

# OKLAHOMA WATER NEWS

*Bimonthly Newsletter of the Oklahoma Water Resources Board*



*from  
the desk  
of the  
Director*

## 18th Governor's Water Conference Presents "Water Kaleidoscope"

*November 5 Conference will address Indian claims, nonpoint sources, CAFOs, interstate issues, El Nino*

On a recent trip to Washington, D.C., I visited with the Oklahoma Congressional Delegation and representatives of the Department of Justice concerning Sardis Lake. I found great support for a discounted purchase buyout of Sardis. The state entered into a contract with the Corps of Engineers in 1974 allowing the state to use the water storage in the lake in return or repayment of construction costs over 50 years. It required annual payments for present use (47 percent) of total water supply, or \$7.5 million. Today no water is being used from the lake.

Oklahoma has made \$3.2 million in annual payments to the Corps of Engineers, but remains some \$4.5 million in arrears. The Oklahoma Legislature appropriated this year's payment of \$1.2 million to avoid litigation, however, the problem of future payments remains.

I believe it is in the best interest of Oklahomans to resolve the Sardis debt issue by offering a discounted lump sum purchase price of \$20 million for the entire water supply storage.

In discussing this option with Governor Keating and legislative leaders, I have found support for the proposal.

Then we can get on with resolving Native American water issues, developing a sound economy around the lake and encouraging recreational opportunities.

*I invite everyone with an interest in the state's water resources to attend the Governor's Water Conference on November 5 at the Oklahoma City Marriott Hotel. I look forward to visiting with you there!* □

Reflecting the variety of issues facing Oklahoma and the nation, the Eighteenth Annual Governor's Water Conference will take as its theme "Oklahoma Water -- A Kaleidoscope of Issues." The Conference, coordinated by the Oklahoma Water Resources Board and sponsored by 27 other water-related organizations, will be held Wednesday, November 5, at the Oklahoma City Marriott, 3233 Northwest Expressway from 8 a.m. until 2:30 p.m.

Brian Griffin, State Secretary of Environment and chairman of the Governor's Animal Waste Task Force, will be a featured speaker. Griffin will preview the task force's report to be submitted to Governor Keating on December 1.

Among the topics on the agenda will be Native American water rights and tribal sovereignty, competing water uses, interstate water issues, and legal and environmental issues affecting swing and poultry feeding operations.

One panel on the pre-luncheon agenda will discuss Native American water claims. A panel of state agency heads will discuss troublesome water issues the state faces. A newsy "Water Gazette" will brief conferees on the endangered Arkansas River shiner

minnow, Lee Creek Reservoir, weather modification and El Nino.

The Oklahoma Congressional Delegation has been invited. Members of the Oklahoma Legislature are invited to the brief conferees on proposed legislation on water and the environment. Presentation of Water Pioneer Awards will also be a feature of the luncheon program.

Registration is \$30 and includes lunch. To register by mail, please fill out the form, enclose check or purchase order made to the Governor's Water Conference, and mail to Governor's Water Conference, 3800 N. Classen Blvd., Oklahoma City, OK 73118.

For more information or to register by phone, call (405) 530-8800.

Room reservations are available at special Governor's Water Conference rates by calling the Marriott Hotel at (405) 842-6633. □

***Mail registration today!***

**Governor's Water Conference**

3800 N. Classen Boulevard  
Oklahoma City, OK 73118

Please enclose **\$30** check or purchase order payable to **Governor's Water Conference.**

Name \_\_\_\_\_

Organizaion \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_ Phone ( \_\_\_\_\_ ) \_\_\_\_\_

## Board Offers Panhandle Groundwater Maps

Maps depicting saturated thickness and depth to water of the Ogallala Aquifer in the Panhandle are available from the Water Resources Board without charge. According to Geologist Mark Belden of the Planning and Management division, the two maps are based on water level data collected on approximately 250 wells in January 1997, during the Board's annual well measurement program. He pointed out that area landowners continue to be extremely cooperative in offering access to their wells to further expand the network in areas where additional well control is needed to improve the accuracy of the maps.

Belden said the OWRB plans to make available updated saturated thickness and depth to water maps of the Panhandle area by June or July of each year, as well as maps depicting change

Belden explained the saturated thickness is determined by subtracting the depth to water from the aquifer bottom (red bed) elevation. If we know the specific yield (how much water the saturated aquifer material will yield by gravity), the average saturated thickness, and the total land overlying the basin, we can estimate the quantity of water in storage.

"The annual statewide well measurement program is one of the most successful initiatives of the Water Board," Belden pointed out. "None of this information would be available without the cooperation of the landowners who allow us access to their wells year after year." He said that the 1998 effort will get underway in the Panhandle the first week in January and record water levels in 750 wells statewide before ending in March.

Belden oversees the well measurement program with the assistance Oklahoma City and field offices: Gene Doussett and Gary Glover, Oklahoma City; Ira Smith, Woodward; Hank Elling and Kim Sullivan, Lawton; Kent Wilkins, McAlester; and Gavin Brady, Tulsa.

For copies of the maps showing saturated thickness and depth to water of the Ogallala Aquifer in the Panhandle, call the OWRB at (405) 530-8800 or mail your request to 3800 N. Classen Blvd., Oklahoma City, OK 73118. □



Mark Belden

in water level over different periods of record.

He pointed out that the Board's annual well measurement effort allows the Water Resources Board to monitor positive and negative trends in groundwater levels over long periods. A few of the 750 wells in the statewide network have been measured annually for nearly 50 years, he pointed out. Data obtained from the program assist geologists and hydrologists in estimating the amount of water in storage in the Ogallala and other aquifers throughout the state. The information is valuable to planners and hydrologists in estimating the life of an aquifer and to well drillers, landowners and consultants.



## New OWRB Reports Available

Mike Mathis, chief of the Board's Planning and Management division, announces the recent publication of three hydrologic reports. The reports are "Hydrologic Report of the Minor Groundwater Basins in Garfield, Grant and Kay County," authored by Mark Belden; "Hydrogeologic Report of the Northeastern Oklahoma Minor Groundwater Basin and the Neosho River Minor Groundwater Basins" and "Hydrologic Report of the East-Central Oklahoma Minor Bedrock Groundwater Basin in Seminole, Hughes and Okfuskee Counties," both authored by Kent Wilkins of the McAlester field office. Belden and Wilkins are both geologists.

Copies of the reports are available postpaid for \$5 each by writing the Oklahoma Water Resources Board, 3800 N. Classen Blvd., Oklahoma City, OK 73118, or calling (405) 530-8800.

## Lake Dive Yields Unique Junk

The 1997 Trash and Treasure Festival at Lake Tenkiller September weighed in 3,660 pounds of trash, said Ken Morris, OWRB diver who participated in the event. According to Morris,

## NFIP Denies Claim of Norman Homeowner

Neither homeowners insurance nor flood insurance purchased in January, 1996, can reimburse the Bill Mercer family for the loss of their house to the Canadian River near Norman. When the home was built in 1980-81, the river lay a mile and a half away, but a series of erratic changes in the Canadian's course beginning in 1993 brought it to the Mercers' doorstep.

The house perches precariously above the river. Abandoned months ago by the Mercers, the handsome 4-bedroom home tips sharply toward the river that eventually will claim it.

Although Mercer had purchased flood insurance effective January 31, 1996, eligibility for reimbursement required two years of prior coverage.

Oklahoma Congressman J.C. Watts had intervened with the Federal Emergency Management Agency, seeking coverage under the Upton-Jones Amendment to the Federal Flood Insurance Act. However, FEMA responded that the Upton-Jones provi-

sion passed in 1985 had terminated in September, 1995. The Amendment had specifically covered "structures on land subject to imminent collapse or subsidence."

FEMA held that for Mercer to have qualified for coverage under Upton-Jones, the flood policy must have been in force on or before June 1, 1988.

"It is even a more tragic situation when one considers the losses to that neighborhood," said Ken Morris, administrator of the NFIP at the Water Board. Seven homes near the Mercers were declared eligible and are in various stages of settlement or removal. The Mercer home and two more were not eligible.

"Such tragedies make a very strong case for the purchase of flood insurance," said Morris. "The loss of an insured home is overwhelming. The loss of an uninsured family home can be devastating," he asserted.

For information on the National Flood Insurance Program, call Morris at (405) 530-8800. □

### OFMA Elects New Officers

Donetta Blanot of the Water Resources Board was elected chair of the Oklahoma Floodplain Managers Association September 10-12 held at Roman Nose State Park.

Jack Graham, Kingfisher, is vice-chair; Neill Pulliam, Tulsa, secretary, and Carolyn Schultz, Tulsa, treasurer. Dan Cary, Norman, will represent Region 1; Abdon Friend, Vinita, Region 2; Cliff Pitner, McAlester, Region 3; Hank Elling, Region 4 and Tommy Wagner, Woodward, Region 5.

Jack Graham, Kingfisher, was voted Floodplain Manager of the Year and

Tulsa Mayor Susan Savage was recognized as Elected Official of the Year. Pat Hoggard, chairman of the Professional Development Committee, was honored for his efforts in devising the OFMA certification program.

Conferees voted to adopt a certification program for floodplain administrators. An exam for certification was offered September 11.

### Signs Protect Water Sources

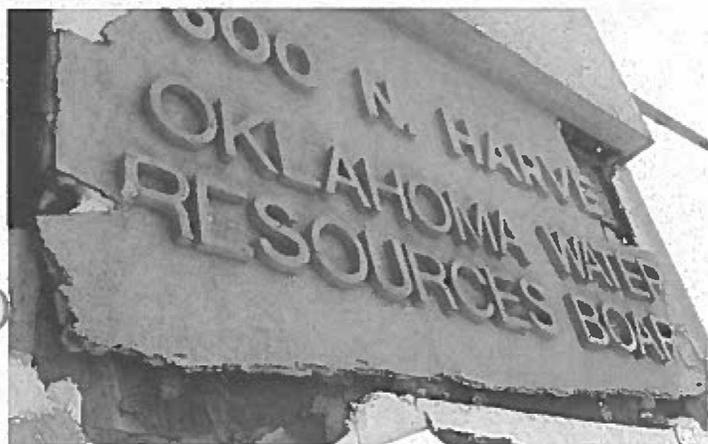
To remind communities that the water they drink next week is just below their feet today, the Illinois EPA and

member of the WaterDawgs Dive Club that hosted the event at the lake's Pine Cove area, 3,400 aluminum cans were recycled by the 32 divers comprising seven teams.

The most unique trash collected in the treasure hunt was the toilet from a cabin cruiser, an unopened bottle of beer and a Corps of Engineers warning sign still mounted on the post.

First, second and third prizes were awarded for the most unique item, the most weight and the most aluminum cans. Morris said the collection filled two big dump trucks provided by the Oklahoma Department of Transportation.

## The walls came tumbling down



The sign on the Harvey Street side of the building was removed to the bombing memorial museum before demolition began on September 5.



A few minutes after eight, the first swing of the two-ton wrecking ball thudded against the south wall.

The relentless swing of the ball peeled the tan stucco skin from the red brick of the structure.



By mid-afternoon, the corner of the building with its once-handsome glass-bricked entrance tumbled to the wrecking ball. Spectators marveled at the thick bundles of reinforcing steel in the columns that had supported the building and protected its occupants.



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Department of Transportation are erecting signs along the roadway to call attention to water sources.

The agencies have cooperated to place signs that warn motorists when they are entering or leaving areas where water supply sources are vulnerable to contamination. Half of the community water supplies are groundwater sources, and although they are out of sight, they are not immune to pollution. So far, 24 communities have erected signs along state and interstate routes at the points where roads enter or leave the water protection areas.



... of the giant ball sent shudders through employees... er Board who had assembled to watch from across... In less than an hour, the ball had opened the elevator lobby of the second and third floors.



September 10, the stalwart building that had stood... against the worst of the blast, lay in a crumbled mass.

... a week after demolition began, shown at left scoops debris from... area. The view is to the north-

### OKEECC Wins EPA Award

The Oklahoma Environmental Education Coordinating Committee, comprised of 16 government agencies and education institutions, was honored by the EPA at the State Capitol on September 16. EPA Regional Director Bill Hathaway presented OKEECC the Environmental Excellence award for cooperative efforts including the Environmental Education Expo, the Seeds for Success Program and the H2Oklahoma Festival.

Members include the OWRB, Office of the Secretary of Environment, Conservation Commission, Corporation Commission, Oklahoma Cooperative Extension Service, Rose State College, U.S. Fish & Wildlife Service, State Departments of Agriculture, Environmental Quality, Tourism, Transportation, Wildlife and Education.



Leslie Nance of the Office of the Secretary of Environment, Lisa Knauf, Oklahoma Conservation Commission and Bill Cauthron of the OWRB display EPA awards.

### Eucha-Spavinaw Study Begins

At the September meeting, the Board approved a contract with the Tulsa Metropolitan Utility Authority (TMUA) to study the nutrient-algae relationship in the Spavinaw-Eucha Lake complex that provides water supply to the City of Tulsa and neighboring communities. Residents complained that water from those sources had a disagreeable taste and odor.

The City of Tulsa attributes the nitrogen- and phosphorus-laden runoff to poultry operations in northeastern Oklahoma and northwestern Arkansas. An earlier study estimated chickens and other confined animals produce more than 10 million pounds of waste -- 8.2 million pounds of nitrogen, 2.5 million pounds of phosphorus -- every year.

The city aims to protect irreplaceable watershed resources to preserve the high quality of Tulsa's water, without damaging the area's economic, recreational and environmental health.

The OWRB study commissioned by TMUA, and performed in cooperation with the City of Tulsa, will establish the relationship between Spavinaw Lake nutrients and phytoplankton and use the relationship to develop a target nutrient value to control algae. The 3-year study will review historical water quality and watershed practices, produce bathymetric maps and evaluate current lake conditions.

According to Derek Smithee, Water Quality Programs division chief, staff and volunteer monitors of Oklahoma Water Watch will participate in gathering baseline data. Volunteer monitors will document the quality of

water and any changes in water quality at their monitoring sites while OWRB and TMUA staff will collect more intensive information. Smithee said throughout the three years, the Water Board will recruit volunteer monitors in the area and educate them on the effects of pollutants in the lake system.

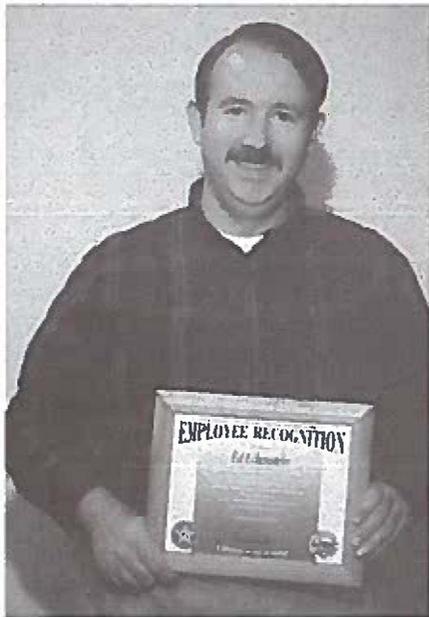
The Water Resources Board's final report will describe target nutrient concentration to control phytoplankton and management of the system to achieve target concentrations and include a long-term monitoring plan.

### Trees Filter Out Pollutants

An experimental water treatment system using trees is reducing harmful nutrient runoff from municipal, agricultural and industrial wastewater, while making the trees grow faster.

Forestry researchers at North Carolina State University sprayed chlorinated wastewater on fields of hardwood and pine trees and found that 60 to 90 percent of the nitrogen and phosphorus in the wastewater was removed in the process. Some of the nutrients are taken up and stored in the trees; other nutrients are used and tied up by microorganisms in the 10 inches of soil near the trees' roots. Fewer nutrients end up as contaminants, and because the wastewater acts as a fertilizer, the sprayed trees grow faster and allow harvest for wood much earlier.

Researchers point out that tre plantations treat wastewater for 6 cents per thousand gallons -- half the cost of traditional secondary treatment methods.



### Eckenstein's Efforts Recognized

Ed Eckenstein of the Technical Studies section in the Board's Planning and Management division was elected Employee of the Quarter in September. He previously worked as a petroleum geologist, but fled the oil patch when prices and production declined in the mid-1980's. He sought additional training in hydrogeology, which led him to the OWRB in 1990.

Recently, he was recognized for his work on the Blaine- Gypsum Recharge Demonstration Project as quality control officer. He was able to come onto the project at a mid point and earn GIS skills to complete mapping begun by a fellow employee who resigned after the 1995 bombing.

He was selected by Water Resources Board employees to lead the agency recovery efforts. Eckenstein was also elected chairman of the inter-agency recovery group composed of all the affected agencies. Those efforts were recognized by Governor Keating on two separate occasions.

He devoted hundreds of hours to assisting state employees in recovery.

### Tupelo Feels 4.4 Earthquake

On the evening of September 6, a magnitude 4.4 earthquake occurred with an epicenter about one mile north of Tupelo in Coal County. It was the largest Oklahoma quake since the magnitude 5.5 El Reno earthquake April 9, 1952.

According to the US Geological Survey, it was felt in over one third of the state. Walls or floors cracked at some locations; an 18-inch wave was reported at Lake Tenkiller; sewer lines cracked and pictures fell.

## OWRB Seeks Solutions to In-Lake Erosion

The , westernmost portions the Fourche Maline arm of Lake Wister in eastern Oklahoma will present a formidable challenge to the Water Resources Board and the Tulsa District Corps of Engineers. With the assistance of Corps' specialists from the Lewisville (Texas) Aquatic Ecosystem Research Facility, they will experiment with plantings of aquatic plant species in the shallowest areas of the lake. In the shallows, fluctuating water levels and wind-driven waves encourage in-lake erosion and algae growth. Instead, researchers hope to establish aquatic macrophytes (wetland plants) to help clarify the murky waters and reduce the nutrient content.

The plantings will have the added benefit of providing habitat for fish and wildlife that was not there before, said Paul Koenig, Board limnologist who oversees the restoration. "We'll try a variety of aquatic plants that are native to temperate climates, root well in mud and flourish in shallow waters," Koenig said. Some of them provide food for wildfowl as well as food, shelter and shade for fish and minute animal life. Some provide haven for insect life that, in turn, provide food for fish, he pointed out.

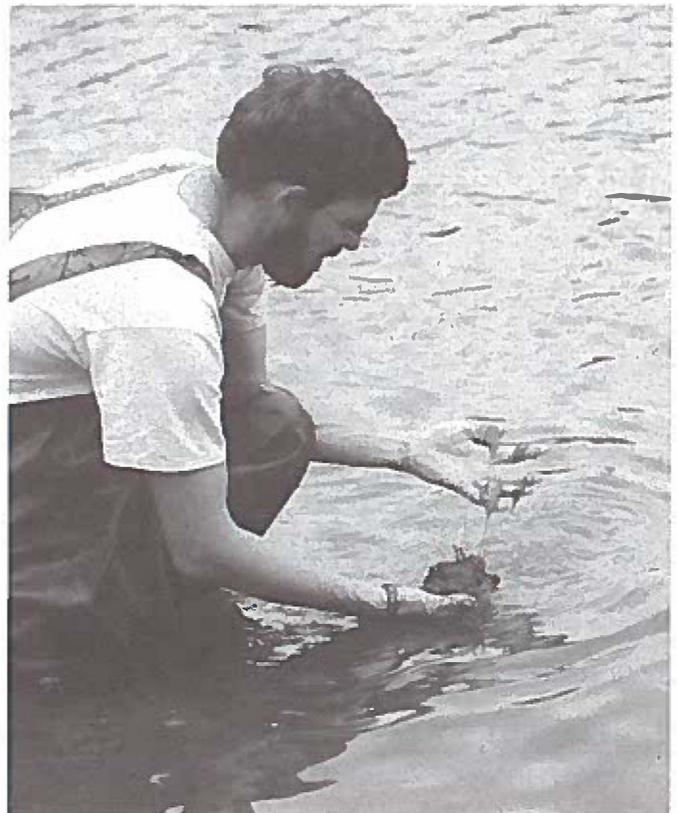
Wister Lake has a history with the Water Board as focus of an intensive Phase 1 Diagnostic/ Feasibility study in 1993-94. Staff of the OWRB Clean Lakes section collected water and watershed data for two years. Koenig says evaluation of the data showed high total phosphorus, turbidity and nutrients from poultry operations

and oil and gas exploration in the watershed. However, Best Management Practices developed for the Poteau River are now being shared across the entire Lake Wister watershed. The new OWRB study will focus on controlling sediment delivery to the Fourche Maline arm. In-lake management practices, including the aquatic plantings, will be necessary to control resuspension of the sediment.

Another strategy relies on the installation of physical barriers to reduce and diffuse wave energy. The OWRB, Corps of Engineers and Oklahoma Department of Wildlife Conservation, will select and install breakwater structures that are friendly to wildlife and recreationists.

Koenig and his crew will protect the plantings with wire cages and fences until seedlings are established. Reservoir pool elevations will be monitored, along with water quality at sites on the Fourche Maline arm, Poteau arm and at the mid-lake stations.

Koenig and OWRB staff will consider the project successful if turbidity and sediment suspension compare favorably to those levels registered at mid-lake, and the aquatic plants thrive and reproduce in the mud flats and shallows. □



Paul Koenig, OWRB limnologist overseeing the revegetation effort at Lake Wister, checks growth of aquatic plants set in the shallows of Lake Wister to control in-lake erosion.

## At the Sept. 9 Board Meeting:

Executive Director Duane Smith told members he had been invited to discuss stream water permitting procedures at the Interim Study on Sardis Lake chaired by Representative Mike Mass at the capitol that afternoon. He also announced that later in the week, he and Assistant to the Director Mike Melton would participate in a tour of Panhandle agricultural operations sponsored by Representative M.C. Leist's House Agriculture Committee. He reminded the Board that the Arkansas-Oklahoma Arkansas River Compact Commission would hold its annual meeting at the Port of Muskogee September 24-25. Smith pointed out that the October Board meeting at Shangri-La would include October 14 tours of the Simmons wastewater and processing facilities and the Cave Springs Branch and Honey Creek that flow into Grand Lake. The Board meeting will be held October 14 at 9:30 a.m.

Financial Assistance Division Chief Joe Freeman asked and received approval of emergency grants of \$97,750 to Clayton PWA; \$97,750 to Fairfax; and \$45,00 to Commerce PWA. The Board approved the following loans from the Wastewater Facility Construction Revolving Loan Fund (SRF): Fort Gibson Utilities Authority, \$360,000; Broken Arrow Municipal Authority, \$1,079,599; and Warner Utilities Authority, \$177,016. The Board approved a \$45,950 amendment to a prior REAP grant to the Town of Nash.

The Board approved a contract with the Tulsa Municipal Utility Authority for a study of pollution problems in the Lakes Spavinaw, Eucha and Yahola system that supplies water to the City of Tulsa.

On the Planning and Management agenda introduced by Division Chief Mike Mathis, temporary permits for the use of groundwater were approved for seven parties and regular groundwater permits were approved for two entities. The Board approved three regular permits to use stream water. A driller/pump contractor's license was approved for Rex Penry, Leedey.

Among the permits approved were two protested applications for groundwater use and one for stream water use. On a remand from district court, the Board again authorized Kronseder Farms to withdraw 2,920 acre-feet of groundwater per year for the operation of a swine farm in Woodward County. The Board approved a protested application for Seaboard Farms to use 50 acre-feet of groundwater per year in Beaver County. Executive Director Duane Smith pointed out that a company must have a substantially complete application on file with the State Department of Agriculture before receiving its water use permit from the OWRB. □

### FINANCIAL ASSISTANCE PROGRAM UPDATE

Approved at September and October 1997

Board Meetings

#### FAP Loans

4.372% 1997 Bonds; 30-year maximum term

Chouteau PWA ..... \$ 840,000.00

#### FAP Grants

Commerce PWA ..... \$ 45,00.00

Clayton PWA ..... \$ 97,750.00

Town of Fairfax ..... \$ 97,750.00

#### SRF Loans

Broken Arrow MA ..... \$ 1,079,599.46

Fort Gibson UA ..... \$ 360,000.00

Warner UA ..... \$ 177,016.00

#### TOTALS

	FAP Loans	FAP Grants	SRF Loans
<b>APPROVED</b>	185	409	61
<b>Amount</b>	\$238,610,000.00	\$23,033,209.32	\$220,851,733.70
<b>FUNDED</b>	176	388	57
<b>Amount</b>	\$233,430,000.00	\$21,153,279.76	\$214,768,118.24

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