



OKLAHOMA

water news

MONTHLY NEWSLETTER OF THE OKLAHOMA
WATER RESOURCES BOARD

Gerald E. Borelli, Chairman

Earl Walker • L.L. Males • Bill Secrest, Jr. • Ralph G. McPherson • Gary W. Smith • Ernest R. Tucker • Robert S. Kerr, Jr. • R.G. Johnson

Board Recruits Top Speakers for Dec. 12 Water Conference

The Fifth Annual Governor's Water Conference December 12 will bring to Oklahoma City's Hilton Inn West a dozen or more top-flight water speakers, importing at least that many alternatives in affording water development and improvements.

Reflecting the state's greater responsibility in financing water programs, the Conference has as its theme "Paying for Water — It's Up to Us." Keynoting the morning session will be Joan M. Kovalic, executive director and general counsel for the Interstate Conference on Water Problems and secretary of the National Water Alliance, who will brief Oklahomans on water issues from a Washington, D.C., vantage point.

Kovalic, a practicing attorney specializing in environmental affairs, formerly was deputy director of EPA's Office of Water Program Operations. During that time, she directed the multi-billion-dollar construction grants program and developed water legislation including the Clean Water Act Amendments of 1981.



Gov. George Nigh



Joan M. Kovalic



Robert A. Olson



Michael C. Turpen

Co-featured with Kovalic in the keynote segment is James R. Nelson, PhD, professor of agricultural economics at Oklahoma State University, who will describe Oklahoma's water situation. Nelson has authored more than 100 papers on the development of land and water resources and the economics of rural community services.

Also speaking on the morning agenda will be U.S. Sen. Don Nickles and U.S. Rep. Wes Watkins, who will provide further insight to national water affairs.

Oklahoma Attorney General Mike Turpen and OWRB General Counsel Tom Lay will recap for conferees several interesting and often troublesome interstate water issues.

Gerald E. Borelli, OWRB chairman, will introduce the luncheon speakers, Governor George Nigh and Acting Commissioner of Reclamation Robert A. Olson. Before being named Acting Commissioner, Olson had served as Assistant Commissioner of Planning and Operations. He directed the power activities in the southwest for the Western Area Power Administration, including the marketing of power from Hoover, Davis, Parker and Glen Canyon Dams.

The first afternoon panel discussion, moderated by Oklahoma League of Women Voters President JoAnn Puckett is entitled "Planning and Paying for Water." Cecil Wildman, PE, longtime state engineer with the Farmers Home Administration presently associated with Settle and Spear Engineers, Inc., will discuss the use of hydraulic analyses in planning and expanding municipal and rural water systems. Then, James R. Barnett, OWRB executive director, will tell conferees how the state's loan and grant program can assist communities in financing water development and sewer and water improvements.

Claudia Peck, PhD, OSU assistant professor of home economics, will address water utility costs in a speech entitled "Realism in Rate-Setting." Rural water costs will be discussed by Marie Dunn, CPA, board member of the Oklahoma Rural Water Association.

A second afternoon panel, "Water to Grow On — Water for Commerce and Industry," will include a discussion of the costs and benefits of conservation by Francis M. Epplin, PhD, OSU assistant professor of agricultural economics;

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Governor's Water Conference, continued from page 1

then remarks on conservation practices and their impact on water quality by John Hassell, director of water quality programs for the Oklahoma Conservation Commission. On the same panel, Port Director Robert W. Portiss of the Port of Catoosa will describe Oklahoma's waterway as "the giant awakening." Following Portiss on the panel will be a discussion entitled "How Much Regulation for Industry's Water."

Following the panels, conferees will adjourn to the Hilton Inn West's Gazebo for a "Cracker Barrel Session," at which time they will have opportunities to ask questions of the panelists in the informal atmosphere "around the cracker barrel."

Registration for the Fifth Annual Governor's Water Conference is open to all interested persons and costs \$15 in advance or \$20 on Conference Day, December 12. Further information is available by calling Mary Whitlow, OWRB conference coordinator, at (405) 271-2581.

REGISTRATION

Please clip and mail to:

**Governor's Water Conference,
Oklahoma Water Resources Board
Post Office Box 53585, Oklahoma City, Okla. 73152**

Name _____

Address _____

City _____ State _____ Zip _____

I have enclosed my check for \$ _____

I will attend the December 11 Early Bird Reception

Conference registration costs \$15 if paid in advance, \$20 on the day of the Conference. Please make check or money order payable to the Governor's Water Conference.

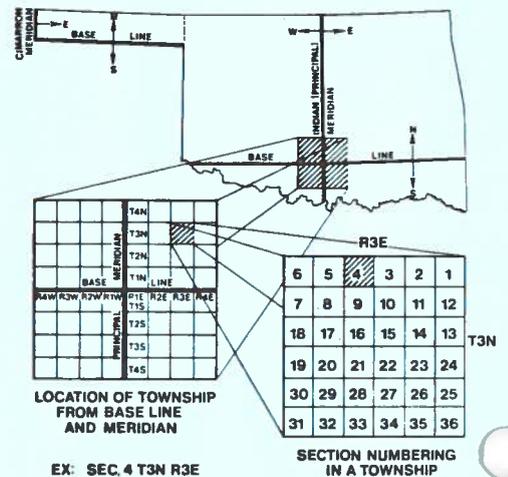
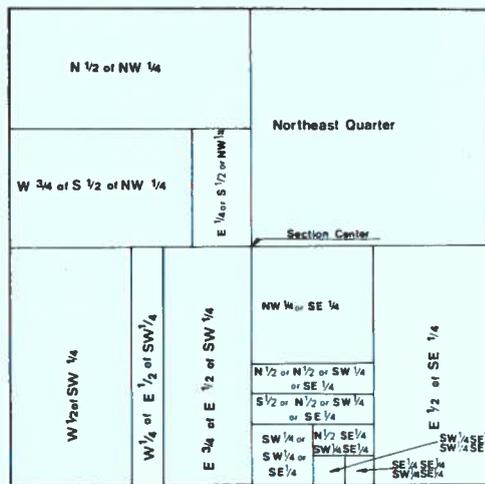
Legal Description Important Part of Filing Water Right at OWRB

SE1/4 SE1/4 SW1/4 SE1/4 Sec. 4 T3N R3E is not macaroni dredged from a bowl of alphabet soup, but rather, to the trained eye of the Oklahoma Water Resources Board, a description of rural land almost as precise as a street address in town.

Such legal descriptions are used in pinpointing on a plat included with any application for ground water or stream water use, the location of a well or diversion structure. Oklahoma has the original federal surveyors of Indian Territory in 1870 to thank for a system of identification so precise. General Land Office surveyors who originated the U.S. Land Survey System established as beginning reference, a point eight miles west of Davis and one mile south of Fort Arbuckle. They surveyed from this point a center north-south line which they named the Principal or Indian Meridian.

Next, they established a line perpendicular to that meridian and called it the Base Line. Lines surveyed parallel to the Base and Meridian were identified as Congressional Townships containing 36 square miles or 36 sections. Townships were numbered north or south of the Base Line, such as T1N or T1S, then the parcels of land were assigned numbers locating them east or west of the Principal or Indian Meridian, such as R1E or R2E. Surveyors numbered sections within each township. A system of quartering sections, then subquartering those parcels allows accurate location of a plot as small as an acre-and-a-quarter.

The Panhandle, added as a "no man's land" at the time of statehood, has its own unique system. It extends north and south from a Base Line which lies nearly parallel to, and as much as 300 feet north of the southern border, causing Township One South to be only a narrow strip of land along the north side of Sections One through Six of each range. The Panhandle's system extends east from the Cimarron Meridian, the western border of the Panhandle.



The map on the right, reproduced from the Board's newest publication, *Oklahoma's Water Atlas*, shows at a glance the system of meridians and base lines first laid out by federal surveyors with the General Land Office in 1870. In center, the square representing a section of land illustrates the method of determining a legal description of parcels of land in the section. Left, a marker stands in Logan County, a silent sentry on the Indian (or Principal) Meridian, a north-south line established in the survey of Indian Territory.

High Plains Farmer Recommends Conservation Tillage for Savings

"You just can't wake up one morning and decide you're going to do all conservation tillage. It takes a lot of nerve to sit there and know that the field has to be planted and that you haven't done anything to it," states Royce McFadden who practices conservation tillage on his land near Olton, Texas, "It's just a way of life to get out there and plow it, work it, and cultivate it to the point of planting. And it's real hard to just let it lay there."

But, no-till technology, as McFadden has discovered, offers agricultural producers one of the best ways to maintain income and yields while cutting production costs. "Last year we grew a corn crop on less than \$50 per acre. We monitored the water fairly close and pumped approximately 16 inches through our sprinkler. I'm proud of that." By comparison, McFadden says regularly tilled corn in his area requires 28 to 36 inches of water either through rainfall or irrigation.

According to McFadden, conservation tillage saves 55 to 100 percent of the water, or between \$25 to \$45 per acre in water costs.

"If I could, I'd do all my farming this way. We started three or four years ago following wheat. Then we tried it with some soybeans and then some maize. We began to wonder how it would work on other things. We also began to see the advantages of leaving the residue on top of the ground."

McFadden questions himself, "Why did we do it? Water was the number one reason. We've just got to save water or we're not going to have any, plus we can't afford to pump it. I guess the main reason I started looking at conservation tillage was that I had too many overhead expenses. The writing was on the wall. I was going to have to quit irrigating as much. Also, when you change over to conservation tillage you cut out a lot of labor. You can do a better job of planning your work, as well. You don't have interruptions like having to go out and run a sand fighter. We don't have any trouble with sand at all."

The other differences McFadden sees in conservation tillage are "When you get ready to harvest, you learn to take care of how you leave the residue. In other words, if we're cutting wheat, we'd like to cut it as high as possible. The number one goal is to try to get all the grain when we harvest the crop, yet leave the wheat stubble as tall as possible."

McFadden, like all farmers, is concerned about weeds. "I've found out that any time I've stirred up the soil, I bring up a whole new generation of weeds. That's why my commitment is more to no-till. It just takes a little more management to control your weeds. But, if you're particular enough and hit it right, you can have a weed-free field. They're not an economic loss, they just hurt your pride. I've had clean fields under regular tillage and weedy fields under regular tillage. It's going to be the same thing under minimum tillage."

McFadden also sees that his soil retains moisture better as a result of his conservation tillage farming. "I really

ACTIVE CONSERVATION STORAGE IN SELECTED OKLAHOMA LAKES AND RESERVOIRS AS OF OCTOBER 22, 1984

| PLANNING REGION LAKE/RESERVOIR | CONSERVATION STORAGE (AF) | PERCENT OF CAPACITY |
|-----------------------------------|-------------------------------|-------------------------|
| SOUTHEAST | | |
| Atoka | 88,800 | 71.5 |
| Broken Bow | 918,100 | 100.0 |
| Pine Creek | 77,700 | 100.0 |
| Hugo | 157,600 | 100.0 |
| CENTRAL | | |
| Thunderbird | 93,958 | 88.7 |
| Hefner | 68,700 | 91.1 |
| Overholser | 12,500 | 78.6 |
| Draper | 73,300 | 73.3 |
| SOUTH CENTRAL | | |
| Arbuckle | 57,638 | 92.1 |
| Texoma | 2,188,325 | 83.0 |
| Waurika | 179,519 | 88.4 |
| SOUTHWEST | | |
| Altus | 9,184 | 6.9 |
| Fort Cobb | 63,127 | 80.5 |
| Foss | 142,200 | 58.3 ² |
| Tom Steed | 62,451 | 70.2 |
| EAST CENTRAL | | |
| Eufaula | 2,103,837 | 90.3 |
| Tenkiller | 590,046 | 94.0 |
| Wister | 27,100 | 100.0 |
| Sardis | 302,500 | 100.0 |
| NORTHEAST | | |
| Eucha | 57,900 | 72.8 |
| Grand | 1,402,600 | 94.0 |
| Oologah | 484,958 | 89.1 |
| Hulah | 30,594 | 100.0 |
| Fort Gibson | 365,200 | 100.0 |
| Heyburn | 5,585 | 84.6 |
| Birch | 17,363 | 90.4 |
| Hudson | 200,300 | 100.0 |
| Spavinaw | 30,000 | 100.0 |
| Copan | 40,438 | 93.2 |
| NORTH CENTRAL | | |
| Kaw | 428,600 | 100.0 |
| Keystone | 469,919 | 76.3 |
| NORTHWEST | | |
| Canton | 44,653 | 45.8 |
| Optima | 3,000 | --- |
| Fort Supply | 10,836 | 78.0 |
| Great Salt Plains | 19,300 | 61.5 |
| STATE TOTALS | 10,824,831³ | 88.0³ |

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.

haven't had a big rain in the past two years, but I just know that water is captured a lot better. Also, to me whenever you make a furrow, you are exposing the maximum amount of soil possible to the sun. Plus, if you've got residue laying on flat ground, it's pretty well protected from the wind.

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High Plains farmer, continued from page 3

"The only drawback I see to conservation tillage is that it's hard to keep my government allotments together and get my rotations going like I want to. The number of acres that you have to set aside is the problem. If you had everything exactly one-third wheat, a third corn and a third cotton, and had all that proportioned with your set-aside, then you could move that all around any way you wanted. But they change the programs and then you don't have enough wheat stubble to put corn back into."

A common complaint McFadden hears from other farmers is, "How do you get a planter through all that trash?" His answer is simple, "To my knowledge, we've never had to stop because of a plug-up of straw. The no-tillage or minimum tillage tools are just built to handle it."

"The biggest drawback is that I spent \$25 to \$30 per acre on chemicals when I could have done it on \$6 per acre using Atrazine. But, then I couldn't have my rotation the way I wanted it. I can plant onions, carrots, or any kind of seed and it will grow. There's no chemicals here that will hurt as far as planting anything else. The newer chemicals are just more selective. They don't work on as broad a spectrum of weeds or crops, but some of them let you do anything with your rotation program."

"I think wheat is a good way to get started on minimum tillage. I think you can come out of wheat into milo or into cotton or corn real well. We have followed maize with corn, and corn with corn, and all with good success."

McFadden sums it all saying, "I started farming in 1958. I guess times were rough then, but I didn't know it. Then starting in about 1979, it didn't keep clicking. I always used to look at minimum tillage and say it wouldn't ever work. But, water's the number one thing along with pumping costs. We've just got to save water. I can do that with my minimum tillage, so I've changed my mind."

Larry Hill, another area conservation farmer echoes

McFadden's concerns, "We were shooting at cutting down the cost of pumping water as well as saving water. We changed to conservation tillage for one thing, it's cheaper. We still produce just about the same, certainly no less with our minimum tillage."

Hill feels, "It's cut my water use. I have low pressure, drop sprinklers and I think it has cut my water use almost in half." Hill doesn't really see any disadvantages to conservation tillage. "It cuts down on your labor, and when you've got other things to do, it makes it a lot easier. You don't have to go out there and hit the ground but maybe once or twice a year and that's all. It cost me from \$5 to \$6 per acre just to run a tractor across the field pulling anything. The more I can keep from running that tractor, the better I like it. It just costs too much."

Granted, there are advantages and disadvantages to conservation tillage and it won't work on every field, but conservation tillage is worth looking into.

This article is reprinted in part with the permission of The Cross Section, the newsletter of the High Plains Underground Water Conservation District #1, of Lubbock, Texas.

Board Opens McAlester Branch Office

A new McAlester branch of the OWRB is open for business to better serve the needs of southeastern Oklahomans, says James R. Barnett, executive director.

The new office is located in the First National Bank Center, 235 E. Choctaw, Room 126, McAlester, 74501 and can be called at (918) 426-5435.

James Adams, former assistant division chief of the OWRB Water Quality division has been appointed office manager, with Hydrologist Tim Smith helping with the field work. Donetta Blanlott of Haileyville has accepted the position of McAlester branch office secretary.

This monthly newsletter, printed by the Central Printing Division of the Office of Public Affairs, Oklahoma City, Oklahoma, is published by the Oklahoma Water Resources Board as authorized by James R. Barnett, executive director. Ten thousand copies are printed and distributed monthly at an approximate cost of 20 cents each.

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OKLAHOMA WATER NEWS

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Oklahoma City, Okla. 73152

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