

Oklahoma

Water
News

MONTHLY NEWSLETTER OF THE OKLAHOMA WATER RESOURCES BOARD

Board Computers Watch Over Industrial Waste Dischargers

PICS vital tool in permitting, enforcement

In Oklahoma, 629 industries have active state waste disposal permits, with more than 350 of these discharging directly into waters of the state. Each discharging industry has, on the average, about three effluent outfalls and is responsible for monitoring many—six set permit conditions and discharge limitations—or parameters—developed by permitting personnel of the OWRB's Water Quality Division. Measurements and tests are required for parameters ranging from pH, temperature and flow to toxics such as uranium, benzene and arsenic.

It is becoming increasingly difficult for the OWRB, an agency with a full-time enforcement staff of five, to check the permit compliance of more than 600 industries and their numerous parameters (143 different parameters are required for monitoring). But according to Neal Shores, of the OWRB's Data Processing Section, that monumental task will soon become easier thanks to the computerized Permit Information and Compliance System (PICS) being set up by the OWRB's Data Processing Section.

"In the past, our enforcement people have relied almost totally on citizen complaints and the manual review of monthly self-monitoring reports required of all dischargers,"

Shores, a systems analyst, pointed out. "With PICS, we'll be able to check permit compliance with the push of a button."

Self-monitoring reports are required of all industries operating under a state waste discharge permit. Samples of effluent are sent by permitted industries to certified laboratories for testing. An honor system allows permitted industries to fill out the reports based on lab results. The completed form is then forwarded to the OWRB for a compliance check. Surprise inspections are conducted by enforcement personnel to verify the accuracy of self-monitoring reports.

OWRB waste discharge permit information has already been stored on Oklahoma State University's data base system, where the compliance system originates. When Shores finishes fine tuning the system in early March, Enforcement Section staff will be able to cross-reference incoming self-monitoring reports with existing permit data. PICS will then "flag" areas of non-compliance.

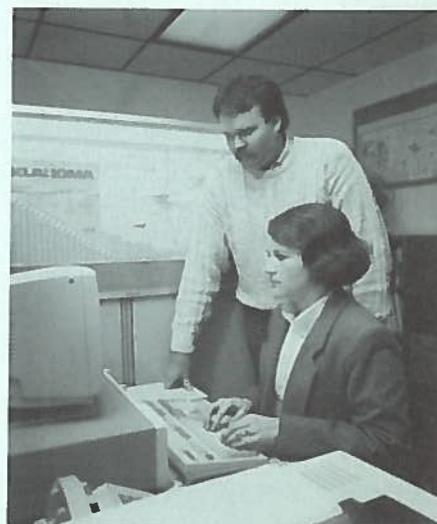
"The system responds to a variety of problem areas—from improperly completed self-monitoring reports to parameter limit violations. But we're looking primarily for chronic violators, not for those who simply made a mis-

take in filling out their reports," Shores pointed out.

"The time we'll save should be extremely helpful," said Tim Smith of the Board's Enforcement Section. "PICS will allow us to bypass our permit files and quickly find out who is out of compliance and to what degree."

Gene Chou, head of the OWRB's Permitting Section, sees the new system as "a vital tool for the future of permitting."

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Karen Dührberg and Tim Smith of the Board's Enforcement Section review the computer program that blows the whistle on industrial waste dischargers.

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"Water quality standards, mathematical models can be integrated into the system."

"We plan to have water quality standards information and various mathematical models integrated into the system. This should enable our staff to more easily draft permits and set precise parameters for industrial discharges to follow," Chou said.

To set permit levels, the Permitting Section uses a scientific calculation procedure called the wasteload allocation process—developed by the OWRB's Research and Standards Section—which simulates dispersion characteristics of pollutants in the "mixing zone," existing downstream and at the impact site.

"Eventually, PICS will give us an overview of the nature and location of all industrial point-source discharges on a particular stream and, subsequently, help determine the overall health of that stream. In this way, PICS could prove useful in determining state water quality standards," Chou noted.

Other states, such as Texas, have a computerized permit compliance system similar to the OWRB's. And the Environmental Protection Agency operates a separate computer network to check on federal National Pollutant Discharge Elimination System (NPDES) permits.

Recently, Shores integrated laboratory certification data onto the system. Now, at a glance, PICS can tell the user if a lab is certified to test for a particular parameter.

"This system has almost unlimited potential in permitting, enforcement, and even research and standards," Shores said. "As more industries continue to locate in Oklahoma, the need to accurately monitor industrial discharges increases—I think we've filled that need with PICS."



Canadian River Compact Meets

Commissioners representing Texas, New Mexico and Oklahoma in the

Canadian River Compact will meet at the Bureau of Reclamation Offices in Amarillo March 22, according to J.A. Wood, OWRB Stream Water Division chief.

Oklahoma will be represented by Bob D. Johnson, Commissioner, of Guymon. The OWRB will be represented by James R. Barnett, executive director; Dean Couch, general counsel; and J.A. Wood, Stream Water Division chief.

Court to Hear Ute Case

The five-year dispute over Canadian River water rights advanced a step toward resolution February 26 when litigants met in Phoenix with the Special Master appointed by the U.S. Supreme Court.

Jerome C. Muys, Washington, D.C., attorney with expertise in western water matters, was appointed Special Master by the U.S. Supreme Court in January to work toward resolution of the Ute Reservoir water rights controversy. Late last month, Muys met with representatives of Oklahoma, Texas and New Mexico to discuss preliminary issues in a case brought by Oklahoma and Texas against New Mexico.

Representing Oklahoma in the Phoenix meeting were James R. Barnett, OWRB executive director; Harold Springer, OWRB Engineering Division chief; R. Thomas Lay, former OWRB general counsel; and Sarah

Drake of the Office of the Attorney General.

The complaint filed in the U.S. Supreme Court in April 1987 seeks to resolve a dispute over Canadian River water rights. By enlarging the Ute Reservoir, Texas and Oklahoma allege New Mexico expanded conservation storage space 42,000 acre-feet more than allowed under terms of the interstate compact. Ute Reservoir is an impoundment on the Canadian River near Logan, N.M.

Oklahoma, Texas and New Mexico are parties to the Canadian River Compact, an agreement drawn in 1950 to equitably apportion the interstate waters. The compact is enforced by the Canadian River Commission.

1909 Turbine Heats Homes

A dam and turbine installed in 1909 for use as a grinding mill in rural Oshkosh, Nebraska, have been renovated to provide power to two homes.

When Floyd Peterson purchased the land in 1950, the dam was gone and the turbine was in poor condition. He made new rods and a 30-inch cast iron turbine to generate electricity to heat branding irons. However, by rebuilding the dam, installing a salvage pulley and a generator, Peterson was able to provide power to his home a mile away.

The turbine is controlled by 12 gates regulating the amount of water that falls six feet through the turbine and



Gary Cragg takes test for licensure as a water well driller at OWRB booth at annual meeting of the Oklahoma Water Well Association held in Oklahoma City February 19. In the center, exhibitor Leland O. Friesen, owner of Friesen Windmill and Supply, Meade, Kansas, visits with Dannie Spiser (standing) and Gary Glover who manned the Water Board booth.

returns to the creek below. A 20-kilowatt, 240-volt generator is used, with a 10-kilowatt generator installed as a backup. A transformer boosts the voltage to 7200 volts for transmission, and another transformer at the house reduces the voltage for house use.

Since the Oshkosh resident completed the homemade power plant in 1982, it has generated more than 150,000 kilowatts of electricity to supply his home and that of his son.

Groundwater "Banks" Tested

A cooperative study underway in California is looking into the possibility of storing water imported from northern California in an aquifer near Los Angeles.

The joint six-month project of two California water districts will explore the concept of storing 100,000 to 300,000 acre-feet of water in the Main San Gabriel Basin. An engineering firm will evaluate the basin's storage capacity, recharge and extraction capabilities, water quality concerns, legal and institutional issues and benefits of such a program. According to the January issue of *U.S. Water News*, the program is part of a long-term investigation into the feasibility of "banking" water.

A similar strategy is being studied as a solution to aquifer depletion at Myrtle Beach, South Carolina. Large withdrawals from the Black Creek aquifers by a rapidly growing population and by summer tourists threaten to dewater the aquifers by 1990.

Replenishment of the aquifers is proposed in the winter when water demand is least. One alternative calls for the injection of 20 million gallons of treated water into the Black Creek aquifers from a treatment plant on the Atlantic Intercoastal Waterway. Another alternative proposes the storage of water in non-potable aquifers in the nearby Middendorf formation.

The study will analyze core samples, measure hydraulic properties, determine quality of native and injected groundwater, determine physical and chemical changes caused by water injection, test pretreatment methods and provide a prototype aquifer storage recovery well.

Lloyd Church, Longtime Board Member, Encourages U.S. Toward 100-Year Plan

The following remarks are excerpted from a letter from Dr. Lloyd E. Church, Oklahoma conservationist and OWRB member for 20 years. Through his lifelong "Conservation Crusade," Church has sought to heighten awareness of America's growing water pollution and soil erosion problems.

Church is a member of the Arkansas/Oklahoma Arkansas River Compact Commission and served as a conservation district director for 46 years.



Dr. Lloyd E. Church

"A great majority of the 91 years of my life has been devoted to the preservation and enhancement of man's environment. A deep commitment to, and love of, the soil has mandated that I dedicate my personal resources, both time and money, to the establishment and continuation of efficient conservation of our precious limited natural resources—in particular, land and water. Of course, this dedication has not excluded other precious natural resources but, instead, has worked hand-in-glove for the conservation of all our non-renewable assets.

Our environment is deteriorating at a pace that is frightening to contemplate.

Unless this poisoning of our atmosphere, our water, our soil and the

food chain stops, and stops soon, the consequence will be appalling.'

"Men of conscience and intellect must become cognizant of the fact that productivity and prosperity are dependent upon a nation's ability to feed, clothe and provide a safe, healthy environment for its people.

"In Oklahoma, and across the nation, we have in place the Soil Conservation Service with associated Soil Conservation Districts to implement efficient conservation practices. Planning and Development Districts also exist to lend expertise to local governments with a varied array of programs and technical assistance aimed at conserving our natural resources. These and other groups provide more than adequate expertise to plan and supervise efforts toward conservation of America's land and water. Unfortunately, what is lacking is the manpower to do conservation work.

"As part of a federally sponsored 100-year conservation plan, I propose that efforts be directed toward using the nation's chronic unemployed, inmates of penal institutions and America's youth for such conservation activities as tree planting and erosion control and correction—in general, for cleaning up the environment our children and grandchildren will inherit.

"Imagine for a moment, boys and girls working in a clean, healthy and worthwhile endeavor that will reap long-term benefits for them and their offspring; an unemployed man being able to provide financially for his family while he helps secure a healthy environmental future; or a young man or woman doing something positive for the very society he or she owes a debt of incarceration to.

"The American landowner's financial status will not allow him to bear the complete cost of conservation. A redirection of appropriated funds seems to be the solution in meeting costs associated with environmental cleanup. A comprehensive plan to provide technical expertise to the general populace

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must be developed by those entities already in place.

"I urge all to join me in strongly advocating a 100-year plan for conservation. And, at the same time, we must lobby for assistance in obtaining

the needed field workers to help assure the conservation of our land and water. Bear in mind that the United States has proven time after time to be the strongest, most innovative country in the world. I believe that an effort started at the grass roots level with strong leader-

ship will succeed beyond our highest hopes. I invite these leaders to use their influence and join me in the most important endeavor on earth—our earth—and pledge their resources, as I have, to the conservation of our Nation's land and water."

**ACTIVE CONSERVATION STORAGE IN SELECTED OKLAHOMA LAKES AND RESERVOIRS
AS OF MARCH 1, 1988**

| PLANNING REGION LAKE/RESERVOIR | CONSERVATION STORAGE (AF) | PERCENT OF CAPACITY | PLANNING REGION LAKE/RESERVOIR | CONSERVATION STORAGE (AF) | PERCENT OF CAPACITY |
|-----------------------------------|------------------------------|------------------------|-----------------------------------|------------------------------|-------------------------|
| SOUTHEAST | | | Wister | 27,100 | 100.0 |
| Atoka | 121,731 | 98.6 | Sardis | 302,500 | 100.0 |
| Broken Bow | 918,100 | 100.0 | NORTHEAST | | |
| Pine Creek | 77,700 | 100.0 | Eucha | 79,567 | 100.0 |
| Hugo | 156,790 | 99.5 | Grand | 1,299,100 | 87.1 |
| McGee Creek | _____ | _____ ¹ | Oologah | 544,240 | 100.0 |
| CENTRAL | | | Hulah | 30,525 | 99.8 |
| Thunderbird | 105,925 | 100.0 | Fort Gibson | 365,200 | 100.0 |
| Hefner | 74,075 | 98.3 | Heyburn | 6,600 | 100.0 |
| Overholser | 11,664 | 73.2 | Birch | 19,200 | 100.0 |
| Draper | 68,212 | 68.2 | Hudson | 200,300 | 100.0 |
| Arcadia | 27,390 | 100.0 | Spavinaw | 30,000 | 100.0 |
| SOUTH CENTRAL | | | Copan | 43,400 | 100.0 |
| Arbuckle | 62,571 | 100.0 | Skiatook | 319,400 | 100.0 |
| Texoma | 2,493,600 | 94.5 | NORTH CENTRAL | | |
| Waurika | 203,100 | 100.0 | Kaw | 428,600 | 100.0 |
| SOUTHWEST | | | Keystone | 586,117 | 95.1 |
| Altus | 132,886 | 100.0 | NORTHWEST | | |
| Fort Cobb | 78,423 | 100.0 | Canton | 97,500 | 100.0 |
| Foss | 167,342 | 68.2 ² | Optima | 3,000 | _____ ¹ |
| Tom Steed | 84,238 | 94.7 | Fort Supply | 13,520 | 97.3 |
| EAST CENTRAL | | | Great Salt Plains | 31,400 | 100.0 |
| Eufaula | 2,297,524 | 98.6 | | | |
| Tenkiller | 619,902 | 98.8 | | | |
| | | | STATE TOTALS | 12,125,442 | 95.8³ |

1. In initial filling stage
2. Temporarily lowered for maintenance
3. Conservation storage for Lake Optima not included in state total

Data courtesy of U.S. Army Corps of Engineers, Bureau of Reclamation, Oklahoma City Water Resources Department, and City of Tulsa Water Superintendent's Office.

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