

# OKLAHOMA WATER NEWS

Bimonthly Newsletter of the Oklahoma Water Resources Board

## Costly New Regulations Target of Nov. 18 Water Conference

**Cities, towns, RWDs, farmers and industries  
Ask "How Clean? How Costly? How Can We?"**

That dilemma is the theme of the November 18 Governor's Water Conference on which informed and articulate "water people" will seek to shed light.

The Thirteenth Annual Governor's Water Conference, coordinated by the Oklahoma Water Resources Board and sponsored by 30 water-related organizations, will be held at the Oklahoma City Marriott, 3233 Northwest Expressway.

Water Resources Board planners and Conference sponsors are assembling an agenda intended to illuminate alternatives, if not solutions, to high costs of treating drinking water and municipal and industrial wastewaters.

Over recent years, the U.S. Environmental Protection Agency has increased the pressure applied to water systems to add costly treatment and monitoring procedures and set tough deadlines for compliance. However, as EPA's expectations soared, federal dollars to state drinking water programs have plummeted.

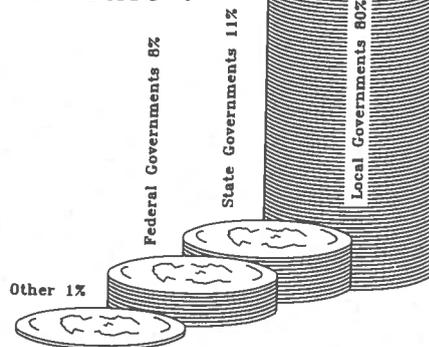
Water systems, large and small, are expected to incur enormous costs and face difficult new challenges in achieving compliance. Annual compliance costs to water systems are expected to reach \$3 billion for the next two decades. These costs are over and above enormous capital re-

quirements for repair, replacement and growth in the basic infrastructure.

The double-whammy of new requirements and slashed funding does not stop with public water supply programs. Municipal and industrial wastewater management programs

### Funding CWA Capital Needs

#### WHO PAYS ?



have also taken big hits. Of the \$22.6 billion required to meet new requirements in 1990-1995, only \$1.8 billion, or eight percent, is expected to be provided by the feds.

The blow falls on the states at a time when many are coping with crippled economies.

### Register on page 2

These are the issues the agenda of the Governor's Water Conference

will address. Among the speakers will be Ben Lesser, Special Assistant to the Assistant Administrator for Water, U.S. Environmental Protection Agency, Washington; Walter E. Hill, Deputy Under Secretary of Agriculture for Small Community and Rural Development; Eric J. Groves, Oklahoma City attorney who has challenged the enforceability of some EPA regs; John Baker, Agriculture Advisor to the EPA Administrator; Mike Marcotte, Director of Dallas Water Utilities, a regional water and wastewater management system; and Steven L. Elstein, Assist-



**Mike Marcotte**  
Dallas Water Utilities

ant Director for Water Quality Issues, U.S. General Accounting Office. Elstein is a major contributor to the July 1992 GAO report, "Drinking Water, Widening Gap Between Needs and Available Resources Threatens Vital EPA Program."

"Water Gazette," a new feature to the Conference, will headline impor-

*Continued on page 2*

*Conference, continued from page 1*

tant Oklahoma water issues including Navigation and Montgomery Point Lock and Dam, by Bob Portiss, Catoosa Port Director; Reorganization and Oklahoma's new Department of Environmental Quality, by Sen. Cal Hobson, Co-Chair of the Joint Legislative Environmental Task Force; and Water Research at the Universities, by Dr. Tom Collins, Director of the OSU Center for Water Research.

Governor Walters, legislative leaders and members of the Congressional Delegation are invited to participate in the luncheon program. Water Pioneer awards will recognize two Oklahomans for outstanding contributions to the protection, conservation and development of the state's water resources. Presentation of Water Pioneer awards will close the program mid-afternoon.

Registration, which includes the luncheon, will cost \$25. To register, please fill out the form below and return it with your check, money order or purchase order made to the **Governor's Water Conference**.

For more information on the Governor's Water Conference, please call Mary Whitlow, Conference Coordinator, (405) 231-2523.

For room reservations at the special Water Conference rate of \$70, please call the Marriott Hotel at (405) 842-6633.

## Summer Rainfall Six Inches Over Normal

July was wet across Oklahoma, with average total precipitation of 4.28 inches, exceeding the 30-year normal for the month by 1.66 inches. August registered 1.19 inches above normal, pushing the summer (June, July, August) rainfall total to 15.56 inches, or 6.17 inches above normal.

The unseasonable summer weather produced flash floods, hard steady rains, wind and hail that hammered many areas in August and early September. Storms in the northwest quadrant at Enid, Weatherford and Fairview and in the east at Henryetta and Dewar damaged homes and businesses, flooded roads, interrupted water supplies and plunged some

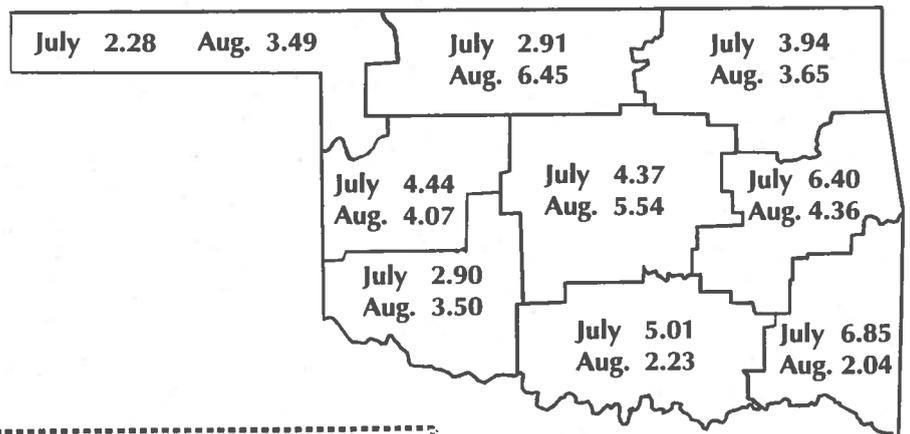
areas into several feet of water.

At Henryetta, hard nighttime rains on August 5 pushed Coal Creek over its banks. Water deep enough to cover cars surged through the center of town and into stores. High waters drove residents from their homes, forced evacuation of a nursing home and set merchandise afloat in four feet of water in a department store.

At nearby Dewar, storms inflicted major damage on 33 homes and left 15 more with some scars.

September roared into Enid with hail and rain that pitted cars, ripped roofs, smashed windows and swept a car from a bridge, drowning its occupant. Golf ball-sized hail pelted roofs,

**PRECIPITATION (INCHES)  
BY CLIMATE DIVISION**



**Governor's Water Conference**  
**Attn: Connie Ziegelgruber**  
**P.O. Box 150**  
**Oklahoma City, OK 73101-0150**

Please make \$25 check or purchase order payable to **GOVERNOR'S WATER CONFERENCE**. No refunds considered after November 12. Registration includes luncheon.

Name \_\_\_\_\_

Representing \_\_\_\_\_

Address \_\_\_\_\_

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

ZIP \_\_\_\_\_ Phone (\_\_\_\_) \_\_\_\_\_

exposing homes to damage by the three inches of rain that fell during the early hours on September 2.

At Fairview on August 30, heavy, slow-moving thunderstorms forced some residents from their homes and set oil tank fires. The National Weather Service estimated six inches of rain fell in Major County between 4 a.m. and 2 p.m., causing water to accumulate up to four feet in low areas and closing some roads.

On August 26, Weatherford received a three-inch downpour that stood in shallow lakes in fields and neighborhoods.

Although storms were frequent and frequently severe throughout the summer in Oklahoma, it was not a period of record rainfall.

# Is Texas Aquifer "Underground River?"

The water in the Edwards aquifer in south Texas was legally and officially "groundwater" until April 15, when the Texas Water Commission declared the aquifer an "underground river" and placed its water under the laws governing surface water rights and use.

Out of concern for overdraft, the TWC had earlier proposed an interim management plan to major water users, among them the City of San Antonio, big irrigation districts and industrial water users. Deadline for approval was April 14, and when the deadline passed, the three-member Commission adopted emergency rules prohibiting drilling of new wells and requiring present water users to apply for new permits by September 1. By declaring the aquifer an underground river, the TWC can limit, curtail or amend permits for future water use. As "river" water, it becomes property of the state, instead of the landowner, as set out in English common law doctrine, which Texas courts have traditionally upheld.

The Water Commission presumes all water below the land surface to be percolating groundwater and property of the landowner, "unless it is established that the water is an underground stream or the underflow of a surface stream." The Commission holds that the aquifer has four charac-

teristics that set it apart as an underground stream: (1) definable boundaries; (2) water movement; (3) known recharge points; and (4) known discharge points.

The Edwards Aquifer—or Edwards Underground River—is a narrow, bowshaped band five to 40 miles wide and 175 miles long, extending from near Brackettville in Kinney County, east through San Antonio, then northeast to Hays County. Water from surface streams flows across the outcrop area, and some of this is lost to the permeable rocks of the aquifer that are exposed at land surface. This accounts for about 80 percent of its recharge; the balance is added by percolation and recharge through fractures and solution cavities.

Water of the Edwards Aquifer flows down gradient, moving west to east to northeast before emerging in several sizable springs. The springs contribute to the flow of Nueces, San Antonio and Guadalupe River basins, as well as bays and estuaries, before entering the Gulf of Mexico.

Water from the aquifer supports many unique or endangered species. The Guadalupe River basin is rich in fish and aquatic plant species, and the aquifer itself is claimed to be the habitat for rare species of blind salamanders and catfish.

*Continued on page 5*



## Board Approves Playa Permit

The Water Resources Board approved a unique permit for groundwater use in Texas County at its regular meeting August 11. The permit will allow the Oklahoma Department of Wildlife Conservation to deepen a playa lake and supplement its water with groundwater pumped from a single well.

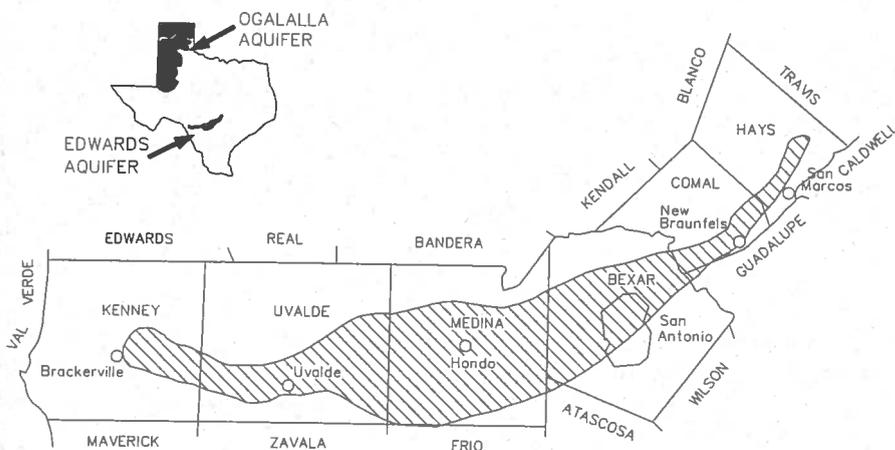
The biggest beneficiaries of the Panhandle's playa lake project will be waterfowl migrating via the central flyway. According to ODWC Biologist Mike O'Meilia, it is important to provide winter respite to migrating birds, thousands of which winter in Oklahoma. O'Meilia pointed out that wild duck populations in the U.S. have declined from 100 million to less than 70 million in recent years.

Consideration of the application had been carried over from the Board's July meeting, at which time the motion to approve the permit had failed to gain a second. Since the use of groundwater to enhance a playa lake was a "first" in Oklahoma, the board earlier had questioned whether such use would constitute waste by depletion. Most of the Panhandle's playa lakes are shallow and short-lived, with no source of supply except rainfall and runoff. Their large surfaces and shallow depths allow high evaporation, which the Board suggested might be wasteful in western Oklahoma's arid climate.

The project is part of the Playa Lakes Joint Venture, one of several in the U.S. and Canada sponsored by the U.S. Department of Interior Fish and Wildlife Service and Environment Canada. The effort seeks to establish up to five playa lake habitat areas in the Oklahoma portion of the wildfowl flyway.

## \$10 Is Cheap for a Steak

If the cost of an 8-ounce steak doesn't choke you up, its cost in terms of water will. A new study by the Water Education Foundation reports that a typical, 8-ounce boneless



beef steak requires over 1,200 gallons of water before it reaches the table.

A comparable portion of chicken requires only 165 gallons, while a half-cup of soybean tofu needs just 60 gallons. The study points out that even a 4-ounce hamburger patty requires over 600 gallons of water to produce. The research by the Sacramento-based Water Education Foundation updates figures gathered in 1978 by the University of California Cooperative Extension.

The new study takes into account changes in diet, crop varieties, yields, agricultural practices including irrigation, food processing and marketing practices. The Foundation also emphasizes that while it requires one-half to one acre foot of water to supply the annual indoor and outdoor water needs of one or two households of up to five people, it takes much more water to produce food for those households.

The study assessed a beefsteak to be most water-consumptive and a cup of lettuce to be the most water efficient, using just under three gallons. Other foods and their water usage include one slice of white bread, 10.6 gallons; a slice of wheat bread, 7.3 gallons; a 2-ounce serving of pasta, 35.9 gallons; an 8-ounce serving of milk, 48.3 gallons; one egg, 62.7 gallons and one cup of plain yogurt, 87.6 gallons.

According to "U.S. Water News," the new study, "Water Inputs in California Food Production," is available from the Water Education Foundation, 717 K. Street, Suite 517, Sacramento, CA 95814.

### Satellite to Observe Oceans

The U.S. and France soon will launch a satellite to map the oceans, predict global warming and study El Nino, the weather phenomenon that periodically triggers deadly droughts and storms. (The name refers to the Christ child in Spanish, because the warming of eastern Pacific Ocean water often is noted off Peru around Christmas.)

The \$706 million Topex-Poseidon spacecraft could provide data that

*Continued on page 5*

## Third in a Series . . .

### Meet the Water Resources Board

*In this issue we introduce the newest member of the Oklahoma Water Resources Board. The nine citizens who serve on the Board are appointed to seven-year terms by the governor. They represent all sectors of the state and all categories of water use.*

J. Ross Kirtley, CPA, Kingfisher, assumed his seat on the Board in June. He credits his interest in the OWRB Financial Assistance Program to his background in accounting. Kirtley graduated summa cum laude with a B.S. degree in accounting from Southwestern Oklahoma State University in Weatherford.

"I believe the issuance of bonds for underwriting loans and grants to Oklahoma cities, towns and rural water and wastewater districts for establishing and improving water supply and infrastructure is very important to Oklahoma," he says. "It's exciting to have a part in shaping policies regarding water resources and water quality."

He is convinced of the importance of Oklahoma having long-term plans to assure sufficient water and high quality water for future generations. "It is critical that the Water Board update the Oklahoma Comprehensive Water Plan," he says.

Kirtley says he is particularly interested in the negotiations with Texas concerning the sale of surplus water from Sardis Reservoir in southeast Oklahoma. "It certainly must be considered as a potential source for state

revenue."

Kirtley belongs to the American Institute of Certified Public Accountants and the Oklahoma Society of Certified Public Accountants. He is a member and past president of the Kingfisher Chamber of Commerce, treasurer of the Kingfisher Rotary Club, Kingfisher Education Foundation, commissioner and treasurer of the Kingfisher Little League.

He is married and the father of sons, seven and 10 years old. On his own time, Kirtley is a quail hunter, jogger, horseman, snow skier, golfer and tennis player.



J. Ross Kirtley

#### FINANCIAL ASSISTANCE PROGRAM UPDATE Approved at August and September Board Meetings

##### Grants

Taloga PWA	\$25,000
Harrah PWA	\$25,000
Gould PWA	\$25,000
Osage RWD #11	\$55,000
Fairfax	\$18,274
Rocky	\$35,000
Mountain Park	\$20,000
Jennings PWA	\$30,000
Cyril	\$40,000
Stephens RW,S & SWMD	\$75,000
Hulbert PWA	\$25,000

##### Loans

(3.592%; 30-year maximum term)

Taloga PWA	\$280,000
Wynona MA	\$145,000
Altus MA	\$3,560,000
Calera PWA	\$270,000

##### SRF Loans

Nicoma Park DA	\$1,445,000
----------------	-------------

##### Totals as of 9/15/92

	FAP Loans	FAP Grants	SRF Loans
Approved	106	281	9
Amount	\$98,955,000	\$16,640,604	46,157,500
Funded	92	247	6
Amount	\$91,010,000	\$14,684,513.37	\$40,806,500

*Satellite, continued from page 4*

would guide the placement of offshore oil rigs and mining operations, nuclear plants and other facilities that must withstand hurricane storm surges. It could guide in safe siting for seabed hazardous waste dumps, predict when icebergs will obstruct sea lanes and route ships along faster currents.

The cost-shared Topex-Poseidon is carried in an 830-mile-high-orbit by an Ariane 42P rocket launched in August from a site in Kouru, French Guiana. Topex stands for topography experiment; Poseidon is the Greek sea god.

Researchers don't expect the satellite to aid in daily weather forecasts, but say it will improve their ability to predict El Nino. More than 200 scientists from 12 nations will study Topex-Poseidon's data.

The current El Nino, which is waning, brought blistering droughts to southern Africa and mid-Pacific islands and heavy rains to California, Texas, Ecuador and Peru. A more severe El Nino in 1982-83 caused droughts and storms blamed for 1,500 deaths and \$8 billion in damages worldwide.

From its orbit tilted 66 degrees from the equator, Topex-Poseidon will circle the earth 13 times daily and will fly above the same spot every 10 days.

On September 15, Board Chairman Robert S. Kerr, Jr., and Col. Otis J. Williams of the Tulsa District Corps of Engineers signed a contract to begin a feasibility study of the site proposed for the construction of Mangum Reservoir.



**Board to Begin Mangum Study**

At its monthly meeting September 15, the Oklahoma Water Resources Board approved a contract with the U.S. Army Corps of Engineers to investigate the feasibility of constructing Mangum Reservoir in western Oklahoma.

Board Chairman Robert S. Kerr, Jr., said the \$100,000 appraisal level study will be funded through the Federal Planning Assistance to the States Program which provides 70 percent matching funds to assist states in the preparation of plans for the development, utilization and conservation of water and related land resources. The reservoir is proposed for construction on the Salt Fork of the Red River.

Kerr said local entities will contribute 10 percent of the necessary funds for the study, with the remaining 20 percent contributed by state sources.

According to Mike Mathis, chief of OWRB's Planning Division, scheduled work includes studies of environmental impacts, cultural resources and recreational needs in the area and the hydrology and geology of the site. A major component of the study will be developing appraisal level design and cost estimates for three separate dam sizes upstream of Mangum.

The study report is scheduled for completion by September 1993.

*Aquifer, continued from page 3*

Tourists enjoy recreation afforded by annual spring flow of about 200,000 acre-feet from Comal Springs at New Braunfels and 115,000 acre-feet per year at San Marcos Springs. Water-related theme parks abound. According to the TWC, Comal and San Marcos Springs provide 20 to 30 percent of the total annual spring flow and up to 70 percent of the total flow of the Guadalupe River at Victoria, Texas, during droughts.

It is difficult to determine all the ramifications, but court action is being considered by San Antonio and some western agricultural counties. On the other side, the Sierra Club seeks protection of the aquifer and its rare and endangered species in Federal Court. New York bond-rating agencies are concerned that the TWC action will affect San Antonio's ability to repay \$620 million in sewer and water bonds. Indeed, so far-reaching are the implications that many expect the Texas Legislature to take up the Edwards Aquifer/Edwards Underground River issue as its first order of business.

A meeting was held on August 12 at the Water Resources Board offices to lay ground rules for negotiations for the sale of surplus water from Sardis Reservoir to the North Texas Municipal Water District. Seated clockwise from left: Dean Couch, OWRB general counsel; John Gay, NTMWD attorney; Robert Mansell, NTMWD assistant to the general manager; Carl W. Riehn, NTMWD executive director and general manager; Duane Smith, OWRB assistant director; Mike Mathis, OWRB Planning division chief; and Patty Eaton, executive director. Far right is Michael Melton, assistant to the director.



**STORAGE IN SELECTED OKLAHOMA LAKES & RESERVOIRS  
AS OF SEPTEMBER 14, 1992**

PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (acre-feet)	PRESENT STORAGE (acre-feet)	PERCENT OF STORAGE		PLANNING REGION LAKE/RESERVOIR	CONSERVATION STORAGE (acre-feet)	PRESENT STORAGE (acre-feet)	PERCENT OF STORAGE	
			conservation	flood				conservation	flood
<b>SOUTHEAST</b>					<b>EAST CENTRAL</b>				
Atoka	124,100	124,100	100.0	N/A	Eufaula	2,314,600	2,314,600	100.0	6.0
Broken Bow	918,070	891,641	97.1	0.0	Tenkiller	654,100	654,100	100.0	1.4
Hugo <sup>1</sup>	187,603	187,603	100.0	0.1	Wister <sup>1</sup>	58,601	58,601	100.0	9.1
McGee Creek	113,930	113,930	100.0	7.1	<b>NORTHEAST</b>				
Pine Creek <sup>1</sup>	73,346	73,346	100.0	1.5	Birch	19,200	17,885	93.2	0.0
Sardis	274,330	274,330	100.0	1.3	Copan	43,400	43,400	100.0	0.1
<b>CENTRAL</b>					Eucha	79,600	73,375	92.2	N/A
Arcadia	27,520	27,520	100.0	1.4	Fort Gibson	365,200	365,200	100.0	1.7
Hefner	75,400	70,045	92.9	N/A	Grand	1,672,000	1,672,000	100.0	6.6
Overholser	15,900	15,169	95.4	N/A	Heyburn	7,105	7,105	100.0	0.8
Stanley Draper	100,000	93,093	93.1	N/A	Hudson	200,300	200,300	100.0	5.1
Thunderbird	119,600	119,600	100.0	1.2	Hulah	31,160	31,160	100.0	0.1
<b>SOUTH CENTRAL</b>					Oologah	553,400	553,400	100.0	4.5
Arbuckle	72,400	72,400	100.0	1.2	Skiatook	322,700	307,154	95.2	0.0
Texoma	2,643,300	2,639,717	99.9	0.0	Spavinaw	30,590	30,425	99.5	N/A
Waurika	203,100	203,100	100.0	0.8	<b>NORTH CENTRAL</b>				
<b>SOUTHWEST</b>					Kaw	428,600	428,600	100.0	3.8
Altus	132,830	107,337	80.8	0.0	Keystone	557,600	557,600	100.0	4.4
Ellsworth	72,490	67,327	92.9	N/A	<b>NORTHWEST</b>				
Fort Cobb	80,010	80,010	100.0	0.8	Canton	111,310	77,618	69.7	0.0
Foss	178,410	169,981	95.3	0.0	Fort Supply	13,900	13,502	97.1	0.0
Lawtonka	58,327	57,000	97.7	N/A	Great Salt Plains	31,420	31,420	100.0	0.9
Tom Steed	88,970	88,970	100.0	3.9	<b>STATE TOTALS</b>	<b>13,054,422</b>	<b>12,913,664</b>	<b>98.9</b>	<b>2.1</b>

<sup>1</sup> Seasonal pool operation

N/A—not applicable; no flood storage allocation.

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

Mary E. Whitlow, Editor

Barry Fogerty, Photographer

Brad Nesom, Layout Artist

Brian Vance, Writer

This bimonthly 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 Patricia P. Eaton, executive director. Ten thousand copies are printed and mailed bimonthly at an approximate cost of 28 cents each. Copies have been deposited at the Publications Clearinghouse of the Oklahoma Department of Libraries.

OKLAHOMA WATER NEWS  
Bimonthly Newsletter of the  
Oklahoma Water Resources Board  
600 N. Harvey, P.O. Box 150  
Oklahoma City, OK 73101-0150

Robert S. Kerr, Jr., Chairman  
Bill Secrest  
R. G. Johnson  
J. Ross Kirtley  
Frank H. Condon  
Mike Henson  
Richard McDonald  
Ervin Mitchell  
Dick Seybolt

**BULK RATE**  
U.S. POSTAGE  
**PAID**

Oklahoma City, Okla.  
Permit No. 310



The Oklahoma Water News  
is printed on recycled paper  
in biodegradable oil-based  
soybean ink.