler, Frost and Towers, Washington, D.C. before joining the Agency. From 1970 to mid-1976, she served in various capacities with the Bureau of Consumer Protection of the Federal Trade Commission. In addition to serving as a trial attorney at the FTC, she has also held positions as Assistant to the Director, as well as Deputy and Acting Director of the Bureau of Consumer Protection there. Prior to her government service, Bernstein was employed by various private law firms in New York, Chicago and Washington, D.C. Throughout her legal career, she has been active in administrative and anti-trust law. A graduate of the University of Wisconsin, Bernstein earned a law degree from Yale University where she was a member of the Board of Editors of the Yale Law Journal.

Steven D. Jellinek has been recommended to the White House by Administrator Costle for the position of Assistant Administrator for Toxic Substances. Jellinek was Staff Director, Council on Environmental Quality, a position he held since 1973. He had been a staff member at CEQ since 1971. He served as Special Assistant to the Assistant Commissioner for Compliance, Internal Revenue Service, from 1969-1971. He had held various personnel management and administrative positions with the IRS after joining this Agency in 1961. Jellinek received a bachelor's degree in political science from the University of Rochester in 1960 and a Master of Public Administration from the Maxwell School of Citizenship and Public Affairs, Syracuse University in 1961. In 1969-1970 Jellinek was a Public Affairs Fellow at Stanford University.

Joan Martin Nicholson, an environmentalist, has been named Director of EPA's Office of Public Affairs. In 1971, Nicholson founded the Bolton Institute, a non-profit organization dedicated to helping people find practical solutions to environmental problems. She was its President until 1976.

Nicholson served on President Carter's Energy Task Force, preparing the paper on Energy Conservation. She is a member of many energy and environmental organizations, including the Board of Directors of the Center for Environmental Education. As a consultant in 1972-73, Nicholson designed and established a national dissemination and information network for the Office of Environmental Education at the Department of Health, Education, and Welfare. Her experience includes service with the Agency for International Development, and the Office for Economic Opportunity. She received a bachelor's degree from Allegheny College in political science/international studies. Her most recent position has been as Senior Coordinator for Public Interest Relations for the American Petroleum Institute, where she also served on the API Energy Conservation Task Force.

Richard Dowd has been named Scientific Policy Advisor and Staff Director of the Science Advisory Board. This position replaces the Science Advisory Board Executive Secretary post that was vacated by Dr. Thomas D. Bath in May.

He was most recently employed as principal analyst for the Congressional Budget Office. From 1972-1975 Dowd worked for the Connecticut Department of Environmental Protection, first as Director of Planning and Standards, then as Assistant Commissioner. He was a research scientist for the Center for Environment and Management in Hartford, Conn. from 1970-1972 and taught physics at Tufts University from 1965-1970. He has published numerous papers and articles on physics, and environmental topics. Dowd received his bachelor's degree from Yale University in 1960. He earned a master's degree at the University of Wisconsin in 1962 and a doctorate in 1965.

Bernard J. Steigerwald, Director of the Office of Regional Programs for EPA's Office of Air Quality Planning and Standards, Durham, N.C., was the 1977 recipient of the Richard Beatty Mellon Award. This award, which was presented in Toronto, Canada, on June 21, is given to an individual who has contributed substantially to the abatement of air pollution. The Air Pollution Control Association presented the award to Steigerwald in recognition of his "outstanding leadership and achievement in initiating and directing the U.S. Environmental Protection Agency's program for the development and approval of State implementation plans," as well as his continued efforts in revision of these plans to achieve national ambient air quality standards.



William R. Adams, Jr. has been named to replace John McGlennon as Administrator of the Boston EPA Office. Adams was Commissioner of the Maine Department of Environmental Protection, a post he held since 1972, and Chairman of the State Board of Environmental Protection. He was Director of Maine's Environmental Improvement Commission from 1969-1972. Adams was Director of Public Works in Lewiston, Me. from 1965-1969, and held municipal and private engineering posts there between 1954 and 1965.

Adams is Vice Chairman of the New England Interstate Water Pollution Control Commission and is a member of the U.S.-Canada Committee on Water Quality in the St. John River. He received his bachelor's degree in civil engineering from the University of South Carolina in 1951, then served as an Ensign/Lt. Junior Grade with the U.S. Navy from 1951-1954.

Sheldon Meyers has resigned from EPA to take a position with the Nuclear Regulatory Commission as Director of the Division of Fuel Cycling and Material Safety. Meyers had been Deputy Assistant Administrator for Solid Waste Management since 1975. He was Director of the Office of Federal Activities from 1972-1975. Meyers joined EPA when it was formed in 1970. He previously served with the National Air Pollution Control Administration and the Atomic Energy Commission.



John H. DeFord has been named Director of the EPA Office of Administration in Research Triangle Park, N.C. Previously he was Director of the Contracts Management Division there. His earlier government service includes positions with the National Aeronautics and Space Administration and the Department of Health, Education and Welfare. He joined the National Air Pollution Control Agency, an EPA predecessor agency, in 1970. DeFord received a Bronze Medal for commendable service in 1976.

David R. Tripp has been appointed Chief of the Legal Branch for EPA's Region VII Office. Tripp has been with EPA since 1971. He has served as an Attorney-Advisor in the Enforcement Division and Assistant Regional Counsel. He earned his B.A. and J.D. degrees from Washburn University, Topeka, Kansas and a LL.M. degree from the University of Missouri at Kansas City.

Ralph N. Langemeier, Region VII Enforcement Division, has been selected to participate in the Education for Public Management Program at the University of Washington at Seattle. The program provides training and development to employees who have the potential to take increasing responsibility in direction of agency programs and policies. Candidates study management methods and subjects related to the mission of the agency at one of eight participating universities for nine months. Langemeier has worked for the Agency for five years. He has a bachelor's degree from the University of Missouri.

UPDATE

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

GENERAL PUBLICATIONS

Single copies available from the Printing-Public Information Center (PM-215), US EPA, Washington, D.C. 20460. (202-755-0890)

Air Pollution Literature (June 1977) This 8-panel leaflet explains what air pollution literature search services are available from EPA, to whom, and at what cost. It also lists sources for computerized literature searches and places to write for copies of articles and publications.

Clean Water and the Cane Sugar Industry (July 1977) Another in the water effluent guidelines series. This 16-page booklet examines what effect compliance with the Federal Water Pollution Control law will have on the cane sugar industry.

Films From EPA (Revised May 1977) An updated listing of films provided by the Agency, some on a free-loan basis, others for rent. The 12-page booklet gives several sources for films about the environment and tells how some can be purchased.

Fun With the Environment (Reprinted May 1977) A booklet that stimulates the interest of grade school children in ecology and the environment. The 16-page booklet encourages young people and their teachers to get involved in the President's Environmental Youth Awards Program.

Preparing for a New Coal Age (July 1977) A reprint of articles that appeared in the June issue of EPA Journal about the Nation's switch to coal in anticipation of the growing scarcity of oil. The stories look at the history of coal, new developments in cleaning the pollutants out of coal, reclamation of stripmined lands, and include an interview with Stephen J. Gage, Deputy Assistant Administrator for Energy, Minerals, and Industry.

Suspended and Cancelled Pesticides List (June 1977) This 16-page booklet alphabetically lists Agency actions on pesticides that have been

suspended, cancelled, or otherwise restricted. It will serve as a handy reference for people involved in pesticide regulatory work.

Where Do We Go From Here? (July 1977) A 10-page leaflet to inform elected officials about the water quality management program. It discusses the significance of Section 208 planning to communities and local decision-makers.

FEDERAL REGISTER NOTICES

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

Solid Waste Management EPA issues interim guidelines to assist State and local governments in identifying and aiding problem regions; effective 5-15-77. May 16, pp.24925-930.

Pesticide Products Containing Pronamide EPA issues notice of rebuttable presumption against registration and continued registration. May 20, pp.25906-911.

New Motor Vehicle Certification EPA issues notice of intent to amend regulations for light-duty vehicles and trucks. May 31, p.27669.

Pesticide Products EPA determines rebuttable presumption against registration of products containing diallate. May 31, p.27669-674.

Textile Industry Point Source Category EPA adopts final pretreatment standards for existing sources in seven subcategories; effective 6-30-77. May 26, pp.26979-984.

Registration of Pesticide Products EPA publishes national list of priority needs for minor use. May 27, pp.27479-505.

New Motor Vehicles and Engines EPA adopts emission defect reporting regulations; effective 7-5-77. June 2, pp.28130-131.

Vinyl Chloride EPA clarifies and corrects-emission standard; effective 6-7-77. June 7, pp.29005-29009.

New Motor Vehicles and Motor Vehicle Engines EPA announces results of Federal certification tests for 1977 Model Year to determine conformity with air pollution control standards. June 8, pp.29439-469.

Clean Air Act EPA identifies benzene as hazardous air pollutant; effective 6-8-77. June 8, pp.20332-333.

Water Pollution EPA allocates \$1 billion to States for carrying out the requirements of the Federal Water Pollution Control Act; effective 6-3-77. June 9, pp.29481-482.

COMING EVENTS

More information about these events and EPA participation in them is available from Walt Johnson (202) 426-8703.

EPA Seminars on the Expanding Role of the Consulting Engineer in Wastewater Treatment Plant Operations, Chicago, August 23-24; New York, September 13-14.

MOVIES

This film is available on a free loan basis from the EPA Office of Public Affairs, Region VII, Room 279, 1735 Baltimore Avenue, Kansas City, MO. 64108. (816) 374-5894:

A Matter of Understanding This 28-minute color film is about the coyote, the most numerous large wild canine predator in North America. The movie looks at how the coyote has pitted cunning, intelligence, and endurance against guns, traps, and poisons to adapt and survive.

Correction

Because of a typographical error the word "tanneries" was printed as "canneries" in the June 1977 issue of EPA Journal in a listing of industries discharging heavy metals into waterways. Canneries are not a significant discharger of heavy metals.

news briefs

EPA ORDERS MAJOR AUTO RECALL

EPA has ordered the recall of 220,000 Fords for failure to meet air pollution standards, and issued a report on 11 million other cars that are under investigation for possible recall. Deputy Administrator Barbara Blum said that "this recall is the latest in a series since 1973 in which approximately 7.3 million vehicles have been recalled for failure to meet air pollution standards. This repeated failure has occurred at the expense of public health. The recent air pollution alerts on the East Coast and elsewhere are graphic examples of the problem."

EPA JOINING SUIT AGAINST TVA

EPA has joined five citizen suits and one State suit charging 10 Tennessee Valley Authority electric power plants with violating Federal-State air pollution standards. "EPA has spent months trying to get TVA to comply with provisions of the Clean Air Act," Deputy Administrator Barbara Blum said, "yet the violations continue with little effort to achieve air pollution reductions. As the Nation's largest electric utility, TVA should be a showcase for energy and environmental coexistence." The Department of Justice on behalf of EPA will file intervening motions in the suits now before six U.S. District Courts in Tennessee, Kentucky, and Alabama.

NEW REPORT SUPPORTS SCRUBBERS

A new report on flue gas desulfurization (scrubbers) states that the only process with high sulfur dioxide removal efficiency widely available now is scrubbers. The report, titled "Flue Gas Desulfurization in Power Plants, Status Report" (April, 1977), summarizes the worldwide progress of scrubber technology in controlling sulfur dioxide pollution from power plants. Copies of the report are available from Jim Herlihy, Division of Stationary Source Enforcement, (EN-341), U. S. Environmental Protection Agency, 401 M St., S.W., Washington, D. C., 20460.



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READING SMOKE PUFFS

A machine that can puff all kinds and hues of smoke is now being used by EPA's Region II Office in New York City to help train smoke readers.

The trailer-mounted device can help EPA officials determine when a smokestack is violating air pollution regulations.

EPA's Region II Office in New York City has been using the machine since last November to train neophytes in the skill of smoke reading and to test veteran smoke readers to make sure their eyes are still accurate.

Robert Knox, Chief of the Region's Environmental Workforce Development Branch, says the machine is a great training device and will make a big difference in developing sound offense citations which can hold up in court.

John Accardi, Environmental Protection Specialist who conducts the classes, says the smoke generator "is not only the best way, it's the only way to train for 'method 9' in the Clean Air Regulations." Method 9 specifies that smoke or other emissions from a chimney or stack be judged by "a trained observer" for percent of opacity, the proportion of light that is cut off by the smoke plume.

About 50 persons have been trained and certified as smoke readers in Accardi's classes since November. The smoke generator has been lent several times to New York City for training its smoke readers.

The generator makes two kinds of smoke, black and white. Black smoke is made by burning toluene—a volatile hydrocarbon. At first Accardi used benzene for this purpose, but that fuel was discontinued this spring when it became known that benzene was a potential carcinogen. White smoke is made by vaporizing kerosene, producing a plume that looks like steam but lasts much longer than steam. The vapor is produced by dripping the kerosene on a heated plate.

The ability to read opacity of white and



black plumes—as well as intermediate combinations—is necessary because particulates in the plumes are responsible for the violations and may be of any color. Sooty black smoke is no longer the only bugaboo; pretty white smoke can have just as many tiny submicroscopic particles, and the emission standards limit the mass of particles released per volume of air. The best quick gauge of particulate mass is opacity, not color.

Two days of classes in meteorology and law are followed by smoke reading classes

and tests held in open country, away from other smoke sources. Trainees observe at least two stack heights from the machine. Each has a clipboard and tally sheet.

The trainees glance quickly at the plume just above the top of the stack, and mark down their estimates, from zero (completely clear) to 100 percent (completely opaque).

Each test puff of white or black smoke is measured by an electronic instrument called a transmissometer inside the stack near the top. This instrument has a light at one end and a photocell at the other. It gives exact readings of the plume's opacity, the percent of light cut off. These readings are automatically recorded on a strip chart.

For certification tests, the trainees must read 25 black and 25 white smoke samples that vary randomly over the full range, controlled by Accardi and recorded on the strip chart. The candidate's estimates cannot deviate from the true values by more than an average of 7.5 percent, with no single reading more than 15 percent off.

The reader's certification must be renewed every six months. When it was pointed out that this requirement seems more stringent than for airline pilots, whose physical exams are usually good for a year, Accardi replied:

"We're not testing any knowledge when we give a recertification test. 'The human being is like a piece of equipment here. We're recalibrating eyes.'"

The smoke generator, its instrumentation, and the trailer were built to EPA specifications by Environmental Industries, Cary, N.C. The stack is 16 feet high, but can be folded down for highway travel. Total cost was about \$10,000.

EPA scientists are working on automatic smoke reading devices that do not require any human judgment. Some industries have installed transmissometers in their stacks, but no device has yet been built that can read smoke opacity at a distance outside the stack.