inside EPA

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Whole Pond Filtered of Pesticide

An emergency team lead by EPA experts recently cleaned up a New Jersey pond contaminated with a deadly herbicide that threatened to get into local drinking water supplies and the Delaware River.

Water in the pond, which covers more than an acre near Clarksburg, 16 miles east of Trenton, had to be pumped out and filtered to remove the weed-killing chemical DNBP (dinitrobutylphenol).

The filtering equipment, mounted on a flatbed trailer and weighing 50 tons, was driven to the site from Milwaukee, Wisc., where the Rexnord Corp. had developed it under an EPA contract for just such emergencies.

"It was the first real-life test for this equipment," said Paul Elliot, EPA's on-the-scene coordinator. Elliott works for Region II's Emergency Response Branch, which is headed by William Librizzi. Others on the EPA emergency team included Michael Polito, Richard Dewling, David Andreassen, and Dr. Joseph Lafornara, of the Industrial Waste Treatment Research Laboratory. All are located at Edison, N.J., about 50 miles from Clarksburg.

Under their supervision, technicians from the Rexnord firm dammed the pond and pumped the water through five filters. The first two contained sand and powdered coal; the last three contained three tons each of activated carbon. The cleaned water was then pumped back into the pond as far away as possible from the intake hose.

The operation took more than a week, with the filtration unit working 24 hours a day, before the herbicide in the pond had been reduced to acceptable levels. Frequent tests were made as the decontamination progressed, Elliot said. At the end of the process, live fish were placed in the pond with no ill effects.

Source of the contamination was careless and excessive use of the powerful herbicide to kill weeds at a nearby restaurant's parking lot. The owner apparently used about 25 gallons of the chemical full strength, instead of diluting it 80-to-1 with water. Rains washed the herbicide into the pond and promptly killed several hundred fish. A nearby home owner asked New Jersey officials for permission to drain the pond, and State officials notified EPA.

Agency research people at Edison worked closely with the Region's Emergency Response Branch in assessing the hazard and planning countermeasures.

First concern was the danger to public health if the chemical should get into ground water and wells in the vicinity. The pond overlies the Kirkwood sand formation, a major aquifer (drinking water source) for central New Jersey and shore areas. Second concern was for possible contamination of downstream lakes and waterways, including the Delaware River.

The team decided the health hazard justified a heroic measure: filtering the whole pond. The only equipment capable of doing this was more than 800 miles away in Milwaukee, where it had been built a year ago as a demonstration unit. Region II and Region V officials cooperated in getting permission from State governors and highway

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This trailer-mounted water treatment unit worked around the clock for more than a week to filter a deadly herbicide from a New Jersey pond. Large tanks contain activated carbon. Bag at side holds water for periodic "backwash" cleaning of first-stage sand filters. "I wish we had a fleet of these units all around the country," says Joseph Lafornara of the Industrial Waste Treatment Research Laboratory at Edison, N.J.

Rats' Behavior Gauges Pollution

Can subtle changes in the behavior of white rats help detect environmental pollutants?

Some EPA scientists at Durham, N.C., think they can, and a group in the Agency's Experimental Biology Laboratory, Dr. R. John Garner director, are experimenting with rat behavior as indicative of very low levels of injurious substances.

More than 500 white rats are involved in the tests now under way. Dr. Lawrence Reiter, research pharmacologist and leader of the behavioral study, said preliminary results showed rat behavior changes might provide early and accurate indications of environmental contamination by lead, pesticides, chemicals, as well as radiation exposure at levels too low for detection by other biological tests.

Rat behavior has long been used in studies of drug effects, Reiter said, and the behavior that is "normal" for laboratory rats is well established.

In several common behavioral tests the effects of low doses of lead and tritiated water fed to the rats show up very quickly in measurable ways. (Tritiated water contains tritium, a radioactive form of hydrogen.)

photo by Ron Mitchell

Dr. Lawrence Reiter adjusts videotaping equipment used in NERC-RTP laboratory to record and analyze behavior of white rats, like the one on TV monitor, left. Changes in rat behavior, Reiter believes, may give early and accurate indications of the presence of very low levels of pollutants.

Some of the tests are not "behavior" in a non-scientific sense, but rather the age at which a normal rat matures: for instance, starting at a loud noise (11 days), opening its eyes (15 days), and landing on its feet when dropped feet-up (18 days). Others are the occurrence of spontaneous motions such as rearing, turning, face-washing, etc.; patterns or sequences of such motions; total motor activity; and finally the effects on the animal's learning and memory.

Reiter is using time-lapse photography and closed circuit TV recording to help process and analyze the rats' behavior. His colleague, George Anderson, is working on ways to link such automatic recording techniques directly with a minicomputer so that observations of rat behavior can be stored on magnetic tape and analyzed.

The "protocol," or detailed statistical plan for the experiments, was worked out by Dr. Daniel Cahill. The work is being coordinated with other "biological indicators" of pollutant effects: including measurements of heart and liver function, brain wave recordings, and changes in weight and reproductive activity.

Dr. John A. Santolucito, chief of the Neurophysiology and Behavioral Research Branch of the laboratory, said this multidisciplinary approach "may prove to be applicable to a wide variety of other toxic agents."

Video Brings HQ Staff To Regions

Three new video-taped programs on current EPA problems have been sent to all Regional Offices. They are designed to provide up-to-date information and to permit headquarters specialists to be seen and heard by EPA people in the field. Topics covered are:

* Thermal effluent limitations and exemptions—section 316a of the Federal Water Pollution Control Act, with William Jordan, Water Programs, and Richard Browne, trial counsel;
* Parking review programs—with Dr. David Morell, until recently acting director of transportation and land use policy, and James Sharp, counsel for the National Realty Committee; and
* How many miles per gallon?—Eric Stork and others discussing the 1975 auto fuel economy effort.

Anne Blair, Office of Public Affairs, arranges and moderates the programs, which are produced by William Gallogly, Audio Visual Support, and distributed on videotape cassettes.

Farm editors of 200 radio stations across the country recently got a three-minute recorded feature in which Dr. John V. Osmun, Pesticide Programs, explained procedures for certifying pesticide applicators. Ms. Blair and Larry O'Neill produced this tape.

WHOLE POND IS FILTERED

(Continued from page 1)

departments to bring the heavy, over-sized trailer rig to New Jersey. It took two days of non-stop driving.

After filtering the pond, 90 cubic yards of contaminated gravel was removed from the parking lot and the area flushed with water into a lined pit. Then water in the pit was run through the filtering unit.

Throughout the week-long cleanup samples of pond water and samples from nearby wells were rushed to the Edison laboratory for analysis. The State Department of Environmental Protection cooperated in this work. No well contamination was found, however.

Total cost of the operation is expected to be about $40,000, which will be paid for out of a Federal revolving fund for controlling spills of oil and hazardous materials. The Coast Guard administers the fund.

Elliot said the emergency would never have occurred if the restaurant owner had read and followed the herbicide's label directions. "It is imperative to follow directions with any chemical pesticide," he said.

$1,000 Award To Tarzwell

The American Fisheries Society's annual award for scientific achievement—$1,000 and a certificate—was presented recently to Dr. Clarence M. Tarzwell, former director of EPA's National Marine Water Quality Laboratory at Narragansett, R.I.

Dr. Tarzwell headed the laboratory from 1965 to 1972, under EPA and its predecessor agency, the Federal Water Quality Administration. From then until his retirement last June he was a senior research advisor.

The award was presented at the society's annual meeting in Hawaii. Dr. Tarzwell lives in Wakefield, R.I.

Volunteer Gardeners' Crops Help in Radioactivity Studies

How do you measure the effects of radioactivity on crops near a nuclear weapons testing site if nobody grows vegetables there?

Jack Vandervort, project officer for the Radiation Monitoring Branch at NERC-Las Vegas, faced this problem when the EPA laboratory was asked last year to determine the amounts of certain radioactive isotopes in different types of seed crops, vegetables, and fruit around the Atomic Energy Commission's Nevada Test Site.

Vandervort had to enlist the help of 25 citizens living in the desert communities and ranches, and he used his own garden and orchard in the Pahrump Valley.

Mrs. Minnie Sharp planted carrots in her garden at Nyala and sacrificed her whole crop so that Donald James, monitor in her zone, could have a big enough sample to analyze.

Bill Lowe, living in retirement in Tonopah, did not plan to plant many carrots until Harold Peer, his zone monitor, supplied the seed.

Del Stewart, a rancher in the tiny town of Hiko, refused to accept full payment for his samples of sweet corn, onions, and chard.

The laboratory is analyzing the fruits and vegetables for strontium-90, iron-55, and radioactive isotopes that emit gamma radiation to establish baseline levels for food crops in southern Nevada. So far no samples have been found with radiation levels higher than the natural background.

TRAIN MEETS MINNOWS—Administrator Russell E. Train, right, inspects salmon minnow troughs on a visit this summer to the Western Fish Toxicology Station, Corvallis, Ore., which does research on the effects on fish of metallic and other pollutants and air supersaturation. Also pictured are Dr. Ronald R. Garton, station chief, foreground, and Randolph C. Arndt, special assistant to Mr. Train.

Alaska Levies Big Penalty For Pollution: $429,000

An alert and aggressive State pollution control agency has chalked up the largest penalty ever assessed in a water pollution case.

Investigations by the Alaska Department of Environmental Conservation led to criminal fines and civil penalties totalling $429,000 against the Collier Carbon and Chemical Corp., of Kenai. Collier Carbon is a subsidiary of Union Oil Co. of California, Los Angeles.

The firm did not contest a criminal information charging it with 110 counts of excessive ammonia discharges into Cook Inlet and 19 counts of filing false reports with the Alaska department. A Superior Court judge in Kenai assessed fines of $1000 for each count and the firm agreed to pay an additional $300,000 in civil penalties.

Investigations began last April 2 when a sanitary engineer with the state agency, Deena Henkins, attended an EPA hearing at which the Collier firm sought less stringent permit conditions due to increased production of liquid ammonia and urea-pellet fertilizer at its Kenai plant.

Ms. Henkins determined that data submitted at that hearing indicated the firm was actually discharging amounts in excess of those reported to the department. Monthly reports had been required by the State of Alaska since 1971 when a discharge of ammonia greater than that authorized by a Refuse Act permit was detected.

On the basis of Ms. Henkins' findings, Max Brewer, commissioner of the Alaska Department of Environmental Conservation, and the Attorney General of Alaska authorized a seizure of company records.

Investigators found two sets of records at the plant. One set reflected the actual effluent content and amounts while a second set contained falsified data for submission to the state.

EPA Region X officials applauded the actions of the Court and the Alaska pollution abatement agency. Leonard A. Miller, director of enforcement for the Northwest regional office, echoed the sentiment of Assistant District Attorney Charles Merriner, who prosecuted the case.

"This conviction will help deter other polluters who may be tempted to cut corners with the law," Miller said, "Honest monitoring and reporting of effluent discharges is essential if any permit program—state or Federal—is going to work. Alaska has set a good example for all of us."

Miller added that active state involvement coupled with EPA's discharge permit program is ensuring progress in the national pollution abatement effort.

Health Group Will Honor Russell Train

Russell E. Train, EPA administrator, has been chosen to receive one of the first Community Service Awards of the District of Columbia Lung Association, which works to prevent and control lung disease and air pollution in the Capital City area.

The awards were scheduled to be presented at an association dinner in Washington Nov. 12, with William D. Ruckelshaus, former EPA administrator, as guest speaker. Deputy Administrator John R. Quarles Jr. was slated to accept the award in Mr. Train's absence.

Others honored by the association for their work on behalf of the community's health and welfare were Superior Court Judge H. Carl Moultrie; Dr. J. Winthrop Peabody Sr., noted chest physician; and Jerry Wurf, president of the American Federation of State, County, and Municipal Employees.

Aubrey P. Altshuller

RTP Scientist Picked for $3,000 Chemistry Award

Aubrey P. Altshuller, director of the Division of Chemistry and Physics at NERC-Research Triangle Park, N.D., will receive the American Chemical Society's $3,000 Award for Pollution Control at the Society's annual meeting in Philadelphia next April.

Dr. Altshuller is nationally recognized for his work in smog abatement research. He organized the first systematic effort to build a scientific information base needed to develop methods for controlling photochemical air pollution, according to the Society. He also developed the "Altshuller reactivity scale," describing the varying degrees with which different hydrocarbon compounds tend to react in air to form photochemical oxidants.

The pollution control award was established in 1971 by the Monsanto Company to recognize and encourage research in this field.

Appointments

Clifford V. Smith, administrator of EPA's Region X Office, Seattle. Dr. Smith had been deputy administrator of Region I, Boston, and before joining the Agency in 1971 he was an associate professor of civil and environmental engineering at the City University of New York.

Elizabeth M. Martin, director of public affairs, for all EPA installations in North Carolina, including NERC-RTP, Office of Air Quality Planning and Standards, and Office of Administration. Mrs. Martin had been public information officer for the City of Durham, N.C.

Alan F. Burch, consultant to the administrator on labor matters, an unpaid post. Mr. Burch is director of safety and accident prevention for the International Union of Operating Engineers.

William P. Davis, chief of the Bears Bluff Field Station, Johns Island, S.C., a component of NERC-Corvallis. Dr. Davis had been director of the Smithsonian Institution's Mediterranean Biological and Oceanographic Center in Tunisia.

John O. Hidinger, director, Office of Transportation and Land Use Policy, a new post under the assistant administrator for air and waste management. Hidinger will work closely with the Land Use Policy Office which Administrator Train has announced he will establish. A civil engineer, Hidinger had previously served in the Delaware Department of Highways and with regional planning groups in Delaware and Pennysylvania.

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—photo by Don Moran

Thousands of pieces of mail coming into EPA's headquarters in Washington each day are sorted on this machine faster than four people can do it by hand. Overhead is a chart listing 96 different EPA offices, each with a two-digit code the operators soon learn by heart. Operator shown is Charles Reid.

Machine Helps Sort Mail At Washington Offices

A hard-working addition to EPA's Washington headquarters is a Ziptronic mail sorting machine that can flip letters into any of a hundred different boxes when a skilled operator reads their codes or addresses and taps two buttons.

Paul G. Ceresini, chief of the General Services Branch, said the machine has greatly speeded the sorting of incoming mail addressed to EPA in Washington, where as many as 10,000 separate pieces come in on an average day.

Since the 20-foot-long monster has been installed in the headquarters mailroom last December, Ceresini said, visitors have come to see it from many Federal agencies—the Pentagon, the Smithsonian Institution, and even the White House.

The mail code numbers adopted for all EPA's Washington offices at the same time were designed to take advantage of mechanized sorting equipment, Ceresini said, although they have other administrative advantages as well.

Skilled operators on the mail room staff soon learn the code numbers and can sort mail at nearly 4,000 pieces per hour.

The operator sits on a stool at one end of the machine, and an array of letters advances toward him. When he pushes two buttons numbered from 0 to 99, pneumatic and mechanical devices pluck the letter off the pile and zip it to the pigeonhole with that number. The machine's controls are electronic.

However, all package mail and large envelopes must still be sorted by hand.

Riding Herd on New Coal Plants

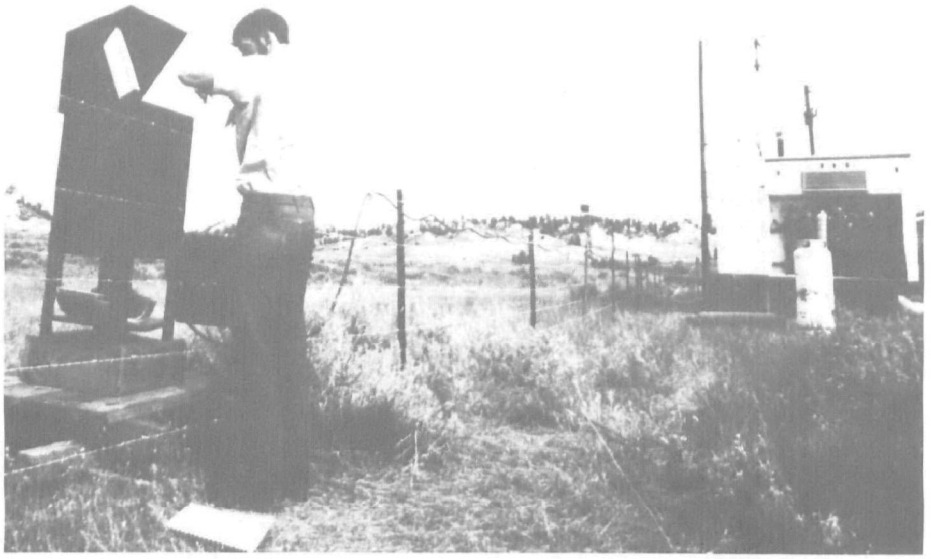
How will new coal-fired power plants in the Northwest affect soils, vegetation, and wildlife?

EPA's National Ecological Research Laboratory at Corvallis, Ore., has launched a long-term research project to monitor the environmental impact of new power plants being built to burn strip-mined, low-sulfur coal never before mined on a large scale because it is remote from the centers of power consumption.

Dr. Norman R. Glass, laboratory director, said the study has been started before the plants go into operation so that the Agency's scientists can get good "before" and "after" data and help guide the power developments "with the least possible adverse effect on the quality of life."

The project is part of the laboratory's Animal Ecology Branch, Dr. Allen Lefohn, chief. The study team, headed by Dr. Robert Lewis, will work in the area of Colstrip, in southeastern Montana, where five power companies are jointly building two 330-megawatt generating units. The first is scheduled to begin operation next June, the second unit in 1976. Two 700-megawatt plants are planned for 1978 and 1979. Coal for the plants will be obtained from nearby strip mines which will be restored after extraction of the coal to meet Montana and Federal requirements for environmental protection.

The EPA scientists are establishing fixed monitoring stations, some as far as 60 miles from the plant site, and they are using a trailer laboratory that can be moved to different places as the needs of the study require.



Chemist Tim Cail sets up an instrument for sampling airborne particulates. In the background is the mobile laboratory.

The project will have had a full year for the gathering of "baseline" information—conditions existing before the power plant starts operation—Dr. Glass said. Thereafter it will detect and measure changes attributable to the plants as they come "on line."

The study will be divided into three areas:

1. Field observations of plants and animals in the area, weather conditions, air and water quality, and any changes in plant and animal populations that might be attributed to strip mining, power production, water use, human activity, etc.

2. Establishment of small plots for close observation of plant and animal communities.

3. Laboratory studies to determine whether changes observed in the field and in ecosystem samples are caused by air pollution or other environmental effects of the power plants.

The mobile laboratory is fitted with instruments and other equipment worth more than $80,000. Without leaving the trailer the project scientists can measure air and water pollutants, analyze soils, record wind speed and direction, temperature, humidity, and solar radiation. On board is a minicomputer that can automatically record and store instrument readings—and also hand-typed data—on magnetic tape for later analysis in the Corvallis laboratory's computer.

The study is expected to cost about $780,000 through the current fiscal year, and it will be four years before all the data are evaluated and the final report written. However, interim reports will be issued periodically, Dr. Glass said.

Other members of the power plant ecology study team include Dr. Martin Morton, Larry John Doe, Timothy Cail, Alex March, Arthur Vallier, and James Miller.

Women Engineers Meet in Dallas

Four women from EPA's Region VI attended the 24th national convention of the Society of Women Engineers held in Dallas, Texas, in the summer.

They included Mildred Smith, Office of Research and Development; Gwendolyn Albert, Water Supply and Standards Section; and Susan Umshler and Sheila Jones, student engineers working for the summer on the Agency's Youth Advisory Board.

Arthur Busch, regional administrator, spoke at one of the technical sessions on the topic, "Environmental Management—the NOW Frontier."

Ms. Swift Heads Interagency Women's Board

Charlie Killian Swift, EPA's women's program coordinator, was recently elected chairwoman of the newly organized Federal Women's Interagency Board. The board is made up of women's program leaders from all cabinet-level departments and independent agencies in the Washington, D.C. area.

Board members meet monthly to review Civil Service Commission policies concerning equal employment opportunity; make recommendations on ways to enhance the status of women in the Federal Government; and exchange information on mutual problems and successes relating to the Federal women's program.

Water Treatment Workshops Held at Demonstration Sites

EPA-supported wastewater demonstration treatment projects were the sites of two recent workshop meetings to acquaint regional people and a number of State officials with the latest practical research information in this field.

The sessions were sponsored jointly by NERC-Cincinnati and by the Office of Research and Development's Municipal Pollution Control Division, which is headed by William Rosenkranz.

The first workshop was held Aug. 20-22 at Logan, Utah, where EPA has two projects under way at the campus of Utah State University to demonstrate various methods of upgrading wastewater ponds and lagoons to meet secondary treatment standards. Nearly 70 persons attended, representing every EPA Regional Office, 13 States, the Alaskan Air Command and the Corps of Engineers.

The second workshop, which was expected to attract about the same number of EPA and State pollution control officials, was held Oct. 30-31 at Wyoming, Mich., where the Agency is supporting a project to demonstrate and test various methods of wastewater disinfection. James Basilico and Edward Opatken of the Municipal Pollution Control Division were in charge of this workshop.

—photo by Ernest Bucci

TOASTMASTERS RECEIVE CHARTER—The Toastmasters Club at EPA's Washington headquarters recently received its official charter from Toastmasters International. The club, which helps members improve their public speaking abilities, meets every Tuesday at noon in Room 3805. Shown above (l-r) are the Club's new officers, Bill Hubble, educational vice president; Donna Kuroda, administrative vice president; Don Ellison, president; Lora Valentiner, secretary-treasurer; and John Settle, retiring president. Those interested in joining or learning more about the Club can drop by any Tuesday, or call Don Ellison at x52972.

THIS NECKTIE IS DANGEROUS

People should not wear flea collars.

The plastic neckbands sold for use on dogs or cats contain organophosphate insecticides that can be absorbed through the skin or inhaled and cause allergic reactions in humans, according to Jake Mackenzie, of Region IX Pesticide Programs Office, San Francisco.

Mackenzie issued the warning last month after noting an increasing use of flea collars by San Franciscans. He said he did not know whether the collars were being worn as a fad or for the serious purpose of ridding the wearer of fleas, which seem to thrive in San Francisco's mild climate.

The best remedies are personal sanitation and good housekeeping, he said, and, if necessary, the use of registered products to control fleas in the home.

Flea collars are registered by EPA for use on furry animals only. Even so, Mackenzie said, some pets have got sick from using them.

30 Win College Scholarships

Thirty sons and daughters of EPA employees throughout the country are attending college this year with the help of the EPA Scholarship Fund. Twelve of the awards were renewals of scholarships awarded last year. Stipends range from $100 to $450 and come from a fund made up of donations in lieu of honoraria and fees for speeches and magazine articles by Agency officials.

The winners' names, schools, and parents' names—by Agency location—are:

Headquarters, Washington—Debra Beasley, Michigan State University, and Walter Beasley, York College, Pa. Their mother is Mrs. Alma Beasley, Office of Research and Development.

Debra Sue Kaplan, University of Maryland, daughter of Mrs. Beatrice Kaplan.

Emmett McLane III, University of Virginia, son of Mrs. Helen McLane.

Betty Ann Ripple, University of Maryland, daughter of Mrs. Betty S. Ripple.

Tedi Wright, Virginia Polytechnic Institute, daughter of Mrs. Jean Wright.

NERC-Cincinnati—James Davis, Brigham Young University, ward of Oliver Love.

Thomas Gehring, University of Cincinnati, son of Robert Gehring.

Theodore Jones, Xavier University, son of John Jones.

Jeffrey and Thomas Kamphake, University of Cincinnati, sons of Lawrence Kamphake.

Newell S. Mastin, Brigham Young University, son of Newell J. Mastin.

Eileen McGowan, College of Mt. St. Joseph, daughter of Mrs. Anne McGowan.

Mary Susan Piepmeyer, University of Cincinnati, daughter of Mrs. Virginia Piepmeyer.

NERC-Corvallis—Lynne MacDonald, Oregon College of Education, daughter of Mrs. Eleanor MacDonald.

From the Center's laboratory at West Kingston, R.I., Karen Soper, University of Rhode Island, daughter of Albert Soper.

NERC-Las Vegas—Karen Leavett, Brigham Young University, daughter of Verr Leavitt.

Barbara Rizzardi, Stanford University, daughter of Charles Rizzardi.

NERC-Research Triangle Park—Serrell Hevenor, Asbury College, son of Hazel Hevenor.

Alice Terry, University of North Carolina, Greensboro, daughter of Abbie Terry.

Region III, Philadelphia, Wheeling, W. Va., office—Susan Wilmoth, Ohio University, daughter of Benton Wilmoth.

Region V, Chicago—Walter Kocal, Jr., Western Illinois University, son of Walter Kocal.

Richard Kovell, University of Illinois, son of Ann Kovell.

Field Office, Evansville, Ind., Ginaloretta Regalbuto, Loyola University, New Orleans, daughter of Constantine Regalbuto.

Region VI, Dallas—Russell Anthony, University of Texas, son of Ernest Anthony.

Kurt Olsen, Texas A. & M. University, son of Agnes Olsen.

Region VI Houston Facility, Teresa Stankis, University of Texas, daughter of Glenn Stankis.

Region VII, Kansas City—Jacqueline Crank, Penn Valley Community College, daughter of Jean Hartman.

Mary Jo Poskin, University of Missouri, daughter of Joseph Poskin.

Mobile Source Pollution Control, Ann Arbor, Mich.—Ellen Macocha, Michigan State University, daughter of Matthew Macocha.

Scholarships are available to children of career employees and are determined by a five-man board of trustees, based on academic performance, need, and available funds.

INSPECTING EPA EXHIBIT at the recent meeting in Denver of the Water Pollution Control Federation are, from left, Jack Green, Region VIII administrator; Robert Crowe technology transfer director; Administrator Russell E. Train, who addressed the convention; and James Smith, NERC-Cincinnati.