

# OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board



*from  
the desk  
of Gary  
Sherrer*

On August 1, the Water Resources Board began oversight of a cloud seeding program authorized by an appropriation by the Oklahoma Legislature and approved by Governor Keating in the closing days of the session. It seems appropriate that the money for rainmaking came from the "Rainy Day Fund." Being a lifetime farmer-rancher, I understand the importance of rain at the right time and in the right places. Cloud seeding is a promising tool -- one that the Water Resources Board believes should be included in Oklahoma's overall total water resources management program.

In July the Water Resources Board selected an experienced cloud seeding firm from North Dakota, Weather Modification Inc., which has an impressive record of rainmaking successes in North Dakota and Texas. The Oklahoma effort got underway August 1, was fully operational August 15, and will continue through October 31. The Water Resources Board, the advisory committee and scientists at the Oklahoma Climatological Survey will evaluate the 1996 activities and make recommendations before beginning the spring cloud seeding program March 20 through May 31, 1997.

In the meanwhile, an interim study led by Representative Elmer Maddux will examine the potential for a long-term program of cloud seeding and hail suppression. The study will also research means for supporting and sustaining an ongoing cloud seeding program through local matching funds. □

## Third Commission Determined To Settle Red River Boundary

*Oklahoma's border undecided for over 70 years  
due scrutiny by team from both sides of the river*

A commission composed of Oklahoma and Texas legislators and others is determined to define Oklahoma's southern border and Texas' true northern border. The secret seems buried in the sandlogged, meandering Red River that has separated Oklahoma (or Indian Territory) from New Spain, Mexico and Texas since 1819.

Heading up Oklahoma's Red River Boundary Commission is Senator Robert Kerr of Altus; for the Texas, Commission, attorney Bill Abney of Marshall, Texas. The commissions held a joint meeting in Wichita Falls on June 27 and agreed to schedule a second meeting before September 1. Water Board Executive Director Gary Sherrer, who also serves on the commission, pointed out the border was first negotiated by John Quincy Adams in 1819 as the boundary separating the United States and Mexico. Adams insisted the south bank belonged to the United States. A 1867 treaty with the Kiowa, Comanche and Apache gave the tribes territory north of the middle of the river channel between the 98th Meridian and the North Fork of the Red as their permanent home.

A controversy kindled between the United States and Texas when Oklahoma Territory was created in 1890. Texas claimed that the North Fork of the Red in the area called "old Greer County" was the boundary, while the

U.S. declared the boundary to be the south or main fork of the river. The Supreme Court ruled against Texas in 1896, stating the south or main fork was the boundary and that the south bank of the Red River was indeed the line



Defining banks of the meandering Red River presents problems to the boundary commission.

between Oklahoma Territory and Texas.

The sluggish river and its sandy beds lay in peace until the opening of the Burk Burnett oilfield in the Big Bend area in 1918. Land prices soared, and Texas and Oklahoma again became intensely interested in knowing exactly where the state line lay and which

*Continued on page 2*

***Red River, continued from page 1***

state owned or controlled the minerals under the riverbed. Texas and Oklahoma were fast to claim the oil-rich sands under a variety of laws. Texas fell back on a 1837 act reserving beds of streams over 30 feet wide; Oklahoma claimed the whole riverbed, declaring the Red River "a navigable stream;" north shore owners asserted riparian rights. The riverbed bristled with derricks. Disputes raged and more than one operation was run out of the riverbed by Texas Rangers. Early in 1919, attorneys for both states met in Fort Worth and tried without success to resolve the issue. On March 20, 1920, the feds intervened and appointed a receiver to take over the 42 miles of riverbed and stop all financial transactions. The federal receiver was Frederick A. Delano, an uncle of Franklin Delano Roosevelt, former railroad executive and member of the Federal Reserve Board. Oklahoma flew to the courts for relief.

In a flurry of Supreme Court opinions between 1921 and 1923 the Court held that title to the bed of the river (between the 98th meridian and North Fork) did not pass to Oklahoma at statehood; the Red was not a navigable river; disposal of former Indian lands on the north bank carried with it a right to the bed of the river only to the medial line; the southern half of the riverbed was decreed to belong to the public domain; none of the riverbed oil activity could be operated under mining laws; and indeed, the south bank of the river was the boundary.

## **Residents in Texas and Oklahoma are quick to claim their part of the riverbed.**

These Red River Boundary Commissions and Chairman Kerr are determined that these commissions will succeed where earlier ones failed. Major issues before the commissions include definition of public lands (under the jurisdiction of Interior's Bureau of Land Management); ownership boundaries of BLM and private landowners along the river; determination of in-lieu taxes due counties where public lands are located; and states' jurisdiction in matters concerning wildlife and game laws, criminal laws and property disputes.

Dr. Charles Mankin, director of the

Oklahoma Geological Survey and member of the commission, points out the boundary should meet these criteria:

- ❖ feature that is recognized easily by all parties;
- ❖ feature that does not change though decades of time;
- ❖ feature that is present throughout the entire length of the river.

Mankin suggests as possible Red River south bank boundaries the edge of the active watercourse (which is easy to see but subject to frequent changes); the edge of stable vegetation (also easy to see but changes along the river's course); or the stabilized banks of the river (easy to see, does not change, but is more difficult to justify downstream.)

Sherrer visited the Red River at

Burk Burnett, along with other members of the commissions and federal authorities.

## **The capricious riverbed can shift a half mile overnight.**

Sherrer emphasizes that setting a boundary will have nothing to do with settling private property disputes. "Those will have to be decided by the courts," he said. "Although everyone agrees the boundary is the south bank, actually defining that line is a whole different can of worms," Sherrer said. But if any commission is going to do it, it will be this one," he declared. □

## **Board Develops New Permit to Cut Costs for Small User**

### **"Limited use" permit reduces waiting and red tape for water users who need up to 15 acre-feet a year**

On June 12, Governor Keating signed into law HB 875 that enables the Water Resources Board to offer Oklahomans a new user-friendly permit. The quick and easy new permit allows the use of small amounts of stream water or groundwater and runs through the permitting process in 30 days. Now the OWRB executive director can authorize the issue of the limited use permit to all applicants who meet the few requirements and pay the \$125 permit fee.

According to Executive Director Gary Sherrer, up to 15 acre-feet of stream water can be allocated under regular, seasonal, temporary, term or provisional temporary permits; groundwater in regular, temporary, special or provisional temporary permit categories.

Under ordinary circumstances, the Water Resources Board will issue a "limited use" permit if:

- ❖ there is water available;
- ❖ the applicant plans to put the water to beneficial use without waste;
- ❖ the withdrawal of water will not adversely affect domestic and other users;
- ❖ he/she owns or leases the land on which the groundwater well will be drilled, or
- ❖ he/she owns the stream water

diversion point or has an easement for lines to cross another's property.

Sherrer said the main benefit is that the new permit requires only that the stream water applicant publish one notice in the county of the diversion and the downstream county and allow 10 days for comment. A groundwater applicant notifies by certified mail all owners of land within 600 feet of the boundaries of his/her land, then waits 10 days for written comment. Within 10 days after the end of the comment period, the executive director will approve or deny the permit.

Sherrer points out that it bypasses the usual hearing process and approval by the Board, which takes 60 to 90 days or longer on traditional permits.

"We've designed the permit to be quick and easy for applicants who need to get a business up and running right away," Sherrer said. "We think it will be a big benefit to small businesses and manufacturers, small public water suppliers, builders and developers and farmers and ranchers who irrigate a few acres and water livestock or poultry, and others whose water needs are not great."

Phyllis Robertson, who oversees the Board's permitting section, says

## Water Board Stretches Staff

If it were not for the Water Board's willing crew of seasonal helpers and Carl Albert scholars, many important tasks might go undone. Members of the versatile group are assigned to every division, helping out in a variety of tasks that suit their special talents.

Seasonal helpers, most of them university students or recent graduates, are especially important to the Water Quality Programs division, where an enormous amount of critical water quality data must be gathered in the warm weather months. Carl Albert scholars can lend their talents to the Water Resources Board for terms of six months to two years and offer the advantage of not counting against the agency's allotment of full-time employees.

It's a win-win situation. The Water Resources Board gains willing and talented helpers; the students gain hands-on experience in their field of study. □

**PHOTO RIGHT:** Karen Yuan, left front, is a Carl Albert fellow assigned to the Financial Assistance division; Shanon Haraughty is a CA fellow who assists in the Water Quality Programs division; Charles de Coubre, a CA intern, works in the Financial Assistance division; and Jason Milner, a CA fellow is assigned to the Planning and Management division.

**BELOW:** Christy Hobbs, left, is a zoology graduate from the University of Oklahoma; Darrin Lee, enrolled in the masters program in geography at OSU, is assigned to the Board's Planning and Management division; Kevin Koon, pursuing a masters in geography at OSU, works this summer in the Administrative Services division; Damon Wright is a student in environmental science at OSU; William Hahn is studying biosystems engineering at OSU. Hobbs, Wright and Hahn all are working in the Board's Water Quality Programs division.



Front: Sherrie Effinger, a third grade teacher at Jones, works at the reception desk until school resumes; Julie Cunningham, a Carl Albert fellow, pursues a masters in environmental science at OU; Katrina Conrad-Legler, a May graduate of the OU College of Law, assists in the Office of the General Counsel; Jennifer Halstead is a graduate student at OU working on a masters degree in environmental science; Myles Mungle (right) pursues a degree in biosystems engineering at OSU. Cunningham, Halstead and Mungle all are assigned to the Water Quality Programs division of the OWRB.



## Volunteers Dip Secchi Disks

Seventeen members of the Water Quality Programs division and recruits from Oklahoma Water Watch took part in the Great American Secchi Dip-In June 29-July 7. The annual outing to test the clarity of the nation's lakes is sponsored by the EPA and North American Lakes Management Society. Volunteers are asked to take secchi readings and turn in brief data sheets.

## Staff Learns CPR and First Aid

Twenty members of the Water Resources Board staff attended CPR and first aid classes sponsored by the Red Cross at Board Offices on July 11. Mona Poteet, Red Cross trainer, demonstrates correct position to Hank Elling who attended from the Lawton Field Office.



## Board Honors Mike Henson

Michaele (Mike) Henson holds a framed Resolution of Appreciation presented to her by fellow Board members on her retirement from the Board. Shown with her at the June 11 reception are Board Chairman Ross Kirtley and Robert S. Kerr, Jr., member.



## Water Wisely to Stay Green all Summer

Until the second week in July, Oklahoma had been impaled upon its second-worst drought in history. Rains for the first half of 1996 had been scarce and scattered, especially in central and north central regions where crops, lawns and gardens stung under drought stinging in drought. On July 6, nearly half (43) of Mesonet weather stations recorded temperatures of at least 110 degrees. Hot temperatures and high water use stressed municipal water supplies and budgets, and many cities and towns strained to meet demands pressed by hot, dry weather. Widespread rains relieved most problems, but in Oklahoma's unpredictable climate, drought stands always at the door.

Water conservation indoors and out offers opportunities to extend water supplies and save money. During the winter months, 90 percent of household water use occurs inside the home; in the summer, 50 to 80 percent of water used by the household is outdoors for lawn care. Unfortunately, most water used outside is wasted in inefficient lawn watering practices. Use these tips from the experts to have green grass and healthy shrubs all summer long -- and a little green in your pocket as a bonus.

1. Bermuda grass needs from 1 to 1.5 inches of water every five days.
2. Water turf areas separately from shrubs, flowerbeds and trees.

3. Group landscape plants together according to their water needs to avoid overwatering one plant to meet the needs of another.

4. Water turf areas with sprinklers; trees, shrubs, garden flowers and groundcovers are best watered with low-volume drip, spray or bubbler emitters.

5. Plant low water-use plants such as native or adapted desert willow, redbud, honey locust and juniper trees; shrubs such as youpon holly, pyracantha and honeysuckle; and iris, daylilies and wildflowers.

6. Water during the early morning or evening to reduce losses to evaporation and avoid watering during high winds.

7. Use sprinklers which throw large droplets of water instead of a fine spray. Use soaker hoses to apply water exactly where you want it.

8. Be generous with mulches in flower and shrub beds. Mulch materials are inexpensive, cover and shade soil, minimize evaporation, slow weed growth and erosion.

9. Water trees differently, since their water requirements are greater than grass. Water deeply with a soaker hose. Otherwise, trees develop shallow roots which break up paved driveways and sidewalks. □

--Courtesy "The Cross Section"

## REAP Grant Applications Available

At the July 9 meeting of the Water Resources Board, members adopted rules for administering the grant program set in place by the Rural Economic Action Plan of 1996, or REAP. OWRB Executive Director Gary Sherrer said applications and assistance in completing the forms are available from the Financial Assistance division.

Of the \$17 million in grant funds allocated to assist small communities and rural areas, the OWRB will oversee \$4.5 million for sewer and water improvements. The new program is so similar to the Board's existing grant program that REAP was added as another facet of the Financial Assistance Program.

According to Joe Freeman, Financial Assistance division chief, grant funds will be distributed equitably among cities, towns and unincorporated areas with populations less than 7,000, with priority given to communities with populations of 1,500 or less and entities with less financial capacity. Freeman says the Board welcomes applications now, although no projects will be considered for six months.

For applications, rules, information or assistance, please call the Financial Assistance division at (405) 530-8800. □

## Success Stories Abound in Leak Detection

Ask any manager of a rural water district in Oklahoma what makes or breaks a water system and he or she will tell you it's the bottom line. Success depends on the ability to deliver treated water to customers on a dependable basis and at a reasonable cost.

Rural water districts that have participated in the Statewide Rural Energy and Water Conservation (Leak Detection) Program have improved profits by significantly reducing energy costs and leakage. The program, coordinated by the Oklahoma Water Resources Board and the Oklahoma Rural Water Association has provided eligible districts with interest-free loans up to \$30,000 with these remarkable results:

Annual water loss and energy savings of \$89,041 after repairs to leaking lines, pumping equipment and meters at M&L Water District, Inc., in Okmulgee County. Costs/savings were especially high because M&L's water supply was purchased.

Water loss savings of \$2,300; energy savings estimated at \$2,600 in a single year at Cherokee County Rural Water District #13. Water losses ranged from 10 to 31 percent. Water audit and leak detection recommendations were made to improve pumping and plant operations.

Water loss/energy savings estimated at \$11,640 at West Davis Rural Water Corporation. Annual water losses estimated at 33 percent reduced to 10 to 15 percent. Water audit and leak detection recommendations included repair of leaky check valves and adopting more efficient operational procedures at two pump stations.

According to Hydrologist Terri Sparks, who oversees the program, no-interest loans are available to water districts, nonprofit corporations, municipalities and public trusts that provide water service to populations of 10,000 or less. The program targets rural communities which lose millions of gallons of treated drinking water through water line leaks and malfunctioning meters. Sparks points out that no-interest loans are available for water audits, leak detection surveys and associated repairs.

The leak detection program is funded by \$300,000 in oil overcharge money from the U.S. Department of Energy. It is administered by the Oklahoma Water Resources Board with assistance in water audits and leak surveys by the Oklahoma Rural Water Association.

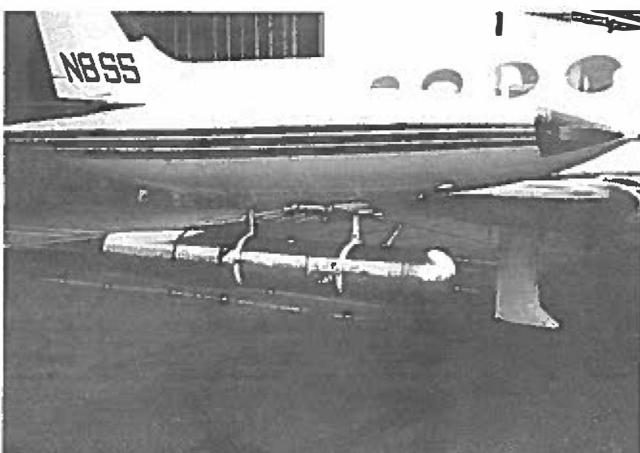
For information, call Terri Sparks in the Planning and Management division of the OWRB at (405) 530-8800. □

## Statewide Cloud Seeding Project in Place

Too often this summer, farmers and ranchers watched promising clouds form then fade, drifting away without depositing the precious moisture needed by parched crops and pastures. Now perhaps there is a remedy for Oklahoma in a program of weather modification (cloud seeding) that has brought drought relief to other states. Although weather modification has not been conclusively demonstrated in Oklahoma, Kansas reports a 10 percent increase in rainfall and 27 percent reduction in hail. Similarly, North Dakota logged a seven to 14 percent increase in rainfall with a 45 percent reduction in hail and Texas, through a carefully controlled seeding experiment, has declared 10 to 45 percent increases in precipitation. Those states have successfully utilized a cloud seeding strategy over many years in which specially equipped aircraft deliver silver iodide and/or dry ice into promising cumulus clouds to initiate rainfall.

Oklahoma's statewide cloud seeding program will be conducted by

Weather Modification, Inc. of Fargo, North Dakota. Patrick Sweeney, president of WMI, will dedicate three project aircraft, two mobile radar units and trained flight and ground crews to the operation. Project Director Dr. Terry Krauss will be on site during all operations.



Cloud seeding equipment such as this Cessna 340 with wingtip generator and flare rack will be used in Oklahoma's weather modification effort that got underway in August.

The program will be conducted in two segments -- one underway now through October 31 and a second effort in the spring of 1997.

According to Mike Mathis, OWRB Planning and Management division chief and a meteorologist, the planes will carry and inject silver iodide and/or dry ice seeding into selected cloud formations. The seeding agent provides particles upon which the cloud's tiny droplets of moisture can condense.

These seeding agents are effective when cloud temperatures are 32 degrees F or colder and introduction of such materials into a super-cooled cloud causes the liquid droplets to freeze. With millions of repetitions of this freezing action, additional heat is produced. This heat of fusion makes the cloud more buoyant, thrusting it higher, helping it grow larger and enabling it to produce more rain for a longer period than it would have without seeding. The ice crystals formed in the cloud also grow by merging with frozen or supercooled droplets until they are heavy enough to fall, melting into raindrops on their fall to earth.

Mathis says controversy and misunderstanding have swirled about the technology as long as it has existed. A common misconception concerns cloud seeding "stealing" rain from adjacent areas. He pointed out that there is no evidence that seeding clouds over one area robs another area of rain if the pattern had not been interrupted. "In fact, there is evidence from other states' programs that more precipitation has fallen in areas 100 miles or more downwind from the target area," he said.

In further explaining the seeding strategy, Mathis pointed out that clouds selected by experts for seeding have nearly reached the rain stage, or in many cases, it is already raining. Seeding clouds can increase the efficiency of the rain mechanism and decrease the cloud's ability to produce damaging size hail. Clouds will dissipate when the general atmospheric conditions can no longer support their continued growth, whether they have been seeded or not. □

## At the July 9 Board Meeting:

Executive Director Gary Sherrer reported on the meeting of the Red River Boundary Commission on June 27 in Wichita Falls, Texas, which he and General Counsel Dean Couch attended as delegates.

Sherrer also told the Board that Joe Freeman, Financial Assistance division chief, was injured in an accident on June 20, and during his absence, Assistant Chief Paul Hodge would act in Freeman's behalf.

In the Financial Assistance division portion of the agenda, Hodge asked and received the Board's approval of a \$83,470 emergency grant for the Town of Pittsburg (Pittsburg Co.) and a SRF loan for \$460,000 for Helena Public Works Authority (Alfalfa Co.) Hodge asked approval for the Glenpool Utility Service Authority (Tulsa Co.) to apply remaining loan funds to repairs to a water pump lift station damaged by flood.

The Board approved 14 temporary permits and 14 regular permits for the use of groundwater and amended four temporary and three regular permits for groundwater use. The Board approved eight regular permits for the use of stream water.

New driller/pump contractor licenses were approved for David Crane, Gerald Miligan, Steve Wolfe, Ralph Flores, Jr., Joe Hernandez, Gerald Simpson, E. Glenn Isham, David Isham and Bradford Joe Evans. Three licensed firms added operators/activities: Envirotech Services, Inc., Earl Horner; Total Support Services, Inc., Richard Reherman; Environmental Probing Service, Steve Yuza.

Jerry Barnett of the Office of the General Counsel explained draft emergency rules proposed for the Board's administration of the new Rural Economic Action Plan (REAP) grant program to be included in the activities of the OWRB Financial Assistance division. The Board approved draft rules.

Assistant Director Duane Smith asked the Board's approval of a new limited use permit proposed for addition to the permitting schedule. Smith explained it is a permit intended for users of small quantities of water -- up to 150 acre-feet a year. The Board approved draft emergency rules for REAP and the limited use permit and they await approval by Governor Keating. □

### FINANCIAL ASSISTANCE PROGRAM UPDATE

Approved at June and July 1996 Board Meetings

#### FAP Loans

3.772% 1995 Bonds; 28.5 year maximum term

3.922% 1994; 28.5 year maximum term

Salina PWA .....	\$ 1,700,000.00
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#### FAP Grants

Calvin PWA .....	\$ 60,350.00
Comanche RWD #3 .....	\$ 100,000.00
Rogers RWD #14 .....	\$ 100,000.00
Town of Pittsburg .....	\$ 83,470.00

#### SRF Loans

Helena PWA .....	\$ 460,000.00
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#### TOTALS AS OF 7/9/96

	FAP Loans	FAP Grants	SRF Loans
APPROVED	166	388	43
Amount	\$ 210,745,000.00	\$ 21,804,897.00	\$ 173,088,834.23

	FUNDING	354	38
Amount	\$ 202,795,000.00	\$ 19,321,707.41	\$ 167,809,834.23

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 RECYCLED PAPER

J. Ross Kirtley, Chairman	BILL Sechrist	Ervin Mitchell	Robert S. Kerr, Jr.	Wendell Thomasson	Richard McDonald	Dick Seybold	Lorraine L. Farmer	Jack M. Givens
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