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EPA

# 208 Bulletin

## EPA, USDA Team to Solve Water Quality Problems

The United States Department of Agriculture and the Environmental Protection Agency have joined forces to accelerate efforts that will help maintain productive soil and improve the quality of the Nation's waters.

The joint effort, called the Model Implementation Program (MIP), has been launched under an agreement of cooperation signed by Agriculture Secretary Bob Bergland and EPA Administrator Douglas M. Costle.

Under terms of the agreement, EPA and USDA will pool their resources and expertise to take concerted action against water quality problems in several small, designated areas throughout the Nation.

Conservation and pollution control measures will be installed, among them the grassing of road or stream banks and drainage ways, and the building of terraces, animal waste systems, and erosion control structures. These are designed to keep sediment, pesticides, and fertilizers from entering the waterways.

Statewide water quality management plans are well underway in all of the States and in 176 urban areas. This massive planning effort was launched by EPA as authorized by Congress under Section 208 of the Federal Water Pollution Control Act of 1972.

The Model Implementation Projects, though they include erosion and sediment control, will also integrate other USDA and EPA programs that have an influence on water quality management.

The Department of Agriculture has various research, educational, technical and financial assistance programs and personnel who work directly with farmers, ranchers, and others whose activities in rural areas affect water quality. USDA and EPA will coordinate the MIP effort with local and State groups, such as Soil and Water Conservation Districts, State Forestry Agencies, State Soil Conservation Commissions, and Water Quality Agencies.

Funds for the MIP will come from various EPA and USDA ongoing programs, including EPA's Clean Lakes and Research and Development Programs, USDA's Agricultural Conservation Program, Great Plains Conservation Program, and Resource Conservation and Development Program.

The cooperative program will be conducted under direction of the USDA "208" Work Group, and the Nonpoint Sources Branch of EPA's Office of Water and Hazardous Materials.

Seven areas have received national designation where MIP plans will be installed, extending over a 2 to 3 year period. These areas will serve as models to demonstrate effectiveness of similar concerted efforts to improve water quality on a larger scale throughout the Nation.

The seven MIP's were selected from 50 applications from 42 State-USDA coordinating committees in cooperation with many

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## A Joint Land Application System for Municipal & Industrial Wastewater

A joint land application system for municipal and industrial wastewater effluent, which was developed with water quality management assistance, will eliminate significant discharges to the Portneuf River and reuse valuable resources.

The Idaho Department of Health and Welfare has ranked the Portneuf River, which runs through Pocatello, thirteenth out of 125 rivers needing clean-up in the State. Several point source discharges enter the river in a half-mile stretch northwest of the city. Two of the most significant are from the Pocatello sewage treatment plant and J. R. Simplot, a fertilizer manufacturing plant.

The City of Pocatello and the Southeast Idaho Council of Governments (SICOG) have been anticipating for several years that the treatment plant and local industries would be required to meet more stringent discharge standards to improve water quality in the Portneuf. The municipal treatment plant provides secondary treatment. Both the treatment plant and Simplot now violate some discharge limits in their NPDES permits: Simplot for phosphorus, ammonia, nitrates, Kjeldahl nitrogen, and fluoride; the municipal plant for BOD and phosphorus.

When the water quality management program got under way, SICOG and Pocatello initiated a "Joint Wastewater Treatment Feasibility Study," which was conducted by the City Department of Public Works with Simplot's participation and funded by the water quality management program. The study evaluated treatment systems which could achieve 90 percent removal of phosphorus and nitrogen. The two feasible alternatives for achieving this were modification of the Pocatello plant to provide tertiary treatment and land application. The preferred tertiary treatment system, on the basis of costs and system reliability, involved capital costs of $9 million.

Land application of wastewater effluent held several inherent advantages. The 208 planning area is primarily agricultural and heavily dependent on irrigation. The volume of treated wastewater and its nutrient content offered significant potential for use in agricultural irrigation... A demonstration project funded by Simplot indicated that its wastewater effluent is at least as effective as a combination of irrigation water and commercial fertilizer in producing high yield in pasture grasses.

The preliminary cost estimate for developing the preferred land application site at East Bench is $6 million. This estimate is for a full capacity, year-round system including wastewater transmission pipes, sprinkler irrigation system, on-site storage lagoons, resource recovery impoundments, and site preparation.

About half of the 7,000 acres at East Bench currently have no irrigation source. Farmers at the

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Joint Land Application
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site who buy irrigation water pay about $13 per acre per year and are faced with rising water costs and a water table that is dropping significantly. Before the final site decision was made, SICOG held several meetings with farmers around East Bench, and their response indicates that demand for the wastewater for irrigation will be high. Nutrients in the effluent — primarily nitrogen — represent a present value of approximately $300,000 worth of fertilizer annually for farmers at the site.

### Implementation

East Bench is large enough for phased development of the land application system. The first phase, at a cost of $3 million, will include year-round collection of all effluent from Simplot and collection of effluent from the municipal treatment plant in all but the winter months. During the winter, the municipal plant will discharge into the river. There will only be summer irrigation during this phase. Phase two will provide for storage of all municipal and industrial effluent year-round and growing season irrigation. The final result, once the whole system is in place, should be zero discharge from the municipal treatment plant and the fertilizer plant.

Pocatello and J. R. Simplot have jointly executed the contract for system construction, and the design of the system is complete. Simplot will be responsible for construction of the access pipe from its plant to the municipal plant and for construction of the resource recovery impoundment at the East Bench application site. The city will be responsible for transmission pipes from the municipal treatment plant to East Bench and for operation and maintenance of the system. The city will collect revenues from the sale of effluent for irrigation. The entire cost of the system will be financed locally, with no Federal grant assistance, and construction is anticipated to be completed within two years.

### Monitoring

Anticipated impacts of the land application system, which will mainly affect groundwater, are predicted to be minimal since the water table depth averages 100 feet and there are only a few potable wells around East Bench. However, the Idaho Department of Environmental and Community Services will monitor wells around the resource recovery impoundment, with additional research investigations carried out by the Idaho State University and a local U.S. Department of Agriculture Research Station.

### Significance

The land application system developed through the WQM program for the Pocatello municipal treatment plant and the J. R. Simplot fertilizer plant is an innovative approach to solving wastewater treatment problems. When the system is complete, all discharges from both plants will be eliminated from the river, resulting in water quality improvement in the Portneuf.

The key to eliminating these discharges is a relatively low cost resource recovery project that offers local farmers a highly desirable product and a one-step process for irrigation and fertilizer application. The effluent irrigation water not only replaces two expensive resources which local farmers now buy separately; the completed sprinkler system will expand irrigated acreage and result in a significant increase in production on those acres.

This accomplishment is also significant because SICOG recognized that the WQM program could provide the impetus, through funding and a central coordinative role, to deal with a long-standing problem. The project has led to development by Pocatello and J. R. Simplot of an independent, municipal-industrial wastewater management process. This management process includes well-defined responsibilities for construction and continuing operation of the system, an adequate funding program to complete the project, and a plan to generate revenue from the project. □

# Information Officers Come to Grips with Gripes

The National Environmental Information Officers Conference met in Dallas, Texas, late last year and articulated a number of continuing concerns the officers had regarding the 208 water quality management program.

Workshops were held during which the officers discussed their problems with local elected officials, suggesting ways to overcome frequent distrust elected officials have with planning organizations. The officers suggested that communication is the key to political support and that the 208 program should be given to elected officials in manageable doses.

Providing effective public meetings was also discussed. Ways to get the people out, ways to make the meetings interesting and effective, ways to get people to work after the meeting and ways to get people to come back were considered. One resourceful member of the panel even considered mailing dirty water along with customer's water bills to underscore the importance of attending the public meeting!

Problems with public involvement and with elected officials dominated the discussions at the Dallas conference, but other problems too numerous to discuss were outlined:

(1) EPA forms and reporting documents are a hassle;

(2) Sometimes the public considers water quality downgrading to be a viable alternative to meeting water quality goals;

(3) Time and financial limitations burden the planning progress;

(4) It is questionable whether educational material may be funded;

(5) Consistency is lacking in public participation requirements throughout Federal water programs;

(6) State plan certification poses a problem;

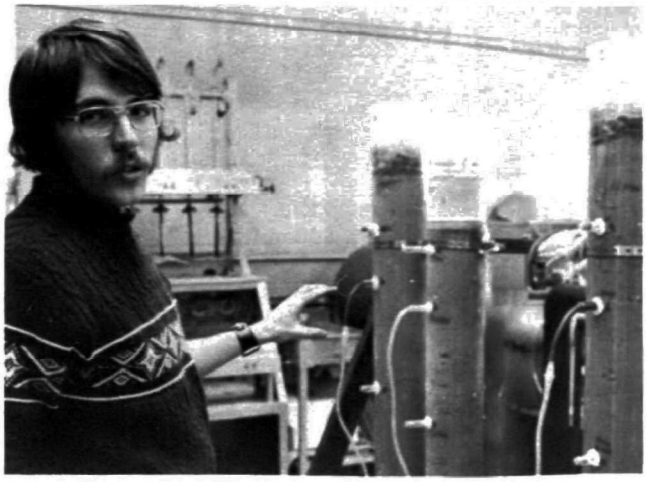
(7) EPA publications are often unavailable, and the distribution process is inadequate;

(8) Money alone is no measure of an agency's commitment to public involvement;

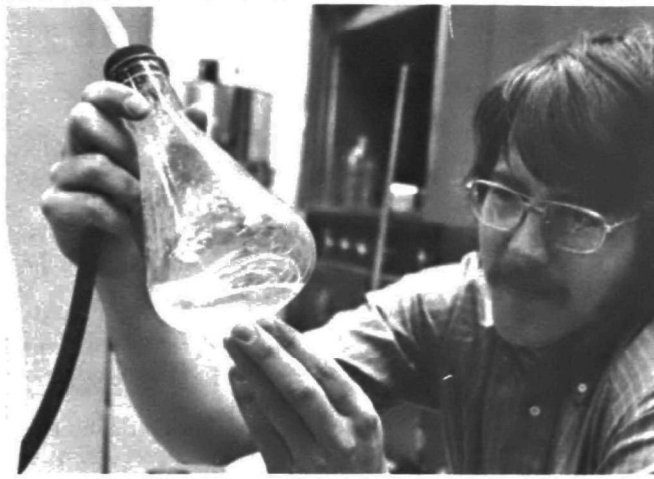
(9) EPA's decisions about public participation programs lack policy coordination.

In response to these important policy considerations, an enlightening follow-up report was constructed by Susan Vogt, 208 Public Participation Coordinator; Ginger Patterson, Chief, Program Communications Section; and Region IX WQM Coordinator, Alan Abramson. To further the spirit of the Dallas Conference, a public participation questionnaire was distributed to participants soliciting feedback about the resolutions of the Conference. □

# Land Use Solutions to Septic System Problems



Testing different soil types for the level of purification provided by each.



Sample of septic tank wastewater purified by passage through absorbent soil. Such wastewater is potentially potable.

The Berkshire County Regional Planning Commission (Massachusetts) and the Strafford Rockingham Regional Council (New Hampshire) are assisting local towns in developing and enforcing land use regulations to protect local waters and to ensure orderly development.

In rural New England, septic systems remain the most frequently used manner of waste treatment. Many of these systems are old and malfunctioning. Frequently, the owner does not adequately maintain the system. Since many of the septic systems are built in shallow, rocky soil, malfunctioning systems create an acute pollution problem for local homeowners as well as an asethetic nuisance. Malfunctioning septic systems contaminate aquifers from which drinking water is taken.

Expansion of existing facilities or new construction is not always the best solution, especially since additional facilities are costly to build, operate and maintain. Consequently, land use regulations are an appealing alternative for many small New England towns.

Marshalling land use regulations, planners can preclude septic system use in those areas in which septic system pollution would create especially sensitive hazards.

### New Hampshire

The Strafford Rockingham Regional Council took samples of the four watersheds of the region, finding dangerous levels of coliform bacteria.

The Council then went to the towns individually and asked them to adopt the regulations for land use, including soil-type, lot size and erosion control regulations. Many of the small towns in the Region readily accepted the control measures as a viable alternative to centralized sewer systems.

The program provided essential technical background about the water quality of the Region, avoided the necessity of building costly central sewer systems for small towns, and guaranteed a better quality of life for people in the Region.

Said Jon Gilmore, Planning Director for SRRC, "Land use is the primary cause of the Region's water quality problems; it's also the key to solving those problems in the future."

Seasonal lakeshore home converted to year-round use. Septic systems attached to such residences are inadequate for the additional use made of them.

Photographs courtesy of the Strafford Rockingham Regional Council.


"Honey Wagon" pumping a pit or lagoon disposal system. Such systems are cheap and widely used, but offer the most dangerous source of contamination.


"Honey Wagon" used to pump a septic tank. Here the septic tank had not been pumped in nine years (when recommendations call for pumping every three years). This tank may have been the source of aquifer contamination.

**Massachusetts**

As a part of the water quality management program, the Berkshire County Regional Planning Commission (BCRPC) developed drinking water and recharge areas to provide current and potential municipal water supplies through the year 2000. The 208 staff developed land use guidelines for protection of major recharge areas and a draft zoning by-law to implement the guidelines.

At the request of the city of Stockbridge, BCRPC revised the existing zoning ordinance and incorporated groundwater protection guidelines prepared through the 208 program. The revised ordinance was approved at a town meeting.

**Significance**

These two New England 208 Agencies used the WQM program to help towns develop and implement local solutions to existing and potential health hazards and water quality problems resulting from malfunctioning septic systems.

Where the capability to support new municipal treatment facilities is limited, these land use controls allow New England towns to direct development so that they will not be faced with serious water quality problems over the next few years without the need for expensive and unwanted treatment facilities. □

# May We Serve You Better?

The Bulletin's purpose is to publicize program activities and successes, and to communicate EPA policies. We, the editors, would appreciate getting feedback as to whether or not the Bulletin is providing a useful service. Thus, we would appreciate your taking a minute to help us with our study.

How many people in your organization read the Bulletin? _____

Do you feel the Bulletin serves a useful purpose?
Yes No

Which articles in the Bulletin do you find most useful:
- Technical outputs/reports
- National Calendar
- Legislative Update
- Success stories
- Publications listing

What other water quality related news periodicals do you receive?
- Local newsletters
- State agency newsletters
- NARC's Regional Perspective
- NARC's Washington Report
- NACo's County News
- NACD's Tuesday Newsletter
- ICMA's Waterline

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Does the Bulletin contain information you would not get elsewhere?
Yes No

How would you improve the Bulletin?

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# Clean Water Camp Out

Representatives of environmental action groups and government agencies field questions about water quality.

Participants in CFRPC's Clean Water Camp out at outdoor workshop. Later came the fun!

Who could not be overcome by the scenic beauty of Florida's Peace River?

Add a dash of Southern barbecued ribs, the music of a local bluegrass group, and a few beers and you have an atmosphere in which communication among environmentalists and planners is facilitated.

The Central Florida Regional Planning Council of Bartow, Florida, threw a weekend session for a group of 250 environmental and governmental representatives last October to encourage environmentalists to become involved in developing the 208 program while it is still in the planning stage.

Taking business before pleasure, Saturday was filled with speeches by local and national representatives of EPA, workshops and a panel discussion. Later that evening, the Hardee County Sheriff's Department hosted a barbecue, featuring the Okeechobee String Band.

Sunday morning, the campers awoke to a hayride truck trip to the Peace River for a demonstration of water sampling techniques. The group found the river highly polluted, which stimulated a discussion of the water quality issues.

A Canoe trip down the Peace River culminated the enjoyable, yet productive, weekend.

The clean water camp out was one of the largest gatherings of environmentalists in recent times, and proved to be a source of enthusiasm and involvement for the 208 program.

Putting aside the business, it was a fun-filled time during which environmentalists and planners could get to know one another, to the benefit of both groups. □

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# New Publications Available

The Water Quality Management Information Center has the following new publications available:

- Water Quality Management Accomplishments — Compendium I
- Assessment of Rural Nonpoint Source Pollution, A Model Based on the Universal Soil Loss Equation
- Planning Methodologies for Analysis of Land Use/Water Quality Relationships: Case Study Application
- Water Quality Management Guidance for Mine-Related Pollution Sources (New, Current and Abandoned)
- Setting the Course for Clean Water, A citizen's guide to the Section 208 Water Quality Management Program (National Wildlife Federation)
- The Public Benefits of Cleaned Water: Emerging Greenway Opportunities
- The Bellevue Experience: A Case Study
- Silvicultural Chemicals and the Protection of Water Quality (Region X)
- Water Quality Management Directory (September 1977)
- Water, A Resource You Can Help Restore (booklet/poster)
- Nonpoint Source Control Guidance, Agricultural Activities

For copies of any of these documents, call the WQM Information Center, 202-755-6993.

# National Calendar

| Meeting | Date | Location |
|---|---|---|
| American Society of Civil Engineers Spring Meeting | April 24-28 | Pittsburgh, PA |
| Cornell Wastewater Conference (Nonpoint source BMP's) | April 26 | Rochester, NY |
| National Association of Regional Councils Annual Meeting | May 6-10 | Denver, CO |
| Urban Land Institute Spring Meeting | May 29-30 | New Orleans, LA |
| American Water Works Association Conference | June 25-29 | Atlantic City, NJ |

Water Quality Problems

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local and State conservation and water quality pollution control agencies. The MIP's selected are:

Indiana — Indiana Heartland area where heavy sediment loads are affecting water quality;

Nebraska — Maple Creek watershed, essentially a cropland area, with an exceptionally high annual soil loss. Sediment, and accompanying nitrogen, phosphorus, and pesticides are polluting many of the 230 miles of streams in the project areas;

New York — Delaware River West Branch watershed where agricultural and forest harvest activities including many dairy and feedlot operations have caused serious water quality problems;

Oklahoma — Little Washita River with typical south central Oklahoma water pollution problems caused by sediment from gullying cropland and county roadsides, as well as oil and gas developments;

South Carolina — Broadway Lake watershed east of Anderson City, where serious degradation of water quality stems from sedimentation, agricultural chemicals, and animal waste;

South Dakota — Lake Herman, near Madison in Lake County, a natural recreational lake with water pollution problems that include soil erosion and sedimentation;

Washington — Sulphur Creek, Yakima County, whose chief pollution problem is due to the sedimentation, salts and nutrients from irrigation return flow.□

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