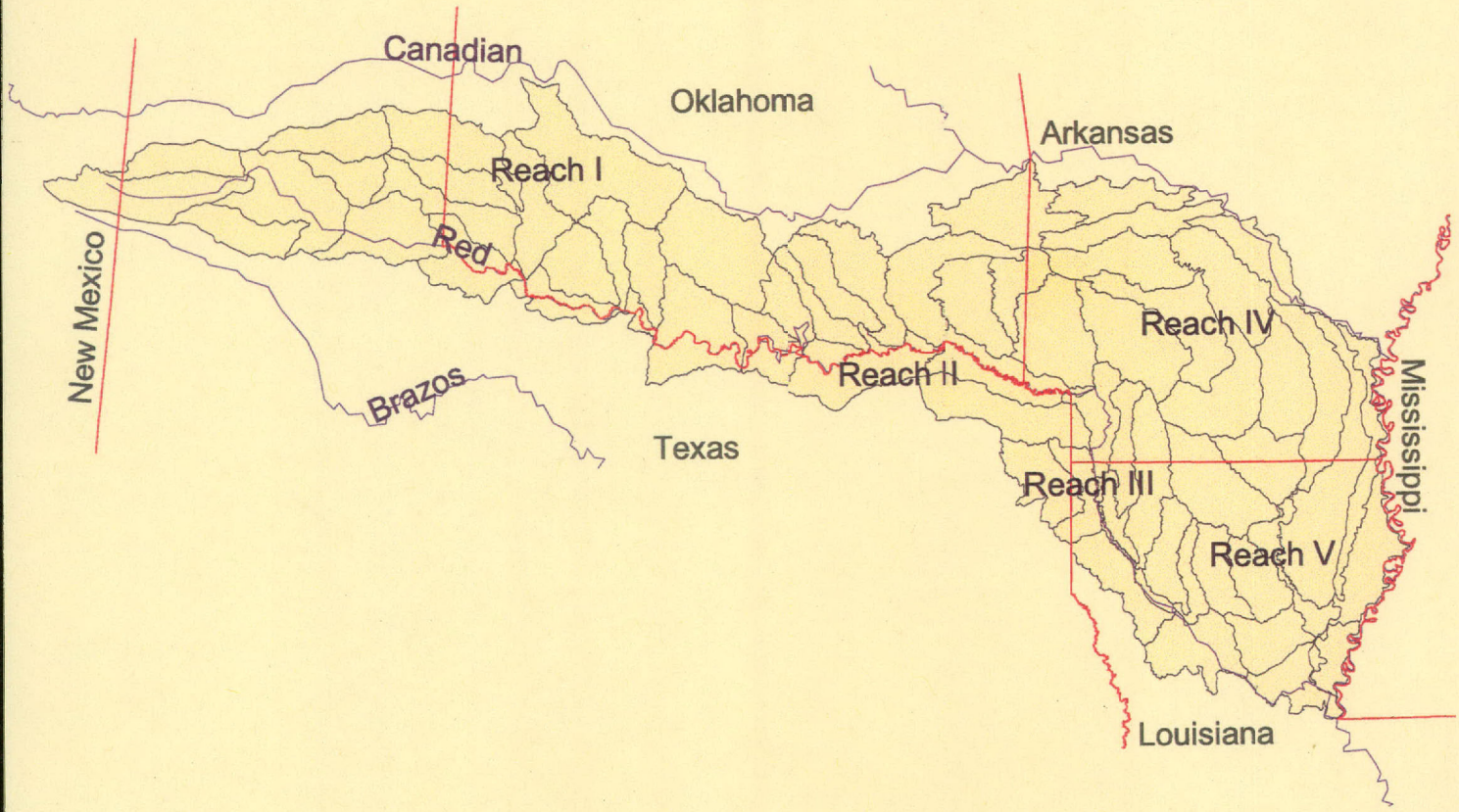
REPORT
Of The
RED RIVER
COMPACT COMMISSION
2000



Published
September, 2001

REPORT

OF THE

RED RIVER COMPACT COMMISSION 2000

Arkansas **Oklahoma**

Louisiana **Texas**

Published
September 2001

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Red River Compact Commission

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August 10, 2001

The President
United States of America

The Honorable Mike Huckabee, Governor
State of Arkansas

The Honorable M. J. "Mike" Foster, Jr., Governor
State of Louisiana

The Honorable Frank Keating, Governor
State of Oklahoma

The Honorable Rick Perry, Governor
State of Texas

Dear Mr. President and Governors:

The Red River Compact is an interstate agreement entered into by the States of Arkansas, Louisiana, Oklahoma, and Texas with the consent of Congress dealing with water of the Red River Basin. Pursuant to Section 10.02, paragraphs (d) and (e) of the Compact and as directed the Red River Compact Commission (RRCC), the interstate body overseeing the Compact, the Compact at its twentieth annual meeting submitted the report of the RRCC, including an accounting of all funds received and expended for FY 2000 and a budget covering the anticipated expenses of the Commission for fiscal years 2001-2003.

The twentieth annual meeting was hosted by the State of Texas on April 25, 2000, in Austin.

Pursuant to the previous agreement to rotate the office of Vice-Chairman and Secretary in connection with the rotation of the annual meeting host state, the State of Texas accepted the responsibility for both offices for FY 2000. The Office of Treasurer remained with the State of Arkansas.

Sincerely,

William A. Abney
Texas Commissioner

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Federal Commissioner and Chairman

(vacant)

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and COMMITTEE CHAIRMEN
2000

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Max Forbes
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(ADDRESS)
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State of Oklahoma has not designated a representative.

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RED RIVER COMPACT COMMISSION

Budget

(July 1, 2000 through June 30, 2002)

Approved: 4/25/00

	FY-2001	FY-2002
Personnel Services, Office Expenses, Rent, & Travel	$ 500.00	$ 500.00
Audit	250.00	250.00
Treasurer's Bond	125.00	125.00
Postage, Stationery, & Office Supplies	100.00	100.00
Printing & Reports	1,225.00	1,225.00
Contingency	0.00	0.00
TOTAL	$2,200.00	$2,200.00

STATE ASSESSMENTS

In accordance with Article IX, Section 9.04.C, of the Compact, the amount of such budget shall be borne equally by the signatory states in an equal amount. Therefore, the FY-2001 assessments are $550.00 per state and the FY-2002 assessments are $550.00 per state.

Red River Compact Commission
Statement of Cash Receipts
and Disbursements
July 1, 1999 through June 30, 2000

Timothy A. Bunch, CPA PA
Certified Public Accountants

P. O. Box 5665
Jacksonville, AR 72078

Phone (501) 982-1975

Fax (501) 982-8165

Red River Compact Commission
Little Rock, Arkansas

We have audited the accompanying statement of cash receipts and disbursements of the Red River Compact Commission for the period July 1, 1999 through June 30, 2000. The financial statement is the responsibility of the commission's management. Our responsibility is to express an opinion on this financial statement based on our audit.

We conducted our audit in accordance with generally accepted auditing standards for cash basis statements. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

The commission's policy is to prepare its financial statements on the basis of cash receipts and disbursements; consequently, certain revenue and related assets are recognized when received rather than when earned, and certain expenses are recognized when paid rather than when the obligation is incurred. Accordingly, the accompanying financial statement is not intended to present results of operations in conformity with generally accepted accounting principles.

In our opinion, the financial statement referred to above presents fairly, in all material respects, the recorded cash transactions of the Red River Compact Commission for the period ended June 30, 2000 on the basis of accounting described in the preceding paragraph.

Timothy A. Bunch, CPA PA

Timothy A. Bunch, CPA PA

August 28, 2000

Red River Compact Commission
Statements of Cash Receipts and Disbursements
For the Period July 1, 1999 through June 30, 2000

Cash Balance, Regions Bank, July 1, 1999	$	12569
Cash Receipts		
Member Assessments		1650
Interest Income		251
Total Cash Receipts	$	1901
Cash Disbursements		
Accounting		250
Conference		398
Postage & Shipping		96
Annual Report Printing		1367
Total Cash Disbursements	$	2111
Cash Balance, Regions Bank, June 30, 2000	$	12359

Minutes of the
RED RIVER COMPACT COMMISSION
Twentieth Annual Meeting

Omni Hotel
Austin, Texas
April 25, 2000

I. - II. CALL TO ORDER AND WELCOME

The Twentieth Annual Meeting of the Red River Compact Commission was called to order at 8:30 a.m. on April 25, 2000, at the Omni Hotel, Austin, Texas.

Representing the host State of Texas and in the absence of a Federal Commissioner and Chairman, Acting Chairman, Leigh Ing from the Texas Natural Resource Conservation Commission, called the meeting to order.

Texas Commissioner, Jeff Saitas, gave welcoming remarks. Commissioner Saitas stated that he was not able to stay for the entire meeting and appointed Leigh Ing as his representative.

Those present at the meeting were:

<u>Red River Compact Commissioners:</u>
Jeff Saitas, Texas Commissioner
Leigh Ing, Texas Acting Commissioner, representing Commissioner Jeff Saitas
Lowell Cable, Texas Commissioner
J. Randy Young, Arkansas Commissioner
Don Mitchell, Arkansas Commissioner
Curtis Patterson, Louisiana Acting Commissioner, representing Commissioner Kam K. Movassaghi
Arthur Theis, Louisiana Commissioner
Ken Fergeson, Oklahoma Commissioner, and also representing Commissioner Duane Smith, (Letter of Designation presented; see Attachment 1)
Col. William D. Brown, Mississippi Valley Division, U.S. Army Corps of Engineers, representing the Federal Chairman

<u>Representatives, Federal Agencies and Guests from Texas</u>
Herman Settemeyer, Texas Natural Resource Conservation Commission
Todd Chenoweth, Texas Natural Resource Conservation Commission

Grant J. Gibson, Texas Natural Resource Conservation Commission
Jeff Thomas, Texas Natural Resource Conservation Commission
Jane Atwood, Office of the Attorney General of Texas
Susan Worsham, Acting Secretary, Office of the Attorney General of Texas
Charles Armstrong, U.S. Army Corps of Engineers
Mick Baldys, U.S. Geological Survey

Representatives, Federal Agencies and Guests from Arkansas
A. Mark Bennett, III, Arkansas Soil and Water Conservation Commission
Laura Brown, Arkansas Soil and Water Conservation Commission
Ken Brazil, Arkansas Soil and Water Conservation Commission
Earl Smith, Arkansas Soil and Water Conservation Commission

Representatives, Federal Agencies and Guests from Louisiana
Curtis Patterson, Department of Transportation and Development
Gary C. Ethridge, Department of Transportation and Development

Representatives, Federal Agencies and Guests from Mississippi
T. Stephen Gambrell, U.S. Army Corps of Engineers

Representatives, Federal Agencies and Guests from Oklahoma
Dean Couch, Oklahoma Water Resources Board
Harold Springer, Oklahoma Water Resources Board
Robert Robbins, Lugert-Altus Irrigation District
James McLeod, Lugert-Altus Irrigation District
Harold D. Worrell, Lugert-Altus Irrigation District
Joe T. Kelly, Lugert-Altus Irrigation District
James R. Barnett, Lugert-Altus Irrigation District
Donna Kirby, Lugert-Altus Irrigation District
Phil Nelson, Lugert-Altus Irrigation District
Robert Blazs, U.S. Geological Survey
David Braddock, Oklahoma State Representative
Shirley J. Shadix, Bureau of Reclamation, Great Plains Region, Oklahoma-Texas Area Office

III. APPROVAL OF THE AGENDA

The agenda for the Red River Compact Commission 20th Annual Meeting was distributed and unanimously approved by the Commission. (Attachment 2.)

IV. APPROVAL OF THE MINUTES OF MAY 4, 1999

Acting Commissioner Ing stated that the draft minutes of the May 4, 1999, meeting were previously distributed. She asked if there were any additions or deletions to the minutes. The

minutes of the Red River Compact Commission 19th Annual Meeting were unanimously approved by the Commission. (Attachment 3.)

V. REPORT OF THE CHAIRMAN

There was no report by the Chairman.

VI. REPORT OF THE TREASURER

Earl Smith presented the Treasurer's report. The fiscal year 1999 financial report showed total cash receipts of $2,220 for member assessments for the four states and dividend income of $271.83, making the total cash receipts $2,471.83. An audit was conducted, which report was distributed. The meeting expenses for the 1999 meeting was $12.00, together with other expenses (annual audit and printing), made the total cash disbursements for 1999 $1,610.40. The cash balance for the Compact account for fiscal year 1999 is $861.53.

The interim year-end financial report from July 1, 1999, through April 1, 2000 showed member assessments in the amount of $1,550.00; dividend income of $207.84, for a total income of $1,847.84. The annual audit cost $250.00, plus postage of $95.88 for mailing the annual report for total expenses of $345.88. The balance as of April 1, 2000, is $1,511.96. (See Attachment 4.)

Upon motion duly made and seconded, the Commission unanimously approved the Treasurer's report.

VII. REPORT OF THE COMMISSIONERS

A. Arkansas. Commissioner Mitchell presented the Commissioner's report for Arkansas. There are presently two navigation feasibility studies underway in Arkansas, one is on the Red River, and the other on the White River. Arkansas is in the process of getting a state mitigation banking program up and running. Agreements are currently in place with the appropriate federal and state agencies and they are in the process of soliciting lands to serve as potential mitigation banking sites. Arkansas is presently working to establish minimum stream flows. There is some interest in Arkansas to develop municipal and industrial water supply in Union County, primarily for El Dorado. There is also a major diversion project planned on the White River to divert water to the Grand Prairie area in the Arkansas/Delta for agricultural water supply. There are some irrigation projects planned in the Compact area in Southwest Arkansas. That project is called the Walnut Bayou in Little River County, Arkansas. Also, a major feasibility study will begin this year for the Tensas Basin. It is envisioned that the Arkansas River would serve as a source of supply to provide supplemental surface irrigation water in and about the Tensas Basin. Arkansas' Nonpoint Source Pollution Program includes a number of projects. One of those projects is in the Compact area by Bayou Bartholomew. Finally, Union County has formed a countywide board assessing a fee for water drawn from the Sparta

formation. The money collected is to be available to the Union County Water Conservation Board to help finance a surface water treatment and distribution project to supplement groundwater use in the county. (See Attachment 5.)

B. Oklahoma. Commissioner Fergeson presented the Commissioner's report for Oklahoma. The southeast area of Oklahoma received less rain than normal and southwestern Oklahoma was received above normal rainfall this past year. The Mangum reservoir site in southwestern Oklahoma is in Phase III of a geotechnical study. There is also a study going on around the Lake Texoma area in south central Oklahoma to develop a regional sewer system. Oklahoma has done modeling and conducted hearings concerning several groundwater basins including the Post Oaks Minor Groundwater Basin in portions of Comanche County, Beaver Creek Alluvium, Cache Creek Alluvium and Terrace Groundwater in portions of Cotton, Comanche and Tillman Counties. The Legislature passed a bill (Oklahoma Weather Modification Program) last year which creates funding for hail damages and provides benefits to homeowners and the insurance industry. The Legislature asked for voluntary assistance from the insurance industry to help fund the program. Additional legislative activity was briefly discussed. (See Attachment 6.)

C. Louisiana. Acting Commissioner Patterson presented the Commissioner's report for Louisiana. The Red River Waterway was recently named the J. Bennet Johnston Waterway for that portion of Shreveport - Bossier City area down to the Old River area. The ports along this waterway continue to develop. About 98 million dollars of public funds have been spent on the three major ports in the Caddo - Bossier and Alexandria areas since about 1993 or 1994, plus about 15 million dollars of private funds. There is another port in the Coushatta area of the Red River Parish and negotiations are under way for the purchase of land in that area. Louisiana has developed a groundwater data bank. This was reported to the Compact before, but now the entire program is on the website. There are over 127,500 wells listed and all the technical data as well as a GIS Well Locator System. This information is updated monthly, near the middle of the month. Senate Bill 912 was reported to the Commission at the last meeting. This bill was passed by the Legislature which created a multiple parish Sparta Groundwater Conservation Commission in north central Louisiana and provided start-up funding of $250,000. The start-up funding is estimated to cover a two year period, primarily to develop a program for water conservation. The commissioners for the Sparta Groundwater Conservation Commission have been selected. Louisiana has contracted with the Corps of Engineers under Section 22 Planning Assistance to States to redo or update Louisiana's water plan. (See Attachment 7.)

D. Texas. Acting Commissioner Ing presented the Commissioner's report for Texas. There is a major initiative in Texas to develop new water availability models (WAMs) for all the river basins, except the Rio Grande. This should be completed by December 31, 2001. These models will allow the State to determine whether sufficient water is available for appropriation for new water rights and allow planners to determine the amount of water available for existing water rights and the percentage of time it is available. The WAMs will be incorporated into a regional water planning process. Additionally, Texas has been divided into water planning

regions. Each region will submit a plan based on the local water needs to the Texas Water Development Board. The Texas Water Development Board will approve and incorporate the regional plans into a State Water Plan. This should be completed around January 5, 2002. The plans will be updated every five years. The regional water planning group meetings are open to the public. Oklahoma has participated in some of the meetings and Arkansas and Louisiana are also invited to participate. Texas, like Oklahoma, is experiencing a drought. Texas is considering curtailing some of the water rights due to the drought conditions. The amount of water in conservation storage was at an all time low for January, February and March 2000. The United States has filed a quiet title lawsuit in federal court in Alburquerque concerning ownership of the waters of the Rio Grande from Elephant Butte Reservoir in New Mexico to Fort Quitman, Texas. The El Paso County Water Irrigation District filed a counterclaim against the United States and Texas has filed a motion to intervene. Mediation, although attempted, has not been successful. Finally, Texas received NPDES delegation this past year. (See Attachment 8.)

VIII. REPORT OF THE COMMITTEES

A. Budget Committee. Mr. Herman Settemeyer reviewed the proposed budget with the Commissioners. There were no changes in the proposed budget from the one offered last year. It was recommended that each state pay an assessment of $550 for FY 2001. Attached to the proposed budget is a memorandum from Earl Smith of Arkansas.

Upon motion duly made and seconded, the FY 2001 - 2002 Budget was unanimously accepted. (Attachment 9.)

B. Legal Committee. Ms. Jane Atwood presented the Legal Committee report. Last year the Commission asked the Legal Committee to propose two sets of accounting rules for Sweetwater Creek and the North Fork Red River and Reach I Subbasin I of the Red. The Legal Advisors from Texas and Oklahoma did not propose accounting rules because one of the gages used historically by Texas and Oklahoma is no longer a continuous flow gage and cannot be used in the way envisioned in previously proposed rules. The Legal Committee decided to propose a resolution to facilitate a compromise of this issue. The joint agreed resolution is attached to the Legal Committee report.

This issue has a long history. The North Fork Red River is the main water source to the Lugert-Altus Reservoir in Oklahoma. Sweetwater Creek is a tributary of the North Fork. These two streams meet some distance before the Reservoir. The provisions put into the Compact and the interpretations of those provisions as it relates to the North Fork Red River have been before this Commission many times as far as what those provisions actually mean and the delivery requirements for Texas and Oklahoma. The Legal Committee, in its report, has presented a history of the main legal issues that the Committee has been asked to brief over the years. The first being a legal interpretation of the Compact's position with regard to Reach I Subbasin I and the second concerns the number of votes of the Commission to pass these rules. There is also an issue of whether water rights that pre-date the signing of the Compact are superior to the

allocations made by the Compact. In 1987 rules were proposed by both states interpreting the issue of how to compute and enforce Compact compliance in Reach I Subbasin I. Those proposed rules are attached to the Legal Committee report. As mentioned previously, specific rules are not put before the Commission at this time because there is a problem with one of gages that is contained in those rules.

The resolution proposed by the Legal Committee (Attachment 1 to the Legal Committee Report) sets forth the Commission finding that the adoption of rules to compute and enforce compliance for the North Fork Red River and Sweetwater Creek requires eight votes. The proposed resolution also assigns the Legal Committee to facilitate a meeting with the local officials of Texas and Oklahoma to discuss a joint proposal on the delivery requirements for Sweetwater Creek and the North Fork Red River without taking further time of this Commission. A joint proposal shall then be presented to the Commission for adoption.

Upon motion duly made and seconded, the Legal Committee report was unanimously accepted. (See Attachment 10.)

C. **Engineering Committee.** Mr. Herman Settemeyer presented the Engineering Committee's written report. The Committee had received four assignments. The first assignment was monitoring proposed cutbacks in the critical USGS stream flow gages. While working on this assignment it was discovered that the stream flow gage North Fork Red River near Shamrock had been altered to a high flow reporting gage in 1998. The Committee will continue to monitor potential changes in the USGS program.

The second assignment was to develop rules for Reach 1, Subbasin I, Sweetwater Creek/North Fork Red River. Texas and Oklahoma in 1987 developed and proposed accounting rules supporting each states' position regarding apportionment of Sweetwater Creek/North Fork Red River. Despite numerous discussions over the years, both states continue to maintain their historical positions regarding apportionment of the waters of Sweetwater Creek/North Fork Red River. The Texas proposal used three stream flow gages, North Fork Red River near Shamrock, Texas, the Sweetwater Creek near Kelton, Texas and North Fork Red River near Carter, Oklahoma, to account for the flow of Sweetwater Creek/North Fork Red River. The Oklahoma proposal uses the same gages. The gage on the North Fork Red River near Shamrock has been altered (as discussed in Assignment 1 above) to a high flow reporting gage. The other two gages remain operational. In 1986, a gage on Sweetwater Creek near Sweetwater, Oklahoma was added and is operational. The Engineering Advisors believe an additional gage will need to be installed on North Fork Red River near the Texas-Oklahoma state line to assist in the accounting for this reach. It is not necessary at this time for the Compact to fund installation for such a gage. The Engineer Advisors recommend that they monitor any proposed development in Texas on Sweetwater Creek/North Ford Red River and propose installation of gages to assist in the accounting at the appropriate time.

The third assignment asked the Engineer Advisors to look into the establishment of a

website for the Red River Compact Commission. Oklahoma indicated they can incorporate such a website into the Oklahoma Water Resources Board's website at no cost to the Commission. A mock-up of the new website, which is ready for implementation, is attached to the Engineer Advisors Committee report. Mr. Settemeyer reported that Oklahoma has taken the initiative to develop the Red River Compact website. Mike Mathis indicated there would be no cost to the Commission to maintain the Compact website on the Oklahoma Water Resources Board's website. There was discussion concerning links to other websites, as well as what to put on the Compact's website.

A motion duly seconded and unanimously carried that the Commission's website continue to be improved and each state is to work with Oklahoma in the development of the Compact's website. An update concerning the Compact's website should be reported back to the Commission at the next meeting.

The 1998 Annual Report was published December 1999 and distributed. The Engineer Advisors propose to prepare the 1999 Annual Report and include information similar to the 1998 report. Work is underway on preparation of the 1999 Annual Report.

Attached to the Engineer Advisors Committee report is a letter from the U.S. Fish & Wildlife Service asking for public comment relating to the proposed designation listing the Arkansas River Shiner as a threatened species. The Commission determined that this did not impact any of the Red River area and, therefore, no action was recommended at this time. Upon motion duly made and seconded, the Engineer Advisors Committee report was unanimously adopted.

D. Environmental Committee. The Chairman stated that this committee is not active at this time. Following some discussion concerning TMDL and the 303 D List, the Commission decided to reactivate this committee. Commissioner Ing stated that Herman Settemeyer would be the Texas representative for this committee.

IX. DISCUSSION OF REACH I, SUBBASIN I

Representatives from the Lugert Altus Irrigation District commented on the Legal Committee report, specifically questioning the statement that the Shamrock gage does not measure continuous flow. The Lugert Altus representatives stated they wanted to attend the meetings of the Texas Regional Planning Group in their area and requested: 1) to be notified of such meetings; 2) that someone meet with them to discuss the future water plans; and 3) that they receive notice of future meetings with the agenda and other documentation relative to those meetings at least 30 days in advance.

Representative David Braddock, Oklahoma State Representative, addressed the Commission and conveyed Oklahoma's concern about water in Southwest Oklahoma, Western Oklahoma and Northern Texas.

Mr. Jim Barnett, on behalf of Lugert Altus Irrigation District commented that he agreed with the resolution proposed by the Legal Committee recommending that Texas and Oklahoma, with Lugert Altus, discuss and draft a joint proposal concerning delivery requirements for Sweetwater Creek and North Fork Red River, but requested that the Commission approve the resolution without the findings. Mr. Barnett also asked that the Commission consider a resolution concerning Section 2.07 of the Compact. Mr. Barnett recalled that the federal government insisted on Section 2.07 as a condition of it being an interstate compact because it was a clause that basically holds the federal government harmless and he believes that Section 2.07 clearly says that federal withdrawals are not subject to the provisions of the Compact. He further stated that if the Commission were to affirm that meaning of Section 2.07, it would go a long way towards resolving the controversy. He also recalled that last year a similar resolution failed by a 5 to 3 vote because it specifically mentioned Lugert Altus Irrigation District. He recommended that the district not be specifically named in such a resolution.

Commissioner Theis commented that there was quite a bit of discussion originally about whether the water would provide for things like navigation and that it was decided the Compact would not deter the federal government from taking action to utilize navigation water for compacts or whatever they require for a navigation project. With respect to the 60/40 split and the general arrangement on all the other subbasins, he recalls Chairman Nelson's comments about not storing water for the downstream states. That was when the 60/40 arrangement was made. It was only controlling the last downstream reservoir on the tributaries to the Red River and there was a lot of precedence then for this arrangement. The Compact Commissioners have consistently said that they want the two states, Texas and Oklahoma, to get together and work things out, then the Compact would adopt whatever arrangement was agreed to. Commissioner Theis stated that the Legal Committee proposed resolution should be adopted by the Compact Commissioners rather than signed by each individual state.

A Lugert Altus Irrigation District representative stated that he felt the Commission should not adopt the findings contained in the Legal Committee proposed resolution. Even with the proposed resolution, there would still be a disagreement about what constitutes a rule to compute and enforce compliance with regard to the 60/40 split. He further stated that he believes the finding in the resolution would cause future problems. However, he felt the other part of the proposed resolution would work and he looks forward to working with the officials involved in the planning.

Jane Atwood replied to the comments concerning the Legal Committee's proposed resolution and stated that the finding in the resolution specifically applied to this controversy; that the two states need to come to an agreement and put the states' agreement before the Commission for adoption.

Upon a motion duly made and seconded, the Commission unanimously approved the Legal Committee's resolution omitting the signature lines for all the Commissioners. (See Attachment 1 to the Legal Committee Report.)

Commissioner Fergeson asked that the Commission consider a motion concerning Section 2.07. Jane Atwood stated that it was Texas's position that any pre-existing rights are subject to the allocations made in the Compact. As to federal rights, those projects are dependant on state rights and cannot be built unless the state's water rights for that project are considered. Further, some of the comments by the Legal Advisory Committee support that position. If the motion was that Texas has no water rights in the North Fork and Sweetwater Creek because of the pre-existing federal project, then Texas will disagree with that motion. The Compact is very clear that water is apportioned to Texas. The implication of 4.05 of the Compact clearly indicates that Texas has some apportioned water rights in the North Fork. There was further discussion concerning Sections 2.01, 2.14, 2.07 and 2.02.

Commissioner Fergeson asked for a resolution to confirm and recognize Section 2.07. Chairman Ing questioned the reason behind affirming what is already part of the Compact. Commissioner Fergeson stated that it is to reaffirm that the Compact has no jurisdiction over federal rights and that the Compact would respect the rights of the federal government. Gary Ethridge commented that it was not appropriate for the Commission to take one article out of the Compact without taking into account all the other articles. He recommended that the Commission not adopt any kind of resolution regarding this one item.

Commissioner Fergeson moved that the Commission recognize and confirm that Section 2.07 of the Compact provides that nothing in the Compact shall be deemed to impair or effect the powers, rights, or obligations of the United States, or those claiming under its authority over and to the water of the Red River Basin. There was no second to this motion.

X. FEDERAL AGENCY REPORTS

Representatives of the federal agencies presented reports to the Commissioners. Copies of the written reports are attached to these Minutes (see Attachment 12). The Commissioners heard reports by Shirley Shadix, U.S. Bureau of Reclamation; Col. David Brown, U.S. Army Corps of Engineers, Mississippi Valley Division; John Armstrong, U.S. Army Corps of Engineers, Southwestern Division; and Robert Blazs, U.S. Geological Service, Oklahoma District.

XI. UNFINISHED BUSINESS

Chairman Ing asked for the annual report. It was moved that the assignments to the Engineering Committee be continued to prepare the next annual report for publishing. The motion was duly seconded and unanimously approved.

The material from Donna Kirby, Manager of Lugert Altus Irrigation District, regarding the history of the Sweetwater Creek/North Fork controversy was discussed. The District agreed to provide a copy of the materials to the Commission's Engineering Advisory Committee. The

Commission thanked Ms. Kirby for her efforts in compiling these documents. When the Engineering Committee receives the materials it will review them and make a recommendation to the Commission.

Acting Commissioner Patterson moved that Art Theis from Louisiana be elected as Vice Chair, Kimberly Holland from Louisiana be elected as Secretary, and Earl Smith from Arkansas be elected as Treasurer. The motion was duly seconded, and unanimously approved by the Commission.

Committee appointments were discussed with the determination that the appointments are historical and the Host State will chair each committee. The Environmental Committee was re-activated and the need for the states to appoint committee members was discussed.

There was a motion that the Commission authorize each state to caucus and nominate its member to the Environmental Committee and to notify the Chairman. The motion was duly seconded, and unanimously approved. There was discussion whether the Environmental Committee had any pending assignments. The Commission decided that the Committee would meet to discuss its scope.

Acting Commissioner Ing announced that it was potentially Lowell Cable's last meeting and she thanked him for all his hard work over the years. His replacement will be William A. (Bill) Abney, from Marshall, Texas. Mr. Abney should be taking the oath of office soon. Upon motion duly made and seconded, the Commissioners unanimously adopted a resolution expressing appreciation and thanks to Commissioner Cable for his service to the Commission.

The 21st annual meeting of the Commission will be hosted by Louisiana in New Orleans around the 3rd to last Tuesday of April, 2001. The motion was seconded and unanimously approved.

XII. OTHER BUSINESS

There was no other business.

XIII. PUBLIC COMMENT

There was no public comment.

XIV. ADJOURNMENT

There being no further business, Acting Commissioner Ing adjourned the meeting at approximately 11:30 a.m. on April 25, 2000.

DATED: April 12, 2001.

Susan Worsham
Office of the Attorney General of Texas
Acting Secretary

STREAMFLOW GAGE DATA
WATER YEAR OCTOBER 1999 through SEPTEMBER 2000

(as recommended for inclusion in the annual report by the Engineering Committee)

07337000 RED RIVER AT INDEX, AR

LOCATION.--Lat 33°33'07", long 94°02'28", in NW1/4SW1/4 sec.7, T.14 S., R.28 W., Miller County, Hydrologic Unit 11140106, near right bank on downstream side of southbound bridge on U.S. Highway 71 at Index, 2.2 mi south of Ogden, 20.6 mi upstream from Little River, and at mile 485.3.

DRAINAGE AREA.--48,030 mi^2, of which 5,936 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1936 to current year. Gage-height records collected at same site since 1917 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 246.87 ft above sea level. Prior to Dec 12, 1939, nonrecording gage, and Dec 12, 1939, to Jul 19, 1979, water-stage recorder, at site 500 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Water-discharge records good. Some regulation since Oct 31, 1943, by Lake Texoma (Texas), 241 mi upstream, capacity, 5,392,900 acre-ft, since Sep 28, 1967, by Pat Mayse Lake (Texas), capacity, 352,700 acre-ft, and since Jan 18, 1974, by Hugo Lake (Oklahoma) capacity, 966,700 acre-ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

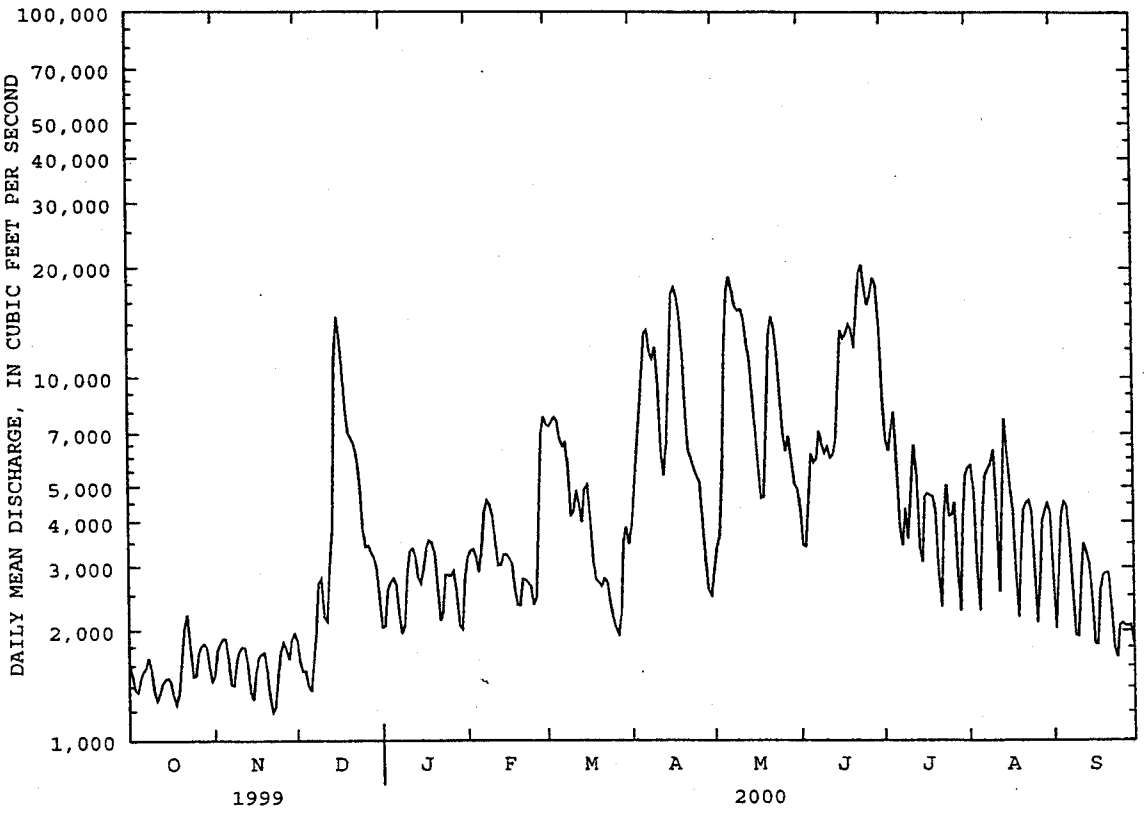
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1620	1500	1870	2040	3190	7410	3900	2900	4370	8740	5650	2870
2	1500	1760	1640	2060	3340	7310	5530	3410	3450	6690	5730	2020
3	1370	1840	1540	2580	3370	7530	7230	3660	3420	6270	4860	2830
4	1350	1900	1550	2720	3200	7770	8960	5460	4430	7240	3050	4180
5	1470	1890	1420	2790	2900	7560	11000	12100	6160	8040	2260	4540
6	1540	1660	1360	2670	3400	6780	13200	17300	5830	5630	4020	4430
7	1580	1420	1620	2220	4260	6460	13500	18900	5980	3890	5350	3630
8	1680	1410	1960	1960	4580	6620	11700	17300	7130	3440	5590	2620
9	1560	1640	2700	2070	4440	5520	11200	15600	6530	4360	5770	1940
10	1360	1750	2790	2830	4100	4170	12100	15200	6170	3590	6310	1930
11	1280	1800	2170	3320	3530	4270	9620	15400	6440	4610	4540	2750
12	1340	1790	2110	3380	3020	4900	6220	14500	6000	6520	2550	3500
13	1430	1610	3010	3230	3030	4470	5360	12400	6130	5390	4980	3310
14	1470	1350	3850	2800	3250	3980	6540	11200	6680	3400	7720	3060
15	1480	1290	11200	2690	3260	4920	11100	9390	9400	3100	6290	2480
16	1440	1530	14700	2950	3180	5060	16900	7600	13500	4700	4990	1840
17	1320	1680	12800	3390	3050	4020	17600	5980	12800	4790	4300	1830
18	1250	1720	10300	3560	2600	3070	16600	4640	13200	4730	2870	2590
19	1340	1740	8000	3520	2350	2760	14600	4670	14000	4710	2170	2830
20	1610	1570	7010	3290	2340	2710	11600	7850	13500	4270	3290	2890
21	2010	1320	6780	2650	2770	2640	7820	13000	12000	2890	4320	2890
22	2210	1190	6530	2120	2760	2780	6270	14700	15800	2320	4510	2380
23	1830	1230	5920	2260	2700	2710	5940	13600	19400	4170	4590	1790
24	1490	1510	5050	2850	2640	2380	5600	11500	20400	5080	4270	1680
25	1500	1740	3820	2840	2350	2170	5340	9140	17700	4150	2900	2070
26	1730	1850	3410	2830	2470	2030	5130	7000	15800	4190	2100	2100
27	1810	1780	3450	2920	3770	1950	4110	6250	16700	4530	2750	2060
28	1840	1660	3290	2560	6960	2220	3150	6900	18800	2960	4030	2060
29	1790	1890	3180	2060	7790	3530	2580	5900	17800	2260	4300	2080
30	1590	1960	2950	2010	---	3880	2490	5080	13800	4050	4500	1840
31	1450	---	2440	2790	---	3470	---	4920	---	5380	4210	---
TOTAL	48240	48980	140420	83960	100600	137050	262890	303450	323320	146090	134770	79020
MEAN	1556	1633	4530	2708	3469	4421	8763	9789	10780	4713	4347	2634
MAX	2210	1960	14700	3560	7790	7770	17600	18900	20400	8740	7720	4540
MIN	1250	1190	1360	1960	2340	1950	2490	2900	3420	2260	2100	1680
AC-FT	95680	97150	278500	166500	199500	271800	521400	601900	641300	289800	267300	156700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2000, BY WATER YEAR (WY)

MEAN	8182	10650	11900	11100	13840	16780	17240	23980	22110	9819	5808	5947
MAX	41690	47140	47910	60160	38960	67730	61460	121000	94400	33990	39230	30340
(WY)	1946	1975	1992	1998	1946	1945	1990	1990	1957	1989	1950	1950
MIN	716	642	1206	1360	2127	2233	2096	4199	3098	1162	1025	909
(WY)	1957	1957	1957	1964	1964	1967	1956	1972	1988	1944	1944	1944

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1944 - 2000	
ANNUAL TOTAL	3133990		1808790			
ANNUAL MEAN	8586		4942		a13100	
HIGHEST ANNUAL MEAN					30420	1990
LOWEST ANNUAL MEAN					4383	1964
HIGHEST DAILY MEAN	39500	May 14	20400	Jun 24	268000	May 10 1990
LOWEST DAILY MEAN	1190	Nov 22	1190	Nov 22	384	Nov 28 1956
ANNUAL SEVEN-DAY MINIMUM	1390	Oct 12	1390	Oct 12	397	Oct 19 1956
INSTANTANEOUS PEAK FLOW			21100	Jun 24	b270000	May 10 1990
INSTANTANEOUS PEAK STAGE			7.30	Jun 24	32.30	May 10 1990
INSTANTANEOUS LOW FLOW			1140	Nov 23	378	Nov 28 1956
ANNUAL RUNOFF (AC-FT)	6216000		3588000		9489000	
10 PERCENT EXCEEDS	21400		11800		35100	
50 PERCENT EXCEEDS	5380		3400		5900	
90 PERCENT EXCEEDS	1580		1600		2290	

a Prior to regulation, water years 1937-43, 11,970 ft^3/s.
b. Maximum discharge for period of record


DAILY MEAN DISCHARGE, IN CUBIC FEET PER SECOND
100,000
70,000
50,000
40,000
30,000
20,000
10,000
7,000
5,000
4,000
3,000
2,000
1,000
O
N
D
J
F
M
A
M
J
J
A
S
1999
2000

07340000 LITTLE RIVER NEAR HORATIO

LOCATION.--Lat 33°55'10", long 94°23'15", in NE1/4 sec.10, T.10 S., R.32 W., Sevier County, Hydrologic Unit 11140109, near left bank on downstream side of bridge on State Highway 41, 0.9 mi downstream from Rolling Fork, 2.0 mi southwest of Horatio, 28.5 mi upstream from Cossatot River, and at mile 72.0.

DRAINAGE AREA.--2,662 mi².

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 858: 1932, 1935-36. WSP 1211: 1931, drainage area. WSP 1561: 1932. WRD Ark. 1978: drainage area.

GAGE.--Water-stage recorder. Datum of gage is 272.89 ft above sea level. Prior to Feb. 5, 1935, nonrecording gage, and Feb. 5, 1934, to Sept. 13, 1961, water-stage recorder, at site 50 ft upstream at present datum.

REMARKS.--No estimated daily discharges. Records good. Some regulation since Oct. 3, 1968, by Broken Bow Lake (Oklahoma), 31.4 mi upstream, capacity, 1,368,000 acre-ft, and since June 1, 1969, by Pine Creek Lake (Oklahoma), 73.3 mi upstream, capacity, 465,800 acre-ft. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in August 1915, reached a stage of 38.0 ft, discharge, 124,000 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	276	204	254	493	354	3200	3320	1370	5610	7950	813	2000
2	366	201	272	405	823	2930	3130	2190	5940	4720	811	1880
3	391	199	463	339	1530	3100	3160	3620	4730	5320	882	1240
4	256	199	545	292	1900	3360	4670	5080	1630	5980	843	1250
5	271	197	449	309	2680	2800	4650	5880	2510	5410	819	1330
6	230	195	376	308	2130	2380	3480	9280	5500	5730	813	1460
7	245	195	594	307	1840	2180	3770	9620	5760	3220	810	1670
8	237	197	384	354	1920	2060	2500	6920	5730	2760	1000	1550
9	254	417	585	759	2090	2230	927	5880	5650	1740	1110	1150
10	408	236	543	994	2250	2470	502	4940	5540	1180	1240	1040
11	250	202	450	987	1810	2800	671	4460	3900	2360	1140	1030
12	252	197	1160	1200	1670	2070	3480	4690	6340	2650	802	1690
13	347	197	5550	1200	1080	1930	4500	3750	8100	2080	706	1780
14	250	195	5350	1140	815	2280	4610	1680	7490	2230	687	1640
15	201	197	2830	945	1300	2040	3660	957	9380	2220	685	1070
16	224	196	3170	748	1690	2750	2670	861	11700	1220	1070	786
17	216	195	3560	675	1320	2320	2300	1060	10200	859	1280	748
18	198	195	4860	694	1120	2290	2460	1390	11700	1920	1440	844
19	197	246	3700	670	761	2510	3600	5910	14500	2660	915	727
20	195	318	2950	671	495	2470	3320	9270	11400	1170	724	1260
21	194	246	2840	768	495	2360	2300	5320	12400	898	686	1220
22	194	209	2580	542	443	1960	981	5240	18100	1170	667	802
23	192	231	1460	394	431	1430	566	6130	18100	1040	686	1050
24	193	395	829	294	440	802	1410	5150	14400	1010	930	1250
25	192	313	619	329	575	691	1480	4290	13900	920	730	840
26	191	267	488	264	4310	1380	1300	2720	11900	857	688	573
27	191	252	396	346	8360	2190	1520	2410	11700	847	675	737
28	235	242	438	370	4660	3760	2070	2210	12800	827	669	574
29	235	211	339	356	3270	4770	1370	2430	13400	829	1070	525
30	198	210	383	323	---	5300	1370	2260	12900	831	1810	618
31	209	---	570	325	---	4970	---	3580	---	825	1010	---
TOTAL	7488	6954	48987	17801	52562	79783	75747	130548	282910	73433	28211	34334
MEAN	242	232	1580	574	1812	2574	2525	4211	9430	2369	910	1144
MAX	408	417	5550	1200	8360	5300	4670	9620	18100	7950	1810	2000
MIN	191	195	254	264	354	691	502	861	1630	825	667	525
AC-FT	14850	13790	97170	35310	104300	158200	150200	258900	561200	145700	55960	68100

07340000 LITTLE RIVER NEAR HORATIO--CONTINUED

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 2000, BY WATER YEAR (WY)

MEAN	2174	4390	6320	4760	5570	6719	5537	6199	4301	1740	1151	1472
MAX	9360	15960	17120	15890	12390	15020	16250	16790	14180	8397	3542	10430
(WY)	1985	1975	1972	1998	1989	1997	1973	1990	1990	1983	1992	1974
MIN	242	232	244	493	669	665	1449	530	346	281	411	303
(WY)	2000	2000	1990	1981	1996	1996	1981	1988	1988	1972	1977	1977

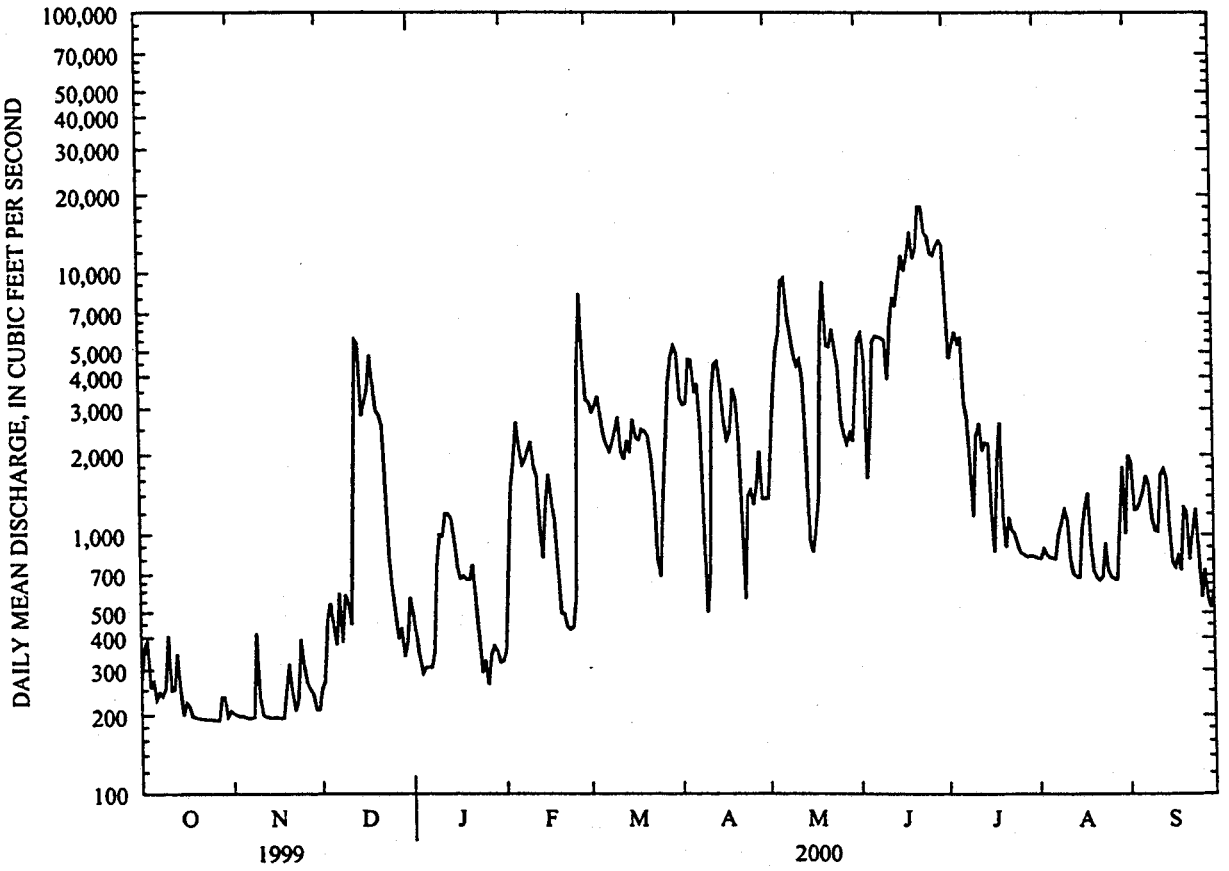
SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1969 - 2000	
ANNUAL TOTAL	1144973		838758			
ANNUAL MEAN	3137		2292		[a]4187	
HIGHEST ANNUAL MEAN					7523	1973
LOWEST ANNUAL MEAN					1547	1976
HIGHEST DAILY MEAN	15000	May 14	18100	Jun 22	57700	Dec 12 1971
LOWEST DAILY MEAN	191	Oct 26	191	Oct 26	[b]121	Oct 5 1972
ANNUAL SEVEN-DAY MINIMUM	192	Oct 21	192	Oct 21	152	Oct 4 1972
INSTANTANEOUS PEAK FLOW			19900	Jun 22	[c]65100	Dec 10 1971
INSTANTANEOUS PEAK STAGE			22.55	Jun 22	[d]32.84	Dec 10 1971
ANNUAL RUNOFF (AC-FT)	2271000		1664000		3033000	
10 PERCENT EXCEEDS	9180		5570		12400	
50 PERCENT EXCEEDS	1670		1140		1820	
90 PERCENT EXCEEDS	233		234		357	

[a]Prior to regulation, water years 1931-68, 3,742 ft^3/s

[b]Minimum discharge for period of record, 1.0 ft^3/s Aug. 18 to Sept. 1, 1934

[c]Maximum discharge for period of record, 120,000 ft^3/s, Mar. 30, 1945, from rating curve extended above 93,000 ft^3/s

[d]Maximum gage height for period of record, 37.70 ft Mar. 30, 1945



07362000 OUACHITA RIVER AT CAMDEN

LOCATION.--Lat 33°35'47", long 92°49'05", in SE1/4 sec.14, T.13 S., R.17 W., Ouachita County, Hydrologic Unit 08040102, at bridge on U.S. Highway 79B at Camden, 3.4 mi downstream from Ecore Fabre Bayou, 6.2 mi upstream from Two Bayou Creek, and at mile 354.1.

DRAINAGE AREA.--5,357 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1928 to September 1960 and October 1965 to current year in reports of Geological Survey. October 1929 to date in reports of U.S. Army Corps of Engineers. Monthly discharge only, October 1929 to September 1960 published in WSP 1311 and WSP 1731. Gage heights collected since 1885 in this vicinity are contained in reports of National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 71.69 ft above sea level. Aug. 8, 1928, to July 10, 1935, and July 11, 1935, to Jan. 4, 1945, nonrecording gage at present site and datum. Jan. 5, 1945, to Oct. 27, 1947, nonrecording gage at site 0.4 mi downstream at present datum. Aug. 10, 1938, to May 31, 1949, supplementary nonrecording gage, 4.5 mi upstream. Since Jan. 1, 1957, auxiliary water-stage recorder, 3.2 mi downstream.

REMARKS.--Water-discharge records good except estimated daily discharges, which are poor. Flow regulated since 1925 by Lake Catherine, 102 mi upstream, capacity, 35,250 acre-ft, since 1932 by Lake Hamilton, capacity, 190,100 acre-ft, since 1949 by Lake Greeson, capacity, 407,900 acre-ft, since 1952 by Lake Ouachita, capacity, 2,768,400 acre-ft, and since August 1969 by DeGray Lake, capacity, 881,900 acre-ft. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1050	911	957	988	1030	3320	4440	1350	5300	14200	1160	e4300
2	980	2500	1010	1160	1060	2990	4830	1160	3190	11300	e2200	e4100
3	989	2910	1190	1010	1070	3230	7150	1070	2280	10100	e3300	e2800
4	954	2690	962	911	1020	2920	10200	1270	1880	9620	e3400	1330
5	946	2910	985	912	1390	2770	9890	2700	2310	9530	e3400	1200
6	1160	2370	1010	2320	1540	2420	7970	5630	4890	8170	e3200	1210
7	1010	2120	1020	2670	1800	2050	5550	10700	6210	6850	1850	1490
8	1020	1590	1190	2740	1700	1790	3820	12500	5670	5780	1690	1500
9	1040	942	1010	2450	1800	1710	3250	11300	4980	5720	3150	e1590
10	1770	1320	1060	2240	1650	1650	3420	7610	3300	5200	4050	1290
11	1560	1420	918	2270	2050	2130	2390	5190	3190	4400	3840	1060
12	925	887	1090	1910	1360	1880	2330	3200	3610	4660	3590	1080
13	1700	920	2560	1040	1220	2760	6830	2590	2450	5000	e3200	1550
14	1260	917	7350	974	1110	3340	7050	3460	2010	4700	e1800	1750
15	1260	924	5810	980	1090	2930	7250	3600	3610	4080	e2000	1880
16	941	923	3760	1130	1220	2950	5670	2220	14000	3720	e3000	1540
17	853	932	4590	971	1040	5910	4950	1820	20200	3860	e4200	1590
18	882	938	4500	867	1040	6190	4190	1460	21800	3520	e4500	1440
19	869	996	3980	921	1040	5150	3330	1950	21700	4330	e4900	1240
20	859	1030	3960	912	1100	7360	3610	10100	19500	4280	e3500	1400
21	890	996	3730	1070	1060	8100	2760	15000	19600	4170	e2400	1290
22	897	966	3630	1420	1110	5340	2340	17600	21200	4600	e1900	1190
23	1060	935	3170	1140	1250	4370	1720	16500	22700	4180	e3700	1140
24	887	902	3020	1240	1050	3080	1490	12700	25000	2480	e4700	1040
25	866	925	2220	997	1060	2420	2500	8450	25700	1280	e3900	1270
26	856	923	1640	932	1190	2200	2690	6830	24800	2570	e3000	1480
27	939	930	1450	1160	1820	3590	1780	4660	21300	3430	e2500	1050
28	921	933	1750	1390	6970	5910	1570	3400	15900	3450	e2000	1210
29	815	927	1620	1540	5700	6830	1680	7270	14000	3820	e2500	1180
30	877	935	2100	1550	---	5700	1370	9370	15000	3810	e2800	992
31	939	---	1510	1100	---	5050	---	7170	---	1940	e3500	---
TOTAL	31975	39522	74752	42915	47540	118040	128020	199830	357280	164750	94830	47182
MEAN	1031	1317	2411	1384	1639	3808	4267	6446	11910	5315	3059	1573
MAX	1770	2910	7350	2740	6970	8100	10200	17600	25700	14200	4900	4300
MIN	815	887	918	867	1020	1650	1370	1070	1880	1280	1160	992
AC-FT	63420	78390	148300	85120	94300	234100	253900	396400	708700	326800	188100	93590

07362000 OUACHITA RIVER AT CAMDEN--CONTINUED

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1929 - 2000, BY WATER YEAR (WY)

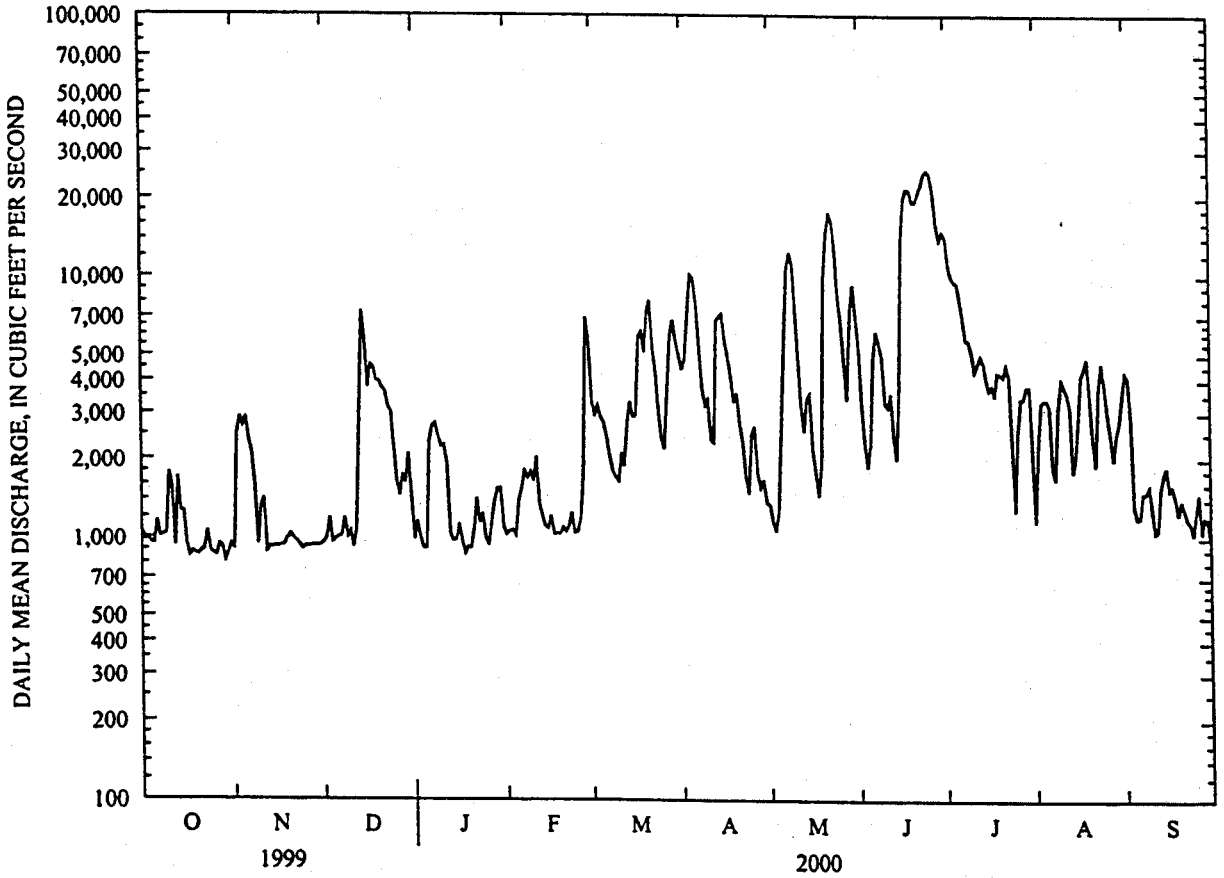
MEAN	2475	5229	9320	12160	12260	12790	13000	12520	5240	2866	1989	2241
MAX	18200	25370	41930	46610	40110	45110	48110	52200	31090	13640	7469	19410
(WY)	1985	1973	1983	1937	1950	1945	1945	1968	1974	1989	1966	1974
MIN	291	381	740	686	1542	1742	1578	1674	411	260	176	154
(WY)	1933	1933	1940	1940	1936	1954	1930	1932	1936	1930	1930	1943

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1929 - 2000	
ANNUAL TOTAL	2529579		1346636			
ANNUAL MEAN	6930		3679		7653	
HIGHEST ANNUAL MEAN					16120	1973
LOWEST ANNUAL MEAN					2292	1936
HIGHEST DAILY MEAN	50100	Mar 17	25700	Jun 25	238000	Apr 3 1945
LOWEST DAILY MEAN	815	Oct 29	815	Oct 29	125	Sep 16 1943
ANNUAL SEVEN-DAY MINIMUM	880	Oct 24	880	Oct 24	132	Sep 11 1943
INSTANTANEOUS PEAK FLOW			26100	Jun 25	243000	Apr 3 1945
INSTANTANEOUS PEAK STAGE			26.81	Jun 25,26	44.82	Apr 3 1945
INSTANTANEOUS LOW FLOW			765	Oct 29	125	[a]Sep 16 1943
ANNUAL RUNOFF (AC-FT)	5017000		2671000		5544000	
10 PERCENT EXCEEDS	19300		7440		19200	
50 PERCENT EXCEEDS	3160		2160		3420	
90 PERCENT EXCEEDS	956		939		780	

e Estimated

[a]Also September 24-26, 1943

[e]Estimated



07362100 SMACKOVER CREEK NEAR SMACKOVER

LOCATION.--Lat 33°22'33", long 92°46'37", in NW1/4SE1/4 sec.32, T.15 S., R.16 W., Union County, Hydrologic Unit 08040201, near right bank on downstream side of bridge on State Highway 7, 0.1 mi downstream from Camp Creek, 3.3 mi northwest of Smackover, and at mile 22.0.

DRAINAGE AREA.--385 mi^2.

PERIOD OF RECORD.--October 1961 to current year. Gage-height records collected and occasional discharge measurements made by U.S. Army Corps of Engineers at this site since September 1938. Daily stages 1940 to date and results of discharge measurements 1947 to 1960 are published in reports of U.S. Army Corps of Engineers.

REVISED RECORDS.--WRD Ark. 1967: 1965. WRD Ark. 1979: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 97.56 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Mar. 1, 1989, water-stage recorder at site 100 ft downstream at same datum. Mar. 1, 1989 to Sept. 4, 1991, non-recording gage at same site and datum.

REMARKS.--No estimated daily discharges. Records good.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1938, that of June 8, 1974.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUE

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.6	16	31	27	72	186	750	56	71	159	1.9	.00
2	1.6	14	30	28	83	118	2050	49	55	103	2.1	.00
3	1.6	12	35	28	91	101	2470	47	46	75	1.4	.00
4	1.5	10	44	30	107	110	2620	116	48	56	.79	.00
5	1.6	14	59	33	112	114	2160	501	227	41	.50	.00
6	1.6	16	53	32	104	106	1490	1350	300	31	.22	.00
7	1.6	16	43	29	91	85	946	1940	242	25	.04	.00
8	1.7	17	28	39	77	70	484	1950	144	19	.00	.00
9	13	19	20	55	66	63	379	1550	91	15	.00	.00
10	16	20	18	64	59	62	272	1220	67	13	.00	.00
11	11	21	17	64	55	160	199	567	57	10	.00	.00
12	11	21	28	56	53	204	196	234	53	8.7	.00	.00
13	11	23	106	48	48	168	264	405	50	8.6	.00	.00
14	8.2	24	127	42	45	126	309	721	45	14	.00	.00
15	6.7	24	98	37	43	98	275	781	40	22	.00	.00
16	6.1	25	74	34	40	321	219	712	99	18	.00	.00
17	5.9	25	54	32	39	658	179	316	308	11	.00	.00
18	6.0	25	45	32	40	652	145	170	435	9.5	.00	.00
19	6.3	27	39	32	49	682	121	465	566	7.0	.00	.00
20	6.1	32	35	33	50	680	103	1510	602	5.1	.00	.00
21	6.3	33	33	31	47	491	87	2270	594	3.8	.00	.00
22	6.7	32	31	30	49	335	73	2300	437	2.9	.00	.00
23	7.8	32	29	31	46	202	65	1700	278	2.6	.00	.00
24	8.8	34	28	29	47	151	163	1180	267	2.1	.00	1.6
25	8.3	34	27	28	40	142	303	483	173	1.7	.00	12
26	7.9	34	27	29	156	224	166	184	100	1.2	.00	8.7
27	8.7	34	26	32	405	414	101	134	70	1.1	.00	4.2
28	9.5	33	26	41	373	581	83	112	121	.88	.00	5.6
29	10	35	27	52	321	607	72	107	225	.68	.00	4.2
30	11	35	27	58	---	889	66	114	191	1.1	.00	2.3
31	12	---	27	66	---	931	---	94	---	3.1	.00	---
TOTAL	217.1	737	1292	1202	2808	9731	16810	23338	6002	672.06	6.95	38.60
MEAN	7.00	24.6	41.7	38.8	96.8	314	560	753	200	21.7	.22	1.29
MAX	16	35	127	66	405	931	2620	2300	602	159	2.1	12
MIN	1.5	10	17	27	39	62	65	47	40	.68	.00	.00
AC-FT	431	1460	2560	2380	5570	19300	33340	46290	11900	1330	14	77
CFSM	.02	.06	.11	.10	.25	.82	1.46	1.96	.52	.06	.00	.00
IN.	.02	.07	.12	.12	.27	.94	1.62	2.25	.58	.06	.00	.00

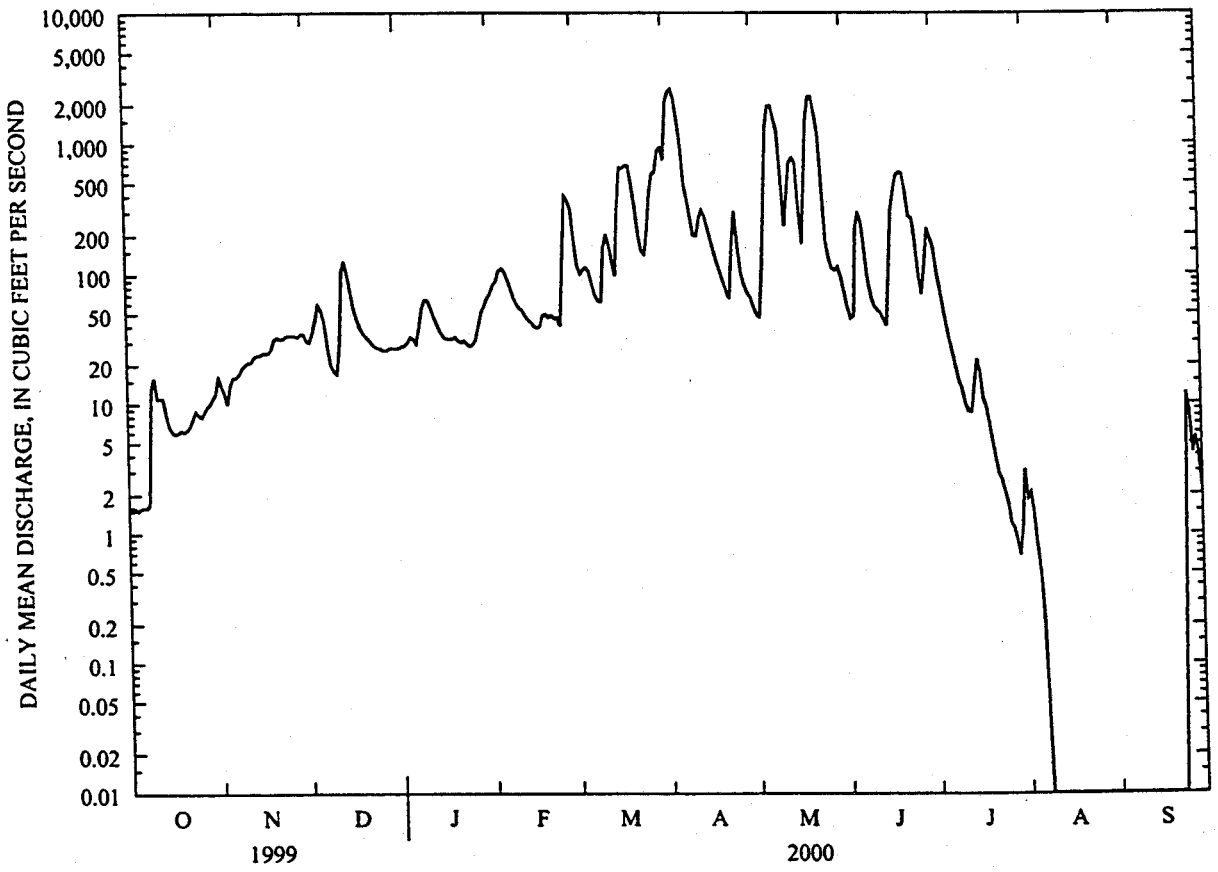
07362100 SMACKOVER CREEK NEAR SMACKOVER--CONTINUED

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

MEAN	116	243	556	649	802	812	753	499	406	128	51.1	93.7
MAX	1784	1143	1998	1980	2366	2467	4078	1701	2864	1949	346	2174
(WY)	1985	1975	1983	1962	1990	1990	1991	1966	1974	1989	1971	1974
MIN	1.51	3.66	33.5	38.8	44.6	112	90.6	33.6	8.91	1.81	.22	1.29
(WY)	1996	1996	1982	2000	1996	1967	1971	1996	1972	1964	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	135793.9		62854.71			
ANNUAL MEAN	372		172		424	
HIGHEST ANNUAL MEAN					1074	1974
LOWEST ANNUAL MEAN					94.4	1963
HIGHEST DAILY MEAN	11200	Jan 31	2620	Apr 4	35300	Apr 6 1997
LOWEST DAILY MEAN	1.5	Oct 4	.00	Aug 8	.00	Aug 24 1978
ANNUAL SEVEN-DAY MINIMUM	1.6	Oct 1	.00	Aug 8	.00	Aug 8 2000
INSTANTANEOUS PEAK FLOW			2680	Apr 4	[a]52700	Jun 8 1974
INSTANTANEOUS PEAK STAGE			13.84	Apr 4	24.97	Jun 8 1974
INSTANTANEOUS LOW FLOW			.00	at times	.00	at times
ANNUAL RUNOFF (AC-FT)	269300		124700		306800	
ANNUAL RUNOFF (CFSM)	.97		.45		1.10	
ANNUAL RUNOFF (INCHES)	13.12		6.07		14.95	
10 PERCENT EXCEEDS	791		470		1200	
50 PERCENT EXCEEDS	46		34		93	
90 PERCENT EXCEEDS	3.1		.00		5.9	

[a]From rating curve extended above 31,000 ft^3/s



07363500 SALINE RIVER NEAR RYE

LOCATION.--Lat 33°42'03", long 92°01'33", in SW1/4NW1/4 sec.3, T.12 S., R.9 W., Bradley County, Hydrologic Unit 08040204, near left bank on downstream side of bridge on State Highway 15, 3.6 mi southwest of Rye, 5.8 mi upstream from Hudgin Creek, and at mile 71.0.

DRAINAGE AREA.--2,102 mi².

PERIOD OF RECORD.--August 1937 to current year.

REVISED RECORDS.--WRD Ark. 1979: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 97.06 ft above sea level. Prior to May 30, 1939, nonrecording gage at present site and datum.

REMARKS.--No estimated daily dischargesRecords good. Satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of April 1927 reached a stage of 30.5 ft, discharge, about 73,000 ft³/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

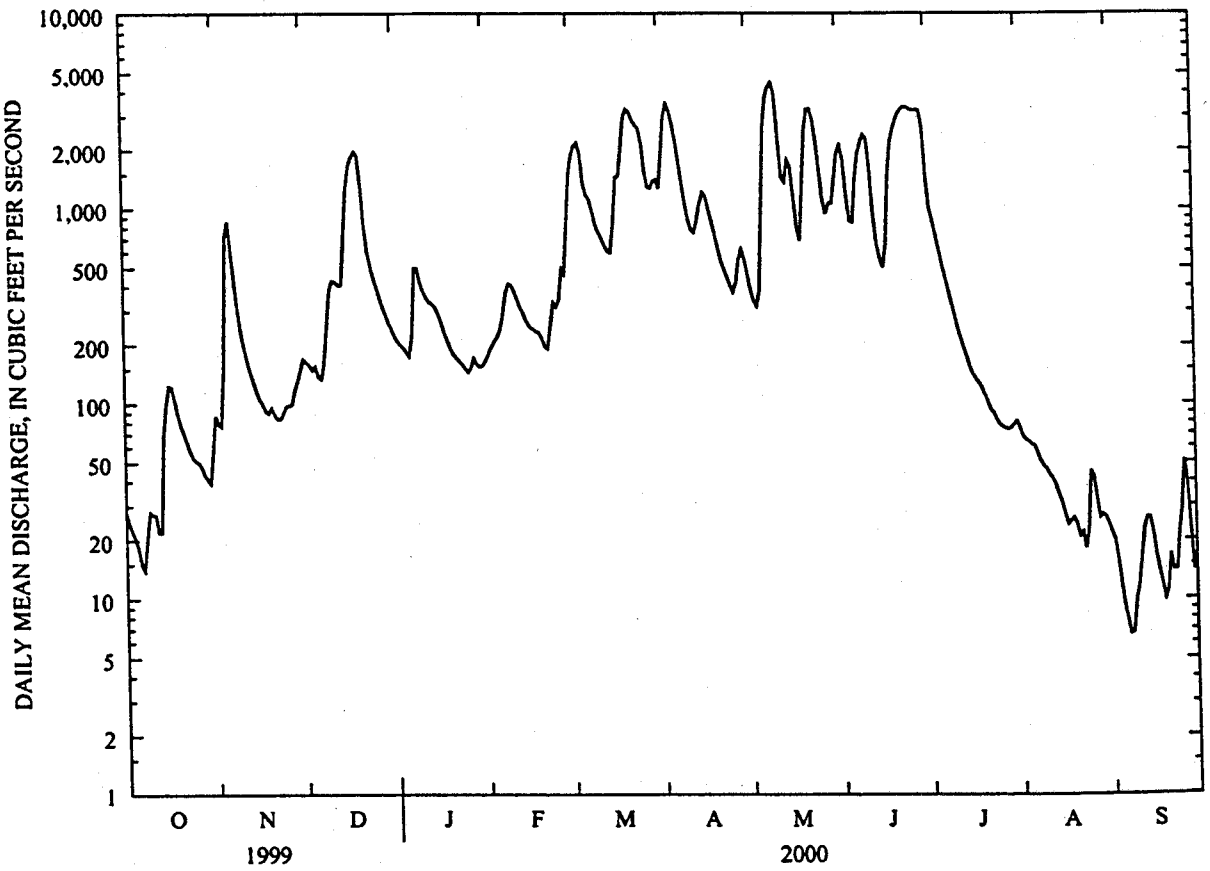
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	87	170	225	168	1500	1270	453	1940	1510	75	22
2	24	79	164	210	180	1860	1980	381	2120	1010	68	20
3	22	77	158	201	197	2100	3000	339	1800	876	65	16
4	20	150	149	194	211	2210	3500	317	1180	749	64	12
5	18	722	156	184	221	1940	3210	381	869	631	62	9.2
6	15	865	138	175	241	1380	2770	1170	851	531	61	7.8
7	14	612	134	222	291	1180	2270	2640	1430	453	56	6.6
8	20	418	164	500	371	1120	1790	3760	1910	389	51	6.7
9	28	308	245	499	415	979	1380	4260	2200	336	48	10
10	27	240	383	425	407	838	1080	4510	2400	292	46	12
11	27	197	430	381	376	764	891	3920	2290	253	43	17
12	22	169	425	354	342	715	785	2510	1570	219	41	23
13	22	148	407	335	312	653	758	1460	932	195	38	26
14	68	132	407	327	289	608	872	1370	668	175	34	26
15	98	118	753	316	266	596	1060	1780	559	155	31	22
16	123	107	1300	292	249	827	1210	1640	503	142	27	17
17	122	100	1650	265	243	1450	1160	1130	664	133	24	14
18	104	93	1850	235	235	1470	1000	803	1480	127	25	12
19	89	90	1980	214	233	2080	856	687	2190	120	26	10
20	78	96	1880	195	218	2980	735	1210	2560	110	24	11
21	71	89	1310	180	198	3260	632	2510	2860	102	21	17
22	64	84	812	172	191	3140	548	3240	3100	93	22	14
23	57	84	605	166	254	2850	491	3270	3260	90	18	14
24	53	90	508	160	331	2700	451	2870	3340	83	23	22
25	51	97	442	152	314	2600	407	2210	3320	78	45	29
26	50	98	391	145	341	2170	376	1580	3240	76	42	51
27	47	100	348	153	495	1550	421	1110	3200	75	32	40
28	43	117	312	171	464	1300	547	940	3220	74	26	23
29	41	131	288	160	848	1280	622	1070	3210	75	27	14
30	39	149	261	155	---	1390	546	1070	2640	78	26	17
31	59	---	243	157	---	1420	---	1440	---	81	24	---
TOTAL	1543	5847	18463	7520	8901	50910	36618	56031	61506	9311	1215	541.3
MEAN	49.8	195	596	243	307	1642	1221	1807	2050	300	39.2	18.0
MAX	123	865	1980	500	848	3260	3500	4510	3340	1510	75	51
MIN	14	77	134	145	168	596	376	317	503	74	18	6.6
AC-FT	3060	11600	36620	14920	17660	101000	72630	111100	122000	18470	2410	1070
CFSM	.02	.09	.28	.12	.15	.78	.58	.86	.98	.14	.02	.01
IN.	.03	.10	.33	.13	.16	.90	.65	.99	1.09	.16	.02	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

MEAN	494	1201	2876	3812	5042	5323	5288	4618	1494	586	285	342
MAX	10570	9690	13280	14830	16710	13920	16340	21470	11950	8191	1573	4511
(WY)	1985	1958	1974	1946	1950	1945	1973	1958	1974	1989	1971	1950
MIN	15.4	50.7	111	143	307	706	640	352	80.5	32.5	10.6	4.95
(WY)	1939	1940	1940	1956	2000	1940	1972	1992	1972	1954	1954	1954

07363500 SALINE RIVER NEAR RYE--CONTINUED

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	819954		258406.3			
ANNUAL MEAN	2246		706		2601	
HIGHEST ANNUAL MEAN					5436	1973
LOWEST ANNUAL MEAN					704	1972
HIGHEST DAILY MEAN	14900	Mar 21	4510	May 10	72500	May 18 1968
LOWEST DAILY MEAN	14	Oct 7	6.6	Sep 7	3.8	Sep 16 1954
ANNUAL SEVEN-DAY MINIMUM	19	Oct 2	9.2	Sep 4	4.0	Sep 15 1954
INSTANTANEOUS PEAK FLOW			4550	May 10	74500	May 18 1968
INSTANTANEOUS PEAK STAGE			14.60	May 10	31.40	May 18 1968
INSTANTANEOUS LOW FLOW			5.9	Sep 7	3.5	Sep 27 1954
ANNUAL RUNOFF (AC-FT)	1626000		512500		1884000	
ANNUAL RUNOFF (CFSM)	1.07		.34		1.24	
ANNUAL RUNOFF (INCHES)	14.51		4.57		16.81	
10 PERCENT EXCEEDS	8370		2200		7430	
50 PERCENT EXCEEDS	508		258		672	
90 PERCENT EXCEEDS	38		23		65	



07364150 BAYOU BARTHOLOMEW NEAR MCGEHEE

LOCATION.--Lat 33°37'40", long 91°26'45", in NE1/4SW1/4 sec.30, T.12 S., R.3 W., Desha County, Hydrologic Unit 08050001, near center of stream on downstream side of bridge on State Highway 4, 2.7 mi west of McGehee, 17.5 mi downstream from Ables Creek, at mile 200.5.

DRAINAGE AREA.--576 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1938 to September 1942, October 1945 to current year. Gage-height records collected and occasional discharge measurements made by U.S. Army Corps of Engineers at this site since August 1938. Daily stages 1940 to date and results of discharge measurements 1938, 1947 to date are published in reports of U.S. Army Corps of Engineers.

REVISED RECORDS.--WRD Ark. 1979: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 120.48 ft above sea level. Prior to Sept. 7, 1949, nonrecording gage at same site. October 1938 to June 6, 1972, at datum 1.00 ft higher. Since Jan. 20, 1971, auxiliary water-stage recorder 14 mi upstream.

REMARKS.--No estimated daily discharges. Water-discharge records good except discharges below 50 ft^3/s, which are poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1930, that of May 11, 1958. Flood in 1932 reached a stage of 23.4 ft, present datum, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	35	41	71	128	21	225	679	63	363	97	74	19
2	34	41	72	113	22	218	1010	62	345	98	102	17
3	32	41	74	100	31	230	1490	65	351	92	112	16
4	30	41	76	88	62	250	1840	63	404	83	102	16
5	29	41	85	79	111	267	1950	67	454	81	93	15
6	29	42	95	71	134	267	1960	146	459	90	85	14
7	29	43	98	64	123	250	1920	333	440	100	79	13
8	29	44	98	60	107	225	1840	483	408	101	72	13
9	30	45	100	57	99	193	1720	532	370	95	66	13
10	31	46	104	55	106	164	1580	570	331	89	57	14
11	39	47	107	53	114	145	1440	612	298	76	46	14
12	51	47	114	49	113	128	1300	651	271	60	37	13
13	51	47	159	45	105	116	1190	695	246	49	33	13
14	46	48	285	42	96	108	1070	718	221	47	36	13
15	41	48	386	39	86	103	955	724	195	48	37	12
16	40	49	411	37	78	132	847	708	168	59	38	12
17	39	51	396	36	72	211	745	684	145	73	37	12
18	39	51	378	35	67	289	645	654	132	82	33	13
19	39	52	375	34	65	437	550	639	131	79	31	13
20	38	55	386	32	64	530	457	628	142	72	32	14
21	38	55	402	30	66	569	372	614	157	66	33	15
22	37	56	410	28	69	587	310	601	167	60	34	15
23	36	59	403	26	72	603	244	583	167	59	33	16
24	35	61	381	25	87	627	194	564	158	59	32	16
25	35	64	346	24	111	655	151	547	144	56	29	16
26	36	66	304	23	135	686	117	534	128	53	27	16
27	36	67	260	23	177	723	96	519	113	51	26	15
28	36	68	221	23	220	741	83	505	100	48	24	15
29	36	69	189	22	237	736	74	472	97	47	23	15
30	37	70	164	21	---	728	67	432	93	46	21	14
31	38	---	145	21	---	703	---	395	---	50	20	---
TOTAL	1131	1555	7095	1483	2850	11846	26896	14863	7198	2166	1504	432
MEAN	36.5	51.8	229	47.8	98.3	382	897	479	240	69.9	48.5	14.4
MAX	51	70	411	128	237	741	1960	724	459	101	112	19
MIN	29	41	71	21	21	103	67	62	93	46	20	12
AC-FT	2240	3080	14070	2940	5650	23500	53350	29480	14280	4300	2980	857
CFSM	.06	.09	.40	.08	.17	.66	1.56	.83	.42	.12	.08	.02
IN.	.07	.10	.46	.10	.18	.77	1.74	.96	.46	.14	.10	.03

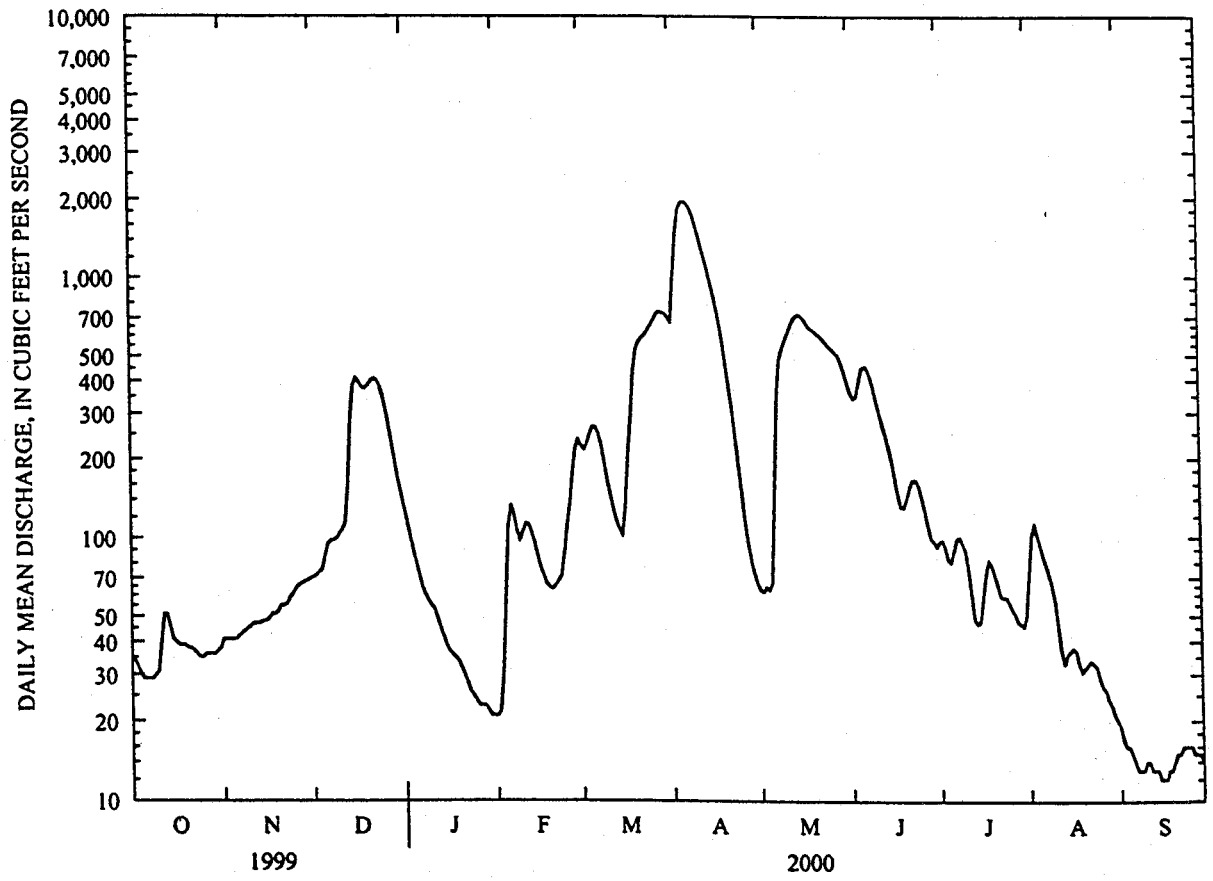
07364150 BAYOU BARTHOLOMEW NEAR MCGEHEE--CONTINUED

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939-42, 1946-00, BY WATER YEAR (WY)

MEAN	168	340	716	1025	1403	1384	1214	1057	458	215	152	150
MAX	1491	2240	2835	3900	5085	4006	3127	5972	2575	3688	1032	1792
(WY)	1985	1958	1973	1946	1990	1997	1991	1958	1974	1989	1989	1974
MIN	8.45	6.88	31.9	39.3	98.3	189	82.8	73.0	22.1	6.03	.44	14.4
(WY)	1996	1996	1982	1966	2000	1954	1966	1965	1972	1954	1956	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939-42, 1946-00	
ANNUAL TOTAL	228214		79019			
ANNUAL MEAN	625		216		686	
HIGHEST ANNUAL MEAN					1488	1973
LOWEST ANNUAL MEAN					149	1972
HIGHEST DAILY MEAN	4550	Feb 4	1960	Apr 6	6870	May 11 1958
LOWEST DAILY MEAN	23	Sep 24	12	Sep 15	.20	Aug 15 1956
ANNUAL SEVEN-DAY MINIMUM	24	Sep 22	13	Sep 12	.20	Aug 15 1956
INSTANTANEOUS PEAK FLOW			1960	Apr 6	6870	May 11 1958
INSTANTANEOUS PEAK STAGE			14.50	Apr 6	[a]25.49	May 11 1958
INSTANTANEOUS LOW FLOW			12	Sep 16,17	.20	Aug 15 1956
ANNUAL RUNOFF (AC-FT)	452700		156700		497200	
ANNUAL RUNOFF (CFSM)	1.09		.37		1.19	
ANNUAL RUNOFF (INCHES)	14.74		5.10		16.19	
10 PERCENT EXCEEDS	1990		613		2000	
50 PERCENT EXCEEDS	173		77		243	
90 PERCENT EXCEEDS	38		22		31	

[a]At present datum



07369680 BAYOU MACON AT EUDORA

LOCATION.--Lat 33°06'09", long 91°15'08", in SE1/4SE1/4 sec.25, T.18 S., R.2 W., Chicot County, Hydrologic Unit 08030100, near left bank on downstream side of bridge on U.S. Highway 65, 0.6 mi south of Eudora.

DRAINAGE AREA.--500 mi².

PERIOD OF RECORD.--October 1988 to current year. Gage-height record and results of discharge measurements since January 1938, are contained in reports of the U.S, Army Corps of Engineers.

GAGE.--Water-stage recorder. Datum of gage is 80.92 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Satellite telemeter at station.

COOPERATION.--Gage-height record provided by the U.S. Army Corps of Engineers.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1938, 27.43 ft May 10, 22, 1958.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

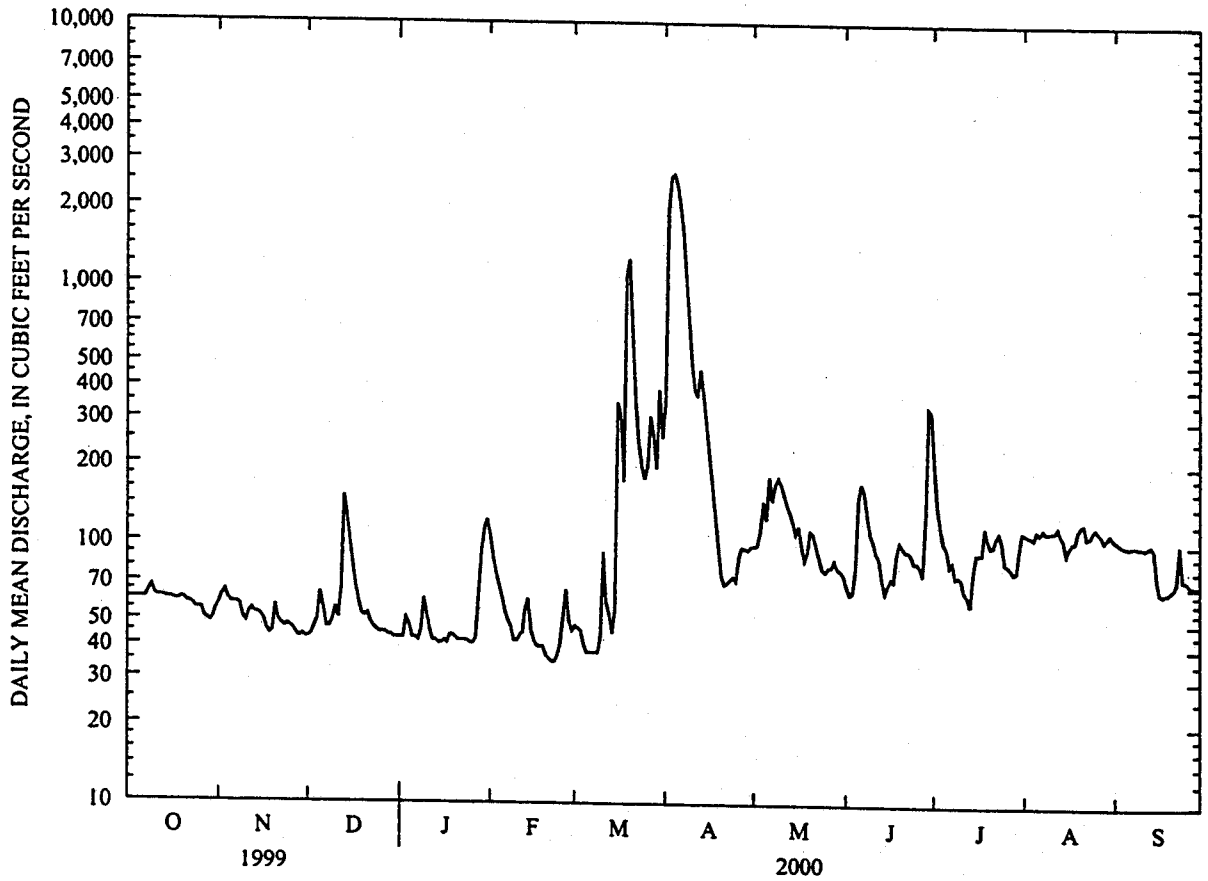
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	60	58	43	43	106	48	349	98	70	201	112	106
2	60	62	44	43	88	47	1930	99	65	141	110	104
3	60	65	47	51	75	46	2600	112	66	117	109	102
4	60	60	50	48	68	41	2670	146	82	102	107	101
5	60	58	64	43	61	38	2440	124	150	97	115	100
6	60	58	55	43	54	38	2050	181	172	84	112	100
7	60	58	47	42	50	38	1610	147	159	87	117	101
8	64	57	47	46	47	38	1140	170	129	76	113	101
9	67	51	50	61	42	38	762	180	110	77	113	100
10	62	49	56	53	42	44	505	170	103	75	114	100
11	61	53	51	46	44	92	395	156	93	67	114	99
12	61	55	66	42	45	59	372	143	88	64	119	101
13	61	53	150	42	56	53	471	133	74	59	111	102
14	60	53	126	41	61	45	380	122	66	79	106	98
15	60	52	102	41	46	55	283	110	71	93	94	76
16	60	50	81	42	42	350	212	118	75	93	100	67
17	59	46	67	41	40	308	162	100	73	93	104	66
18	59	44	59	44	40	172	128	87	93	118	104	67
19	60	45	53	44	40	1090	99	93	103	106	116	67
20	60	57	52	43	37	1250	76	113	99	99	121	69
21	58	50	53	42	36	756	70	110	95	100	122	70
22	58	48	49	42	35	357	71	99	95	108	108	74
23	57	47	47	42	35	245	73	89	92	113	109	102
24	55	48	46	42	37	198	75	81	86	104	115	75
25	55	47	45	41	41	176	72	79	86	86	118	75
26	55	46	45	41	52	198	89	82	83	85	114	73
27	51	44	45	43	66	309	97	82	77	82	111	71
28	50	43	44	61	50	261	96	87	129	79	105	71
29	49	44	44	92	46	194	95	81	338	80	108	71
30	51	43	43	113	---	391	98	80	326	97	112	70
31	55	---	43	122	---	255	---	77	---	113	108	---
TOTAL	1808	1544	1814	1580	1482	7230	19470	3549	3348	2975	3441	2579
MEAN	58.3	51.5	58.5	51.0	51.1	233	649	114	112	96.0	111	86.0
MAX	67	65	150	122	106	1250	2670	181	338	201	122	106
MIN	49	43	43	41	35	38	70	77	65	59	94	66
AC-FT	3590	3060	3600	3130	2940	14340	38620	7040	6640	5900	6830	5120

07369680 BAYOU MACON AT EUDORA--CONTINUED

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1989 - 2000, BY WATER YEAR (WY)

MEAN	91.6	115	277	476	508	382	423	309	189	272	166	94.7
MAX	297	218	651	924	1174	858	1053	1510	330	847	425	150
(WY)	1995	1992	1991	1999	1991	1995	1991	1991	1989	1994	1994	1994
MIN	41.8	51.5	58.5	51.0	51.1	98.1	63.0	72.0	112	90.5	83.7	61.8
(WY)	1994	1996	2000	2000	2000	1993	1998	1992	2000	1997	1997	1997

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1989 - 2000	
ANNUAL TOTAL	97799		50820			
ANNUAL MEAN	268		139		274	
HIGHEST ANNUAL MEAN					493	1991
LOWEST ANNUAL MEAN					130	1996
HIGHEST DAILY MEAN	3560	Jan 31	2670	Apr 4	4170	Apr 23 1995
LOWEST DAILY MEAN	43	Nov 28	35	Feb 22	1.7	Sep 23 1988
ANNUAL SEVEN-DAY MINIMUM	44	Nov 26	37	Feb 18	34	Sep 28 1988
INSTANTANEOUS PEAK FLOW			2730	Apr 3	4280	Apr 23 1995
INSTANTANEOUS PEAK STAGE			22.20	Apr 3	24.41	Apr 29 1991
INSTANTANEOUS LOW FLOW			33	Feb 23	32	May 21-23 1995
ANNUAL RUNOFF (AC-FT)	194000		100800		198700	
10 PERCENT EXCEEDS	508		173		602	
50 PERCENT EXCEEDS	109		75		109	
90 PERCENT EXCEEDS	51		43		55	



07344370 RED RIVER AT SPRING BANK, AR

LOCATION.--Lat 33°04'50", Long. 93°51'42", in SW $^1/_4$ NW $^1/_4$ sec.24, T.19 S., R.27 W., Lafayette County, near right bank on downstream side of bridge on State highway 160, 0.1 mi downstream from Sulphur River, 4.5 mi upstream from Arkansas-Louisiana State line, and 2.5 mi east of intersection of U.S. Highway 71 and State Highway 160 at Doddridge, AR.

PERIOD OF RECORD.--October 1, 1995 to July 10, 1996 daily observer record. July 11, 1998 to current year.

GAGE.--Water-stage recorder. Prior to July 11, 1996, observer record of daily readings only.

REMARKS.--Records fair. Datum of gage not determined. Satellite telemetry at station.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 52,900 ft^3/s, June 25, gage height, 26.89 ft; minimum discharge, 1,890 ft^3/s, Nov. 24, 25, gage height, 12.34 ft.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2890	2370	2300	4400	3390	10900	11900	6170	18300	42600	6880	5550
2	3180	2170	2420	4480	4220	12900	13800	6140	18000	35100	7600	5400
3	3280	2150	2450	4710	4810	13100	16200	6470	17600	31100	7720	4520
4	2920	2280	2360	4820	5090	13300	18200	7460	17800	29100	7640	3880
5	2600	2380	2270	5030	5330	13800	19400	10700	18700	27900	6900	4300
6	2420	2420	2370	5270	5420	13800	20100	20500	19200	27500	5620	5180
7	2460	2410	2210	4700	5290	13500	21300	27500	17700	24100	5170	5990
8	2690	2270	2080	4310	5750	13000	22000	30300	17700	21400	6110	6060
9	3000	2080	2240	3790	7060	13000	20500	31500	20400	19000	6910	5500
10	3000	2030	3130	3420	7550	12500	19200	32600	21700	18600	7170	4770
11	2710	2160	4130	3390	7540	12100	18900	30800	20700	18500	7420	4190
12	2410	2260	4430	3770	7210	11300	17200	27900	20400	17400	7610	4150
13	2250	2300	4430	4390	6770	11300	14400	24900	21200	16400	6290	4710
14	2220	2290	5070	4520	6410	11400	13800	22900	21900	16700	5090	5250
15	2240	2180	8550	4370	6160	11800	16600	21300	21700	16500	6660	5200
16	2240	2000	13000	4170	5260	11900	17800	19000	24900	16400	8360	5430
17	2220	1920	16400	4110	4580	12000	22300	15100	33400	16400	7570	5110
18	2150	2040	15200	4310	4330	11200	25200	12600	37000	16800	6600	4570
19	2090	2170	12200	4560	4220	10300	25100	12700	36700	16200	5870	4500
20	2010	2250	10800	4630	3940	9890	23300	16600	38700	13700	4860	4330
21	2220	2270	9890	4610	3750	9770	20800	21600	42700	12000	4350	4270
22	2610	2170	9490	4410	3780	10500	17200	25100	45400	9760	5000	4260
23	2930	2010	9340	4010	4030	10200	13500	29000	49300	7250	5660	4220
24	2880	1910	8930	3680	4390	9710	12000	31900	52100	6540	5830	4060
25	2490	1910	7920	3810	4500	8830	10900	29900	52100	7570	5870	3860
26	2210	2030	7100	4020	4790	7780	9790	27700	50100	7850	5520	3950
27	2180	2220	6380	3870	5230	7490	8830	24400	49200	7170	4580	6260
28	2300	2330	6150	3900	5870	7460	8260	20900	50000	7310	3990	6000
29	2370	2310	5850	3870	7390	7850	7420	20200	50200	7200	4300	5280
30	2420	2200	4970	3630	---	8990	6640	19900	48400	6110	5050	4300
31	2470	---	4530	3320	---	10200	---	18900	---	5710	5380	---
TOTAL	78060	65490	198590	130280	154060	341770	492540	652640	953200	525870	189580	145050
MEAN	2518	2183	6406	4203	5312	11020	16420	21050	31770	16960	6115	4835
MAX	3280	2420	16400	5270	7550	13800	25200	32600	52100	42600	8360	6260
MIN	2010	1910	2080	3320	3390	7460	6640	6140	17600	5710	3990	3860
AC-FT	154800	129900	393900	258400	305600	677900	977000	1295000	1891000	1043000	376000	287700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1998 - 2000, BY WATER YEAR (WY)

MEAN	8520	5602	17380	36530	24260	29640	24870	19010	17320	12030	5733	5669
MAX	18140	8174	23850	87290	47750	59030	32630	25680	31770	16960	6470	8018
(WY)	1999	1999	1999	1998	1998	1998	1998	1999	2000	2000	1999	1998
MIN	2518	2183	6406	4203	5312	11020	16420	10300	6655	4176	4614	4154
(WY)	2000	2000	2000	2000	2000	2000	2000	1998	1998	1998	1998	1999

07344370 RED RIVER AT SPRING BANK, AR--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1998 - 2000	
ANNUAL TOTAL	4816800		3927130			
ANNUAL MEAN	13200		10730		17200	
HIGHEST ANNUAL MEAN					24400	1998
LOWEST ANNUAL MEAN					10730	2000
HIGHEST DAILY MEAN	42800	Apr 8	52100	Jun 24	124000	Jan 12 1998
LOWEST DAILY MEAN	1910	Nov 24	1910	Nov 24	1910	Nov 24 1999
ANNUAL SEVEN-DAY MINIMUM	2070	Nov 21	2070	Nov 21	2070	Nov 21 1999
INSTANTANEOUS PEAK FLOW			52900	Jun 25	126000	Jan 12 1998
INSTANTANEOUS PEAK STAGE			26.89	Jun 25	34.05	Jan 12 1998
INSTANTANEOUS LOW FLOW			a1890	Nov 24	a1890	Nov 24 1999
INSTANTANEOUS LOW STAGE			a12.34	Nov 24	a12.34	Nov 24 1999
ANNUAL RUNOFF (AC-FT)	9554000		7789000		12460000	
10 PERCENT EXCEEDS	29900		24200		40200	
50 PERCENT EXCEEDS	10700		6280		9760	
90 PERCENT EXCEEDS	2280		2280		3670	

a Also occurred on Nov. 25, 1999

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.11	12.90	12.82	14.59	13.59	17.62	18.02	15.12	20.14	25.37	15.11	14.50
2	13.39	12.68	12.96	14.64	14.24	18.43	18.75	15.10	20.02	24.12	15.48	14.42
3	13.49	12.65	12.99	14.79	14.65	18.52	19.60	15.28	19.87	23.38	15.54	13.84
4	13.18	12.81	12.90	14.86	14.84	18.60	20.26	15.80	19.93	22.98	15.51	13.38
5	12.88	12.92	12.79	14.99	14.98	18.79	20.61	17.25	20.24	22.74	15.12	13.71
6	12.71	12.97	12.91	15.14	15.03	18.75	20.83	20.85	20.40	22.66	14.39	14.33
7	12.76	12.95	12.72	14.75	14.94	18.64	21.14	22.65	19.89	21.87	14.11	14.84
8	13.01	12.79	12.57	14.47	15.22	18.48	21.34	23.24	19.90	21.07	14.68	14.90
9	13.33	12.58	12.76	14.07	15.95	18.47	20.94	23.46	20.79	20.27	15.13	14.57
10	13.34	12.51	13.65	13.76	16.20	18.28	20.56	23.67	21.20	20.14	15.26	14.11
11	13.08	12.67	14.48	13.73	16.18	18.11	20.47	23.32	20.87	20.11	15.39	13.71
12	12.78	12.78	14.70	14.04	16.01	17.79	19.93	22.75	20.79	19.70	15.49	13.69
13	12.62	12.82	14.70	14.50	15.77	17.79	18.95	22.09	21.02	19.35	14.78	14.11
14	12.60	12.81	15.13	14.59	15.57	17.81	18.73	21.57	21.23	19.48	14.06	14.48
15	12.64	12.69	17.02	14.47	15.42	17.97	19.71	21.10	21.17	19.39	14.98	14.46
16	12.65	12.48	18.80	14.32	14.87	18.01	20.11	20.39	22.04	19.36	15.85	14.63
17	12.64	12.37	19.92	14.27	14.41	18.08	21.41	19.04	23.81	19.36	15.47	14.43
18	12.58	12.53	19.51	14.41	14.22	17.74	22.17	18.07	24.47	19.50	14.96	14.08
19	12.53	12.69	18.53	14.58	14.13	17.32	22.13	18.07	24.41	19.27	14.54	14.04
20	12.44	12.77	17.96	14.62	13.91	17.15	21.68	19.58	24.75	18.27	13.90	13.93
21	12.69	12.79	17.60	14.60	13.76	17.09	21.01	21.19	25.40	17.49	13.55	13.90
22	13.13	12.68	17.43	14.46	13.78	17.41	19.89	22.12	25.81	16.47	14.01	13.91
23	13.47	12.49	17.36	14.15	13.96	17.27	18.55	22.97	26.39	15.30	14.44	13.89
24	13.43	12.37	17.17	13.89	14.22	17.07	17.97	23.54	26.78	14.93	14.56	13.79
25	13.03	12.37	16.69	13.98	14.30	16.65	17.47	23.15	26.78	15.47	14.60	13.65
26	12.73	12.52	16.27	14.14	14.49	16.15	16.96	22.69	26.50	15.61	14.40	13.72
27	12.69	12.74	15.87	14.01	14.77	16.01	16.51	21.94	26.37	15.26	13.79	15.25
28	12.83	12.87	15.74	14.03	15.16	15.99	16.24	20.96	26.48	15.33	13.37	15.13
29	12.91	12.83	15.55	14.00	15.97	16.19	15.81	20.76	26.51	15.28	13.62	14.70
30	12.96	12.72	14.99	13.80	---	16.73	15.40	20.66	26.26	14.68	14.15	14.04
31	13.01	---	14.69	13.53	---	17.29	---	20.32	---	14.45	14.38	---
MAX	13.49	12.97	19.92	15.14	16.20	18.79	22.17	23.67	26.78	25.37	15.85	15.25
MIN	12.44	12.37	12.57	13.53	13.59	15.99	15.40	15.10	19.87	14.45	13.37	13.38

07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51'30", long 99°30'30", in SW $^1/_4$ SE $^1/_4$ sec.34. T.5 N, R.22 W., Greer County, Hydrologic Unit 11120202, near left bank on downstream side of pier of bridge on State Highway 34, 0.5 mi south of Mangum, 13.0 mi downstream from Fish Creek, and at mile 35.5.

DRAINAGE AREA.--1,566 mi^2, of which 209 mi^2 is probably noncontributing.

PERIOD OF RECORD.--April 1905 to June 1906, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1938.

GAGE.--Water-stage recorder. Datum of gage is 1,490.87 ft above sea level (levels by U.S. Bureau of Reclamation). Apr. 11, 1905 to June 30, 1906, nonrecording gage at site 0.2 mi upstream at different datum. Oct. 1, 1937 to Nov. 8, 1938, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharge. Records fair. U.S. Geological Survey satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 6,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.48	5.3	16	23	32	27	250	737	12	559	1.3	.00
2	.41	5.5	17	23	34	32	461	247	16	352	.93	.00
3	.31	5.0	16	22	32	83	241	175	230	147	.54	.00
4	.47	5.0	21	21	31	119	223	135	454	110	.33	.00
5	.69	4.9	21	21	28	80	172	114	286	87	.10	.00
6	.62	5.0	28	20	28	61	139	98	193	71	.00	.00
7	.96	5.2	31	22	28	54	129	87	147	58	.00	.00
8	1.1	5.8	28	25	28	54	121	76	114	48	.00	.00
9	1.5	6.1	32	22	28	47	112	64	92	41	.01	.00
10	1.6	6.1	29	23	27	47	103	55	111	34	.17	.00
11	1.4	6.1	26	23	27	44	96	48	103	29	.00	.00
12	1.4	6.4	24	23	27	39	104	40	113	25	.00	.00
13	1.4	6.7	23	22	26	36	126	34	119	24	.00	.00
14	1.3	6.7	22	22	26	36	149	30	91	29	.00	.00
15	1.1	7.1	20	22	26	34	137	28	70	42	.00	.00
16	1.0	7.3	20	22	26	33	150	28	54	44	.00	.00
17	.78	7.5	19	24	26	35	114	26	92	35	.00	.00
18	.64	8.0	22	25	26	39	95	23	240	25	.00	.00
19	.63	8.0	23	25	24	39	85	21	251	19	.00	.00
20	.70	8.4	23	25	24	38	74	20	186	14	.00	.00
21	.75	8.7	24	24	24	36	68	20	182	11	.00	.00
22	.75	8.7	24	24	25	41	65	21	155	8.5	.00	.00
23	.75	9.3	24	24	29	803	65	19	134	7.5	.00	.00
24	.86	9.5	24	25	27	835	66	17	116	6.2	.00	.00
25	1.0	9.5	24	25	36	328	87	14	101	4.8	.00	.00
26	1.2	10	23	25	43	255	104	32	115	3.9	.00	.00
27	1.4	11	22	26	49	183	106	46	110	2.8	.00	.00
28	1.6	11	22	28	38	148	79	67	246	2.2	.00	.00
29	1.9	13	23	31	31	130	72	48	520	2.5	.00	.00
30	3.0	16	23	30	---	125	154	29	483	2.5	.00	.00
31	4.3	---	23	32	---	116	---	18	---	1.8	.00	---
TOTAL	36.00	232.8	717	749	856	3977	3947	2417	5136	1846.7	3.38	0.00
MEAN	1.16	7.76	23.1	24.2	29.5	128	132	78.0	171	59.6	.11	.000
MAX	4.3	16	32	32	49	835	461	737	520	559	1.3	.00
MIN	.31	4.9	16	20	24	27	65	14	12	1.8	.00	.00
AC-FT	71	462	1420	1490	1700	7890	7830	4790	10190	3660	6.7	.00

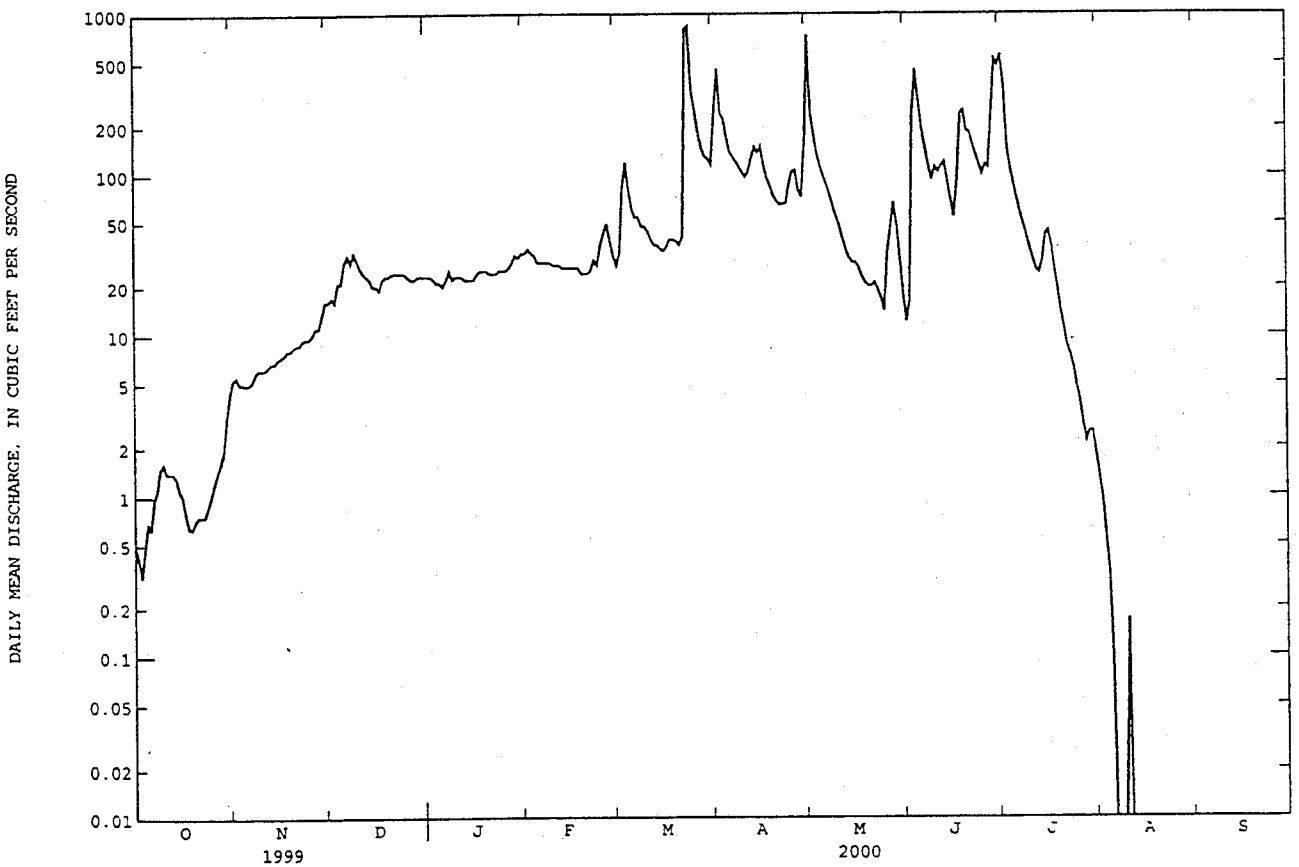
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

MEAN	77.7	32.1	38.6	47.4	56.7	55.8	106	261	239	65.2	40.2	50.9
MAX	919	196	148	199	263	344	1292	1389	1602	575	539	424
(WY)	1961	1987	1992	1960	1998	1998	1997	1957	1941	1953	1995	1995
MIN	.000	.000	.000	.000	.000	.12	.000	.000	.000	.000	.000	.000
(WY)	1941	1940	1940	1940	1953	1971	1955	1953	1952	1963	1943	1939

07300500 SALT FORK RED RIVER AT MANGUM, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	22426.07		19917.88			
ANNUAL MEAN	61.4		54.4		89.3	
HIGHEST ANNUAL MEAN					277	1941
LOWEST ANNUAL MEAN					12.3	1940
HIGHEST DAILY MEAN	1260	Jun 25	835	Mar 24	22600	May 28 1978
LOWEST DAILY MEAN	.18	Sep 2	.00	several days	[a].00	Oct 2 1937
ANNUAL SEVEN-DAY MINIMUM	.27	Sep 8	.00	Aug 11	.00	Aug 14 1938
INSTANTANEOUS PEAK FLOW			1990	Mar 23	72000	May 16 1957
INSTANTANEOUS PEAK STAGE			7.87	Mar 23	14.70	Jun 16 1938
ANNUAL RUNOFF (AC-FT)	44480		39510		64690	
10 PERCENT EXCEEDS	141		134		130	
50 PERCENT EXCEEDS	38		24		18	
90 PERCENT EXCEEDS	.88		.00		.00	

[a]No flow at times in most years.



07301420 SWEETWATER CREEK NEAR SWEETWATER, OK

LOCATION.--Lat 35°25'20", long 99°58'08", in NW 1/4 NE 1/4 sec.20, T.11 N, R.26 W., Roger Mills-Beckham County line, Hydrologic Unit 11120302, on right bank downstream bridge piling of State Highway 152, 0.4 mi downstream from Freezeout Creek, 3.3 mi west of Sweetwater, and at mile 16.0.

DRAINAGE AREA.--424 mi^2, of which 20 mi^2 is probably noncontributing.

PERIOD OF RECORD.--April 1986 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,087.76 ft above sea level.

REMARKS.--Records good. U.S. Bureau of Reclamations' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.9	6.9	14	21	25	22	64	34	10	122	11	.84
2	4.3	7.3	14	20	24	32	94	34	27	90	9.7	.76
3	3.9	7.8	15	21	24	57	79	35	35	75	8.9	.73
4	4.0	8.3	16	21	23	44	62	34	40	62	8.3	.71
5	4.3	8.4	21	22	23	37	54	33	37	51	7.4	.67
6	4.3	8.8	22	21	23	32	48	32	27	44	6.7	.66
7	4.1	9.2	22	21	24	30	42	31	22	39	6.4	.67
8	3.7	9.6	24	21	23	33	38	28	18	35	6.0	.68
9	3.8	9.9	25	22	23	34	37	26	15	31	5.6	.67
10	3.8	10	24	21	22	31	37	24	19	28	5.3	.66
11	3.7	11	23	21	22	28	35	24	64	25	4.9	.64
12	3.7	11	22	21	22	26	37	22	107	24	4.4	.62
13	3.6	11	22	21	22	26	40	20	99	24	4.0	.65
14	3.6	11	21	21	22	25	40	20	67	23	3.8	.63
15	3.4	11	21	21	22	25	43	19	45	21	3.4	.62
16	3.4	12	21	21	22	23	58	19	35	20	3.9	.63
17	3.5	13	21	21	21	25	64	19	43	19	3.3	.63
18	3.7	13	20	21	21	28	50	19	91	17	2.8	.63
19	4.2	12	21	22	21	28	43	17	65	16	2.6	.63
20	5.1	13	21	21	21	26	37	17	74	15	2.3	.63
21	5.9	13	21	21	22	25	33	17	58	14	2.1	.67
22	6.4	13	21	21	23	30	32	17	45	13	1.7	.70
23	6.2	14	21	21	24	117	32	16	38	13	1.5	.69
24	6.3	14	21	21	25	205	31	15	32	13	1.5	.81
25	6.3	14	21	21	37	125	38	13	28	12	1.3	.85
26	6.7	14	21	21	45	87	46	15	49	12	1.3	.87
27	6.8	14	21	22	33	71	50	15	131	11	1.2	.88
28	6.6	14	21	23	29	61	43	15	184	11	1.1	1.1
29	6.9	14	21	e22	25	54	37	14	220	12	.99	1.2
30	6.8	14	21	e21	---	49	35	13	208	11	.92	1.2
31	6.9	---	21	e23	---	48	---	11	---	12	.90	---
TOTAL	150.8	342.2	641	659	713	1484	1379	668	1933	915	125.21	22.33
MEAN	4.86	11.4	20.7	21.3	24.6	47.9	46.0	21.5	64.4	29.5	4.04	.74
MAX	6.9	14	25	23	45	205	94	35	220	122	11	1.2
MIN	3.4	6.9	14	20	21	22	31	11	10	11	.90	.62
AC-FT	299	679	1270	1310	1410	2940	2740	1320	3830	1810	248	44

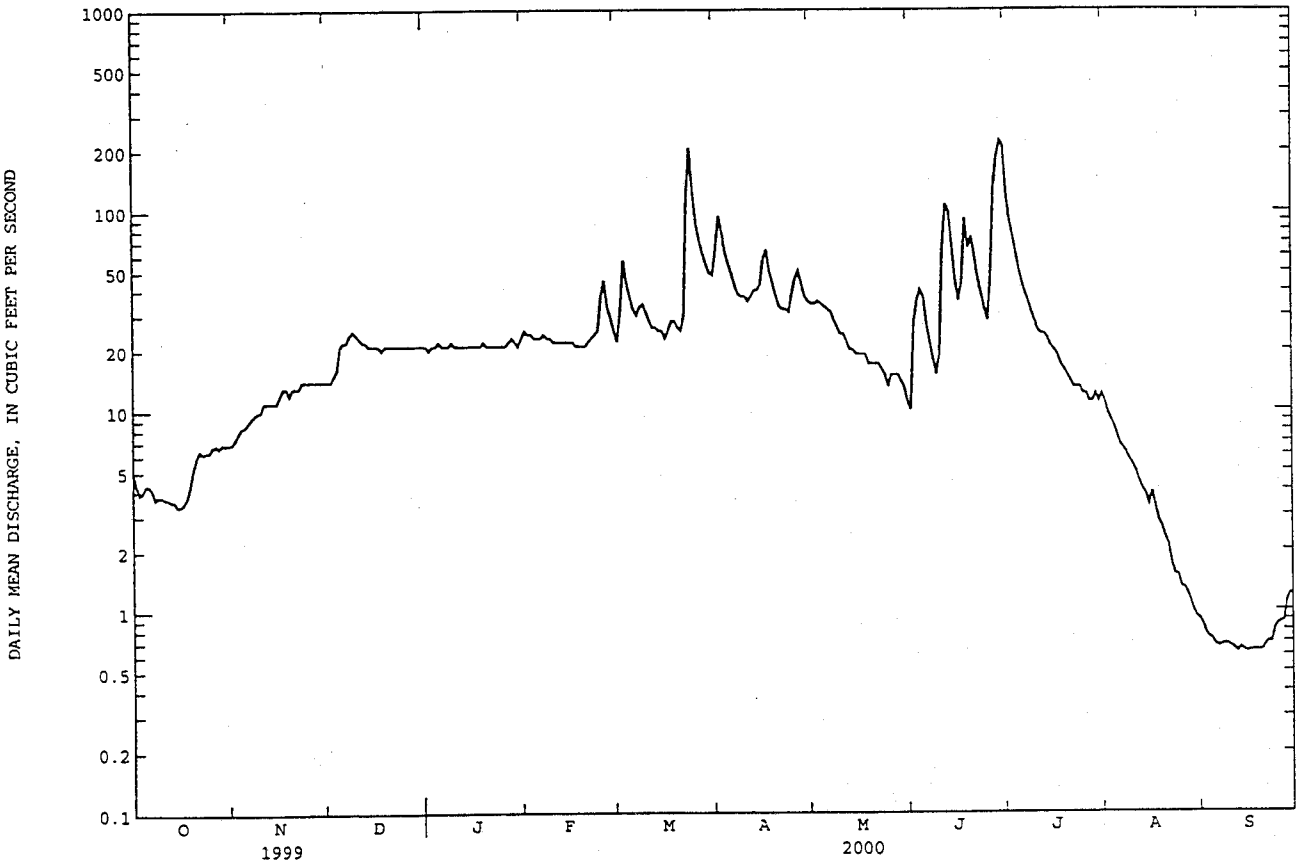
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2000, BY WATER YEAR (WY)

MEAN	16.4	21.5	25.3	28.0	30.1	39.0	39.6	40.9	40.8	13.3	7.71	11.7
MAX	72.2	61.1	51.5	53.7	51.3	85.6	126	150	115	31.6	38.7	51.6
(WY)	1987	1987	1998	1998	1987	1998	1997	1997	1995	1997	1995	1988
MIN	.20	5.23	6.73	11.2	15.2	17.9	16.2	18.1	7.08	.97	.080	.084
(WY)	1995	1995	1995	1995	1995	1991	1991	1991	1994	1994	1994	1994

e Estimated

07301420 SWEETWATER CREEK NEAR SWEETWATER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1986 - 2000	
ANNUAL TOTAL	8971.32		9032.54			
ANNUAL MEAN	24.6		24.7		26.4	
HIGHEST ANNUAL MEAN					53.0	1997
LOWEST ANNUAL MEAN					10.9	1994
HIGHEST DAILY MEAN	175	May 3	220	Jun 29	755	May 25 1997
LOWEST DAILY MEAN	.40	Sep 1,2	.62	Sep 12,15	.00	at times
ANNUAL SEVEN-DAY MINIMUM	.46	Aug 28	.63	Sep 14	.00	Sep 28 1994
INSTANTANEOUS PEAK FLOW			244	Jun 29	1940	Jun 3 1995
INSTANTANEOUS PEAK STAGE			10.42	Jun 29	15.89	Jun 3 1995
INSTANTANEOUS LOW FLOW					.00	Aug 27 1994
ANNUAL RUNOFF (AC-FT)	17790		17920		19120	
10 PERCENT EXCEEDS	49		48		49	
50 PERCENT EXCEEDS	21		21		20	
90 PERCENT EXCEEDS	2.2		1.3		2.1	



07301500 NORTH FORK RED RIVER NEAR CARTER, OK

LOCATION.--Lat 35°10'05", long 99°30'25", in NW $^1/_4$ SE $^1/_4$ sec.15, T.8 N., R.22 W., Beckham County, Hydrologic Unit 11120302, on left bank on downstream side of roadway on State Highway 34, 3.0 mi south of Carter, 10.8 mi downstream from Timber Creek, and at mile 110.5.

DRAINAGE AREA.--2,337 mi^2, of which 399 mi^2 is probably noncontributing.

PERIOD OF RECORD.--October 1944 to September 1962. Annual maximum and occasional low-flow measurements, water years 1963-64. August 1964 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,673.71 ft above sea level.

REMARKS.--Records fair. U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,200 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 29	0500	3,450	7.42	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	11	24	53	84	88	381	139	23	644	35	.65
2	4.8	10	26	52	84	108	691	168	30	611	31	.34
3	4.3	9.3	27	51	81	313	378	216	52	443	28	.08
4	4.0	9.5	33	46	78	215	246	188	202	391	24	.00
5	4.1	9.8	31	47	75	178	229	168	219	348	21	.00
6	4.6	11	34	47	72	153	194	155	166	305	20	.00
7	4.3	13	48	48	70	137	185	140	133	268	18	.00
8	4.7	13	50	50	70	162	166	125	105	232	e9.2	.00
9	4.7	13	53	50	72	175	146	104	85	211	e8.7	.00
10	4.7	14	53	51	74	144	139	88	102	187	e8.2	.00
11	5.0	15	51	51	73	127	138	84	398	165	e7.5	.00
12	4.6	16	51	51	70	119	145	81	600	143	e6.6	.00
13	4.4	17	50	51	72	118	157	77	444	133	e5.7	.00
14	4.1	18	50	50	70	111	184	72	312	131	e4.8	.00
15	3.9	18	48	50	70	103	179	70	244	124	4.2	.00
16	3.6	19	46	50	73	108	259	67	188	113	e4.0	.00
17	2.8	20	46	50	72	113	355	66	201	101	3.5	.00
18	2.7	19	48	53	73	119	256	61	443	91	3.5	.00
19	3.2	19	48	57	70	121	207	54	343	87	3.4	.00
20	3.7	19	48	59	68	116	171	52	305	80	3.3	.00
21	4.2	19	48	58	68	112	143	53	295	72	3.3	.00
22	4.5	20	48	60	72	119	136	48	295	65	3.1	.00
23	4.6	22	49	62	79	1110	133	45	312	65	2.9	.00
24	4.9	22	50	63	89	2060	127	39	212	61	2.6	.00
25	5.1	22	50	65	124	656	134	36	166	58	2.4	.00
26	5.5	23	51	65	149	416	158	55	599	53	2.1	.00
27	5.8	26	52	69	136	272	181	52	568	46	1.8	.00
28	6.2	25	53	71	123	208	174	45	2430	42	1.5	.00
29	8.2	25	53	71	105	179	151	41	2590	41	1.4	.00
30	20	23	56	73	---	185	141	34	1060	42	1.1	.00
31	15	---	56	79	---	191	---	28	---	39	.85	---
TOTAL	167.4	520.6	1431	1753	2416	8336	6284	2651	13122	5392	272.65	1.07
MEAN	5.40	17.4	46.2	56.5	83.3	269	209	85.5	437	174	8.80	.036
MAX	20	26	56	79	149	2060	691	216	2590	644	35	.65
MIN	2.7	9.3	24	46	68	88	127	28	23	39	.85	.00
AC-FT	332	1030	2840	3480	4790	16530	12460	5260	26030	10700	541	2.1

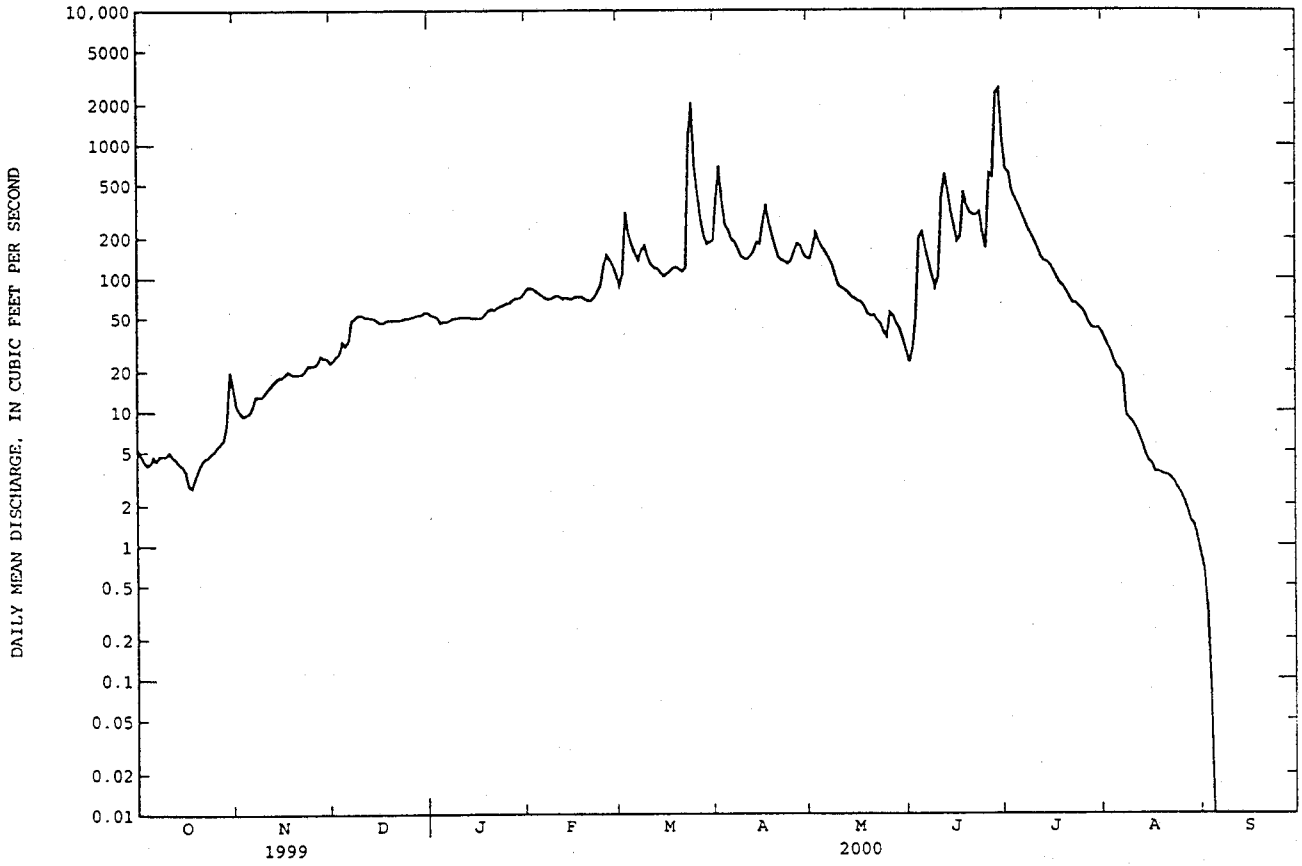
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000, BY WATER YEAR (WY)

MEAN	92.7	59.8	67.2	79.2	102	114	152	405	291	74.9	48.2	56.0
MAX	1195	360	333	362	365	466	1253	2713	1560	828	560	432
(WY)	1987	1987	1998	1998	1960	1998	1997	1977	1995	1950	1995	1996
MIN	.000	.000	.000	.000	.000	.000	.079	.000	.60	.000	.000	.000
(WY)	1946	1946	1953	1953	1953	1955	1971	1971	1966	1954	1952	1945

e Estimated

07301500 NORTH FORK RED RIVER NEAR CARTER, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000	
ANNUAL TOTAL	53168.9		42346.72			
ANNUAL MEAN	146		116		129	
HIGHEST ANNUAL MEAN					356	1987
LOWEST ANNUAL MEAN					12.9	1931
HIGHEST DAILY MEAN	1520	Jun 1	2590	Jun 29	20700	May 26 1959
LOWEST DAILY MEAN	2.0	Sep 3,8,9	.00	Sep 4-30	.00	at times
ANNUAL SEVEN-DAY MINIMUM	2.1	Sep 3	.00	Sep 4	.00	May 24 1945
INSTANTANEOUS PEAK FLOW			3450	Jun 29	53400	May 26 1959
INSTANTANEOUS PEAK STAGE			7.42	Jun 29	15.08	Jun 4 1995
ANNUAL RUNOFF (AC-FT)	105500		83990		93230	
10 PERCENT EXCEEDS	334		236		227	
50 PERCENT EXCEEDS	111		53		38	
90 PERCENT EXCEEDS	4.3		2.3		.00	



07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, on left bank at downstream side of bridge abutment on U.S. Highway 81, 0.5 mi downstream from Chicago, and Rock Island Railroad Co. bridge, 1.2 mi south of Terral, 3.6 mi downstream from Little Wichita River, and at mile 872.

DRAINAGE AREA.--28,723 mi^2 of which 5,936 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 770.31 ft above sea level. Prior to Jan 12, 1939, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Apr 1938, at least 10% of contributing drainage area has been regulated by upstream reservoirs. There are many small diversions upstream from station for irrigation, oil field operations, and for municipal uses. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 19, 1935, reached a stage of 27.2 ft, although floods in 1891 and on May 1, 1908, are reported to have reached about the same stage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

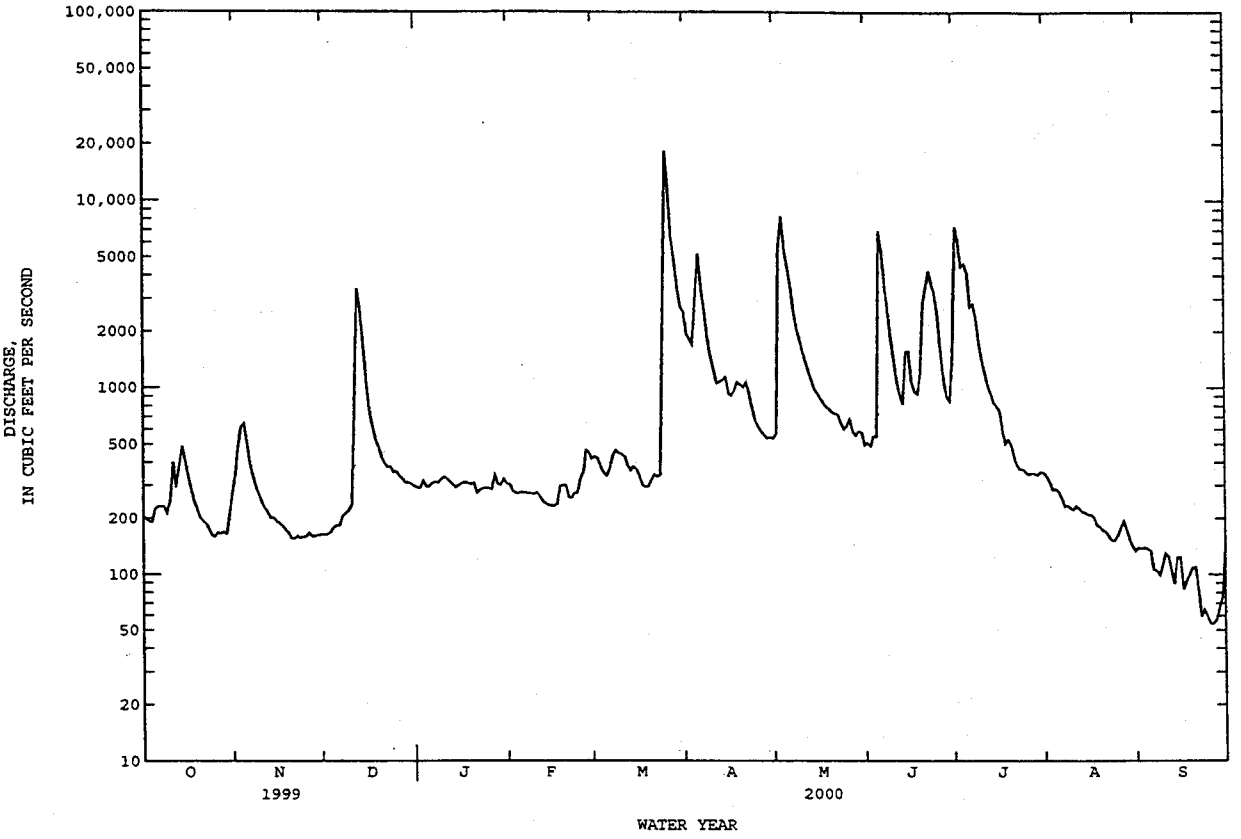
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	333	163	292	304	429	1940	566	509	7330	336	139
2	198	480	163	290	279	418	1830	5490	488	6160	314	138
3	192	612	168	317	271	378	1710	8330	554	4460	285	139
4	190	643	177	296	271	351	3030	5470	551	4620	288	137
5	224	503	183	296	276	337	5210	4410	6990	4080	279	133
6	230	396	182	308	274	371	3350	3500	5280	2710	257	106
7	231	336	205	313	271	429	2530	2580	3540	2810	231	104
8	230	291	212	308	271	463	1860	2070	2520	2330	235	99
9	212	266	218	322	267	446	1490	1780	1830	1720	226	111
10	249	242	237	333	274	443	1250	1560	1400	1400	221	129
11	402	226	687	327	263	429	1060	1370	1090	1190	232	124
12	291	213	3380	314	247	386	1070	1220	921	1020	224	104
13	384	200	2610	302	239	361	1100	1080	816	923	216	89
14	491	201	1650	291	234	378	1140	979	1550	831	212	123
15	402	191	1010	299	234	367	932	934	1570	796	208	123
16	337	187	758	308	231	331	904	872	1090	750	208	83
17	285	180	614	312	237	299	962	820	955	579	200	91
18	245	172	527	307	297	295	1070	786	928	506	182	98
19	221	166	482	303	299	296	1040	771	1190	532	179	108
20	201	155	428	308	300	319	997	734	2810	493	171	109
21	192	155	396	273	259	343	1060	728	3460	420	169	84
22	186	160	375	282	256	335	916	715	4240	387	159	59
23	175	156	378	288	273	340	765	650	3590	366	152	65
24	162	159	354	290	274	2590	670	605	3190	369	152	59
25	158	159	356	289	324	18300	620	630	2400	352	162	54
26	166	166	337	286	354	12400	583	679	1490	344	178	54
27	165	159	323	340	463	6360	557	587	1090	351	192	57
28	168	160	310	304	452	4850	537	557	899	348	172	67
29	164	162	311	301	417	3470	543	588	853	341	153	75
30	210	163	305	324	---	2740	533	578	1490	357	141	141
31	274	---	297	305	---	2560	---	494	---	354	133	---
TOTAL	7439	7592	17796	9428	8411	61814	41259	52133	59284	49229	6467	3002
MEAN	240	253	574	304	290	1994	1375	1682	1976	1588	209	100
MAX	491	643	3380	340	463	18300	5210	8330	6990	7330	336	141
MIN	158	155	163	273	231	295	533	494	488	341	133	54
AC-FT	14760	15060	35300	18700	16680	122600	81840	103400	117600	97650	12830	5950

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

MEAN	2957	1488	1130	939	1353	2041	2626	6540	6250	1671	1335	2011
MAX	23900	9713	11810	5306	9320	14710	18080	43580	37460	8077	14730	9653
(WY)	1987	1987	1992	1992	1987	1998	1990	1957	1941	1950	1995	1986
MIN	108	102	91.2	76.5	136	66.1	142	134	517	158	155	100
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	1970	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	549247		323854			
ANNUAL MEAN	1505		885		2527	
HIGHEST ANNUAL MEAN					8925	1987
LOWEST ANNUAL MEAN					523	1953
HIGHEST DAILY MEAN	11600	Jun 27	18300	Mar 25	215000	Jun 7 1995
LOWEST DAILY MEAN	155	Nov 20	54	Sep 25	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	159	Nov 19	59	Sep 22	47	Mar 18 1940
INSTANTANEOUS PEAK FLOW			20000	Mar 25	236000	Jun 7 1995
INSTANTANEOUS PEAK STAGE			14.46	Mar 25	33.60	Oct 22 1983
ANNUAL RUNOFF (AC-FT)	1089000		642400		1831000	
10 PERCENT EXCEEDS	4170		2440		5570	
50 PERCENT EXCEEDS	629		332		603	
90 PERCENT EXCEEDS	201		155		177	

07315500 RED RIVER NEAR TERRAL, OK--Continued



07316500 WASHITA RIVER NEAR CHEYENNE, OK

LOCATION.--Lat 35°37'35", long 99°40'05", in SE $^1/_4$ sec.5, T.13 N., R.23 W., Roger Mills County, Hydrologic Unit 11130301, on left bank on downstream side of bridge on U.S. Highway 283, 0.5 mi downstream from Sergeant Major Creek, 1.0 mi north of Cheyenne, 5.2 mi upstream from Dead Indian Creek, and at mile 543.9.

DRAINAGE AREA.--794 mi^2.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,900.98 ft above sea level. May 1, 1938, to Nov. 16, 1946, and Oct. 1, 1947, to Jan. 11, 1948, nonrecording gage at site 50 ft upstream and datum 5.00 ft higher. Jan. 12, 1948 to Dec. 31, 1976, at site 50 ft upstream and datum 5.00 ft higher. Jan. 1, 1977, to Dec. 20, 1979, at site 50 ft upstream at same datum.

REMARKS.--Records good. Flow regulated since 1961 by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at site.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3, 1934, reached a stage of 1.0 ft lower than that in 1954, at site on upstream side of highway fill (at old bridge site).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	6.2	11	16	23	26	76	36	9.2	114	5.3	.00
2	6.2	6.4	11	15	e23	64	87	36	25	96	4.7	.00
3	6.1	6.8	11	16	23	56	88	36	33	83	4.0	.00
4	6.2	6.9	14	15	23	50	77	35	34	75	3.5	.00
5	6.1	6.5	18	16	23	44	66	35	31	58	2.9	.00
6	5.6	6.7	18	16	23	40	59	35	26	50	2.4	.00
7	5.3	6.9	17	17	23	42	54	33	22	41	2.0	.00
8	6.5	7.0	15	17	23	48	49	31	18	36	1.7	.00
9	5.2	7.2	16	17	23	43	46	30	17	32	1.6	.00
10	5.4	7.2	16	18	23	41	46	28	20	28	1.5	.00
11	5.0	7.4	16	17	24	37	44	26	49	24	1.4	.00
12	4.8	7.3	15	18	23	34	44	24	38	24	1.3	.00
13	4.1	7.4	14	17	23	32	44	22	39	25	1.1	.00
14	3.8	8.2	14	16	23	32	45	21	36	22	.88	.00
15	3.6	8.1	14	17	23	31	57	21	32	20	.86	.00
16	3.6	8.3	14	17	23	32	70	20	28	18	.66	.00
17	3.3	9.0	14	18	23	33	59	19	36	16	.60	.00
18	3.3	8.6	14	18	24	33	53	18	40	13	.59	.00
19	3.6	8.3	15	18	23	33	48	16	43	12	.56	.00
20	3.7	9.4	15	18	23	33	44	16	40	10	.40	.00
21	4.3	9.8	16	18	24	32	41	16	38	9.4	.28	.00
22	5.1	9.5	15	18	26	53	39	16	35	9.1	.24	.00
23	5.3	10	15	19	27	286	39	14	32	9.0	.21	.00
24	5.7	9.9	15	19	26	207	38	13	31	8.0	.19	.00
25	5.9	9.9	15	19	40	166	38	12	29	7.7	.14	.00
26	5.5	10	16	20	39	120	38	15	61	6.4	.08	.00
27	5.0	11	16	21	35	92	39	15	59	5.8	.02	.00
28	4.9	11	15	22	31	76	35	13	157	6.4	.00	.00
29	5.0	10	16	e22	30	66	35	12	155	6.1	.00	.00
30	5.3	10	16	e21	---	59	36	10	135	5.8	.00	.00
31	5.8	---	15	23	---	56	---	9.3	---	5.8	.00	---
TOTAL	155.9	250.9	462	559	740	1997	1534	683.3	1348.2	876.5	39.11	0.00
MEAN	5.03	8.36	14.9	18.0	25.5	64.4	51.1	22.0	44.9	28.3	1.26	.000
MAX	6.7	11	18	23	40	286	88	36	157	114	5.3	.00
MIN	3.3	6.2	11	15	23	26	35	9.3	9.2	5.8	.00	.00
AC-FT	309	498	916	1110	1470	3960	3040	1360	2670	1740	78	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

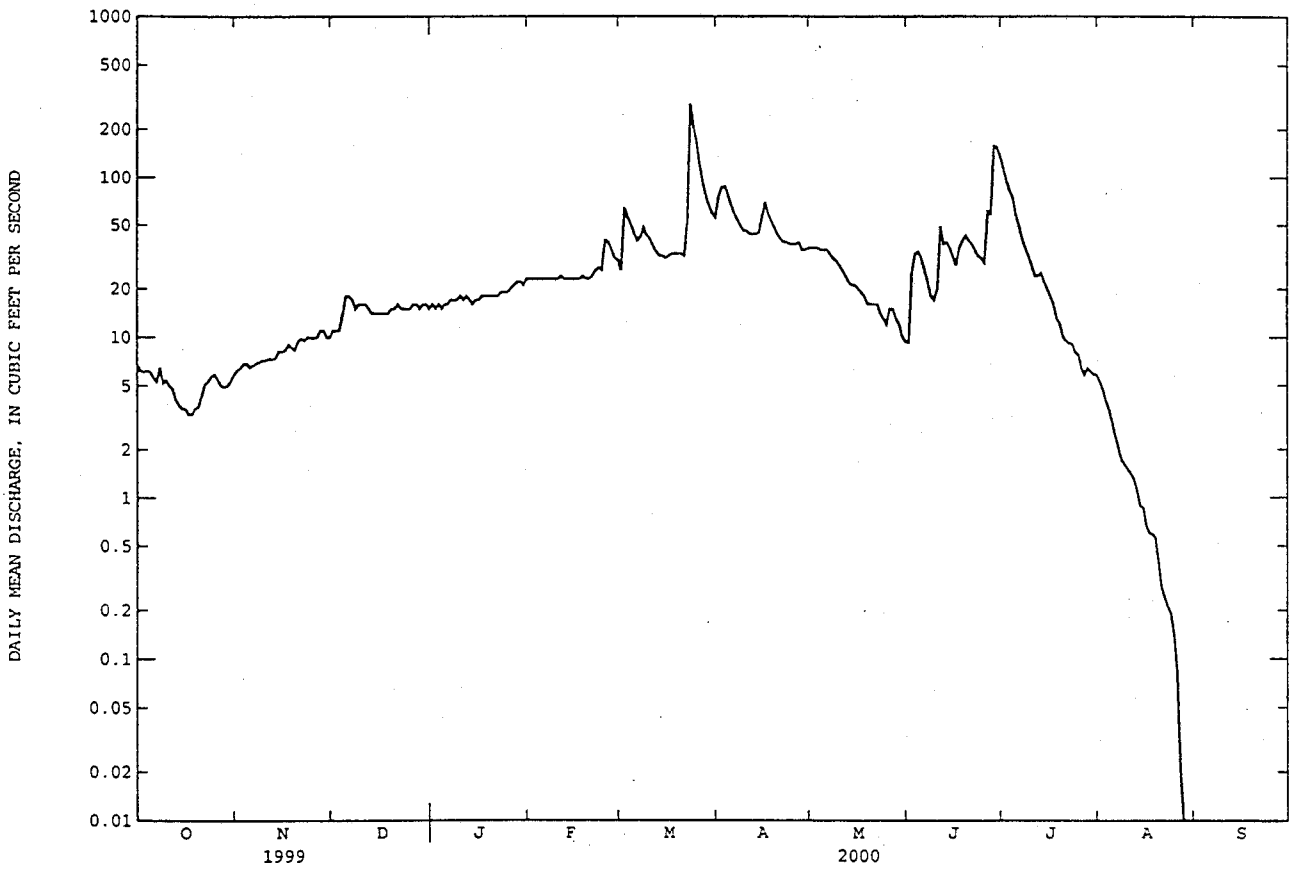
MEAN	8.42	9.42	11.7	14.7	18.9	26.6	33.1	50.1	41.0	8.74	4.72	5.81
MAX	72.9	64.3	67.7	80.7	69.4	138	146	348	203	61.7	32.8	44.7
(WY)	1987	1987	1998	1998	1998	1998	1997	1977	1982	1982	1995	1997
MIN	.000	.000	.000	.026	1.50	2.22	1.08	.000	.005	.000	.000	.000
(WY)	1964	1964	1964	1973	1973	1967	1971	1971	1970	1964	1963	1964

e Estimated

07316500 WASHITA RIVER NEAR CHEYENNE, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	11146.12		8645.91			
ANNUAL MEAN	30.5		23.6		[a]19.4	
HIGHEST ANNUAL MEAN					64.0	1997
LOWEST ANNUAL MEAN					2.60	1972
HIGHEST DAILY MEAN	245	Apr 25	286	Mar 23	1560	Apr 23 1990
LOWEST DAILY MEAN	.62	Sep 1	.00	Aug 28-Sep 30	.00	most years
ANNUAL SEVEN-DAY MINIMUM	.81	Aug 28	.00	Aug 28	.00	Oct 1 1961
INSTANTANEOUS PEAK FLOW			392	Mar 23	[b]7250	Apr 22 1990
INSTANTANEOUS PEAK STAGE			10.96	Mar 23	[c]16.60	Apr 22 1990
ANNUAL RUNOFF (AC-FT)	22110		17150		14060	
10 PERCENT EXCEEDS	61		49		42	
50 PERCENT EXCEEDS	21		16		7.4	
90 PERCENT EXCEEDS	3.3		.12		.00	

[a]Prior to regulation, water years 1938-60, 41.7 ft^3/s.
[b]Maximum discharge for period of record 69,800 ft^3/s, Apr. 29, 1954, from rating curve extended above 27,000 ft^3/s on basis of contracted opening.
[c]Maximum gage-height for period of record, 20.24 ft, Apr. 29, 1954.



07331000 WASHITA RIVER NEAR DICKSON, OK

LOCATION.--Lat 34°14'00", long 96°58'32", in SW $^1/_4$ SE $^1/_4$ sec.3, T.4 S., R.3 E., Carter County, Hydrologic Unit 11130303, on right bank on downstream side of bridge on U.S. Highway 177, 1.3 mi downstream from Caddo Creek, 3.2 mi north of Dickson, 12.0 mi northeast of Ardmore, and at mile 63.4.

DRAINAGE AREA.--7,202 mi^2.

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to Oct. 1, 1979, published as Washita River near Durwood.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1281: 1935 (M).

GAGE.--Water-stage recorder. Datum of gage is 650.57 ft above sea level (levels by U.S. Army Corps of Engineers). Prior to Feb. 16, 1939, nonrecording gage, at same site and datum. Dec. 15, 1950, to Feb. 19, 1952, nonrecording gage, at site 500 ft upstream, at same datum. Apr. 24, 1975, to May 8, 1986, water-stage recorder, at site 500 ft upstream, at same datum.

REMARKS.--Records poor. Some diversions for irrigation upstream from station. Flow regulated by Fort Cobb Reservoir (station 07325900) since March 1959; by Foss Reservoir (station 07324300) since February 1961; and by numerous flood-retarding structures. U.S. Army Corps of Engineers satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	243	641	e230	491	420	654	4030	3440	744	5190	342	e85
2	e228	734	237	481	416	654	3780	7370	662	5680	316	e84
3	e218	478	250	670	418	756	3370	8190	695	5900	304	e84
4	e211	368	260	619	412	827	3140	8330	3230	4890	291	e86
5	e196	346	308	749	394	752	4070	8030	5740	3690	e283	e85
6	e187	318	436	569	391	645	3830	5940	2870	3050	e255	82
7	e189	327	411	513	384	636	2920	4780	2510	2740	e238	e81
8	e193	342	364	582	376	685	2480	4020	2130	2570	e220	e80
9	e191	300	566	565	368	675	e2370	3540	1720	2350	e203	e80
10	e192	268	1220	533	364	749	e2200	3070	1660	2180	e193	e79
11	e194	251	1660	509	357	798	2300	2770	1540	1950	e185	e81
12	e198	e235	1700	488	343	868	2770	2740	1640	1810	e177	85
13	e194	e232	2200	469	358	838	2720	2570	1290	1710	e170	e82
14	188	e227	2000	444	459	868	2330	2330	1090	1540	e165	e79
15	e180	221	1960	428	489	900	2150	2070	1030	1310	e159	e76
16	e177	e220	1680	428	497	752	2230	1790	860	1160	156	e76
17	e169	e220	1420	423	499	704	2430	1720	840	1070	146	e74
18	e163	e220	1220	420	501	674	e2230	1590	802	986	e141	e72
19	e159	e220	1050	412	491	647	e2030	1440	1750	919	e134	e70
20	e155	e220	941	403	452	703	1920	1150	1290	859	e129	68
21	e151	e221	834	393	414	878	2030	878	2650	701	e123	62
22	e149	e220	758	391	395	1930	1990	710	6180	681	e121	60
23	e147	e219	705	392	518	e2500	1760	598	4280	649	e117	63
24	e145	e219	661	383	571	e2100	1540	532	3110	564	e112	82
25	e150	e219	625	376	757	e2200	1370	485	2600	536	e108	85
26	e160	e219	598	371	754	3030	1170	474	2520	473	e104	82
27	166	e219	572	406	719	4470	1130	467	3720	474	e102	76
28	e180	e219	549	434	686	5180	1140	562	2380	558	98	155
29	e202	e219	529	428	680	5470	1140	659	4000	447	e94	227
30	235	e220	516	420	---	4680	1130	1070	6170	416	e91	190
31	355	---	506	418	---	4650	---	983	---	381	e86	---
TOTAL	5865	8582	26966	14608	13883	51873	69700	84298	71703	57434	5363	2671
MEAN	189	286	870	471	479	1673	2323	2719	2390	1853	173	89.0
MAX	355	734	2200	749	757	5470	4070	8330	6180	5900	342	227
MIN	145	219	230	371	343	636	1130	467	662	381	86	60
AC-FT	11630	17020	53490	28970	27540	102900	138200	167200	142200	113900	10640	5300

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

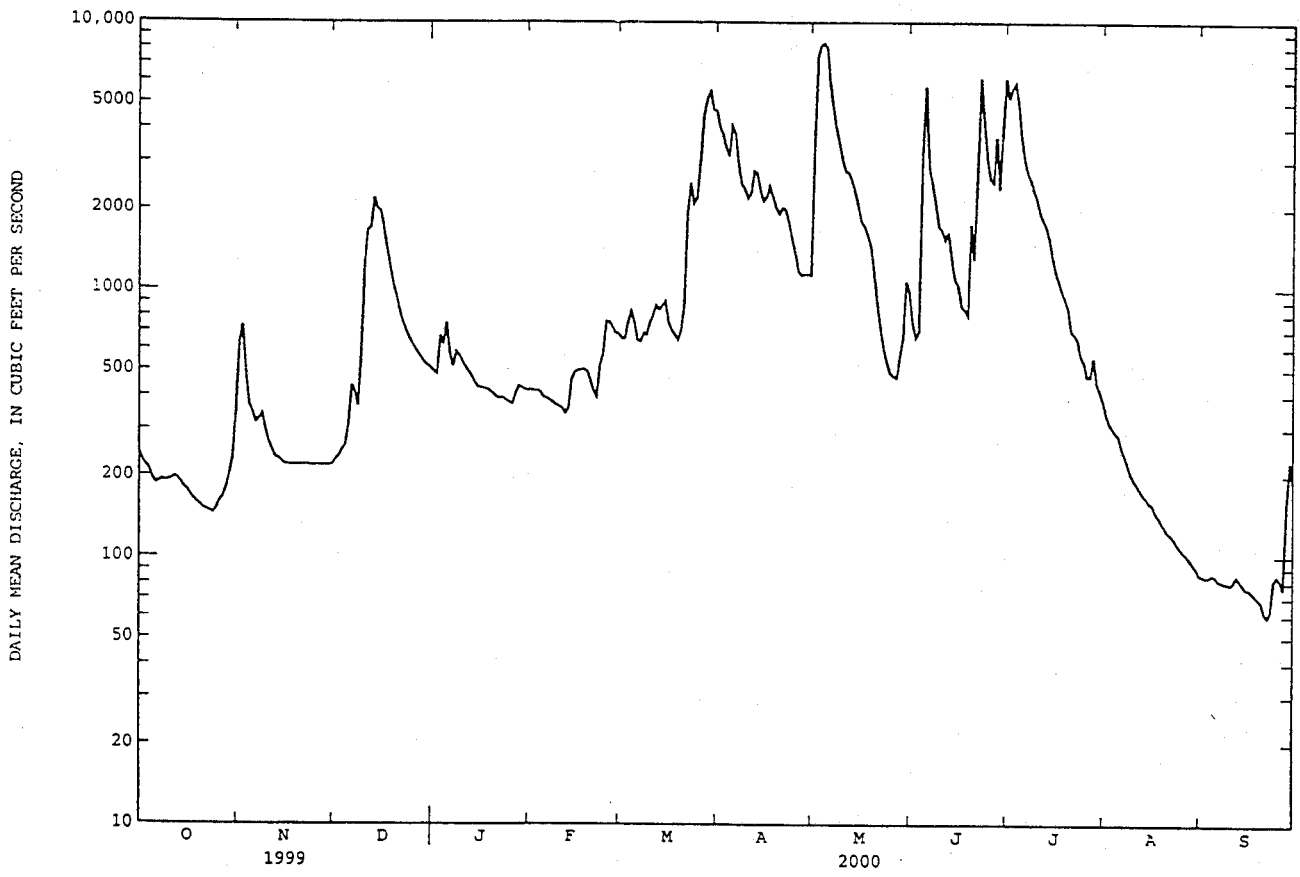
MEAN	1486	1586	1396	1190	1455	2443	2461	4139	3564	1033	610	1130
MAX	8274	5879	9324	6061	5980	10890	15940	18720	14090	4042	3048	5236
(WY)	1987	1987	1992	1998	1993	1990	1990	1993	1995	1987	1995	1991
MIN	30.4	73.5	103	103	93.6	78.4	210	249	158	31.4	12.8	42.1
(WY)	1964	1964	1967	1967	1967	1967	1971	1971	1966	1964	1972	1972

e Estimated

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	510253		412946			
ANNUAL MEAN	1398		1128		[a]1874	
HIGHEST ANNUAL MEAN					5644	1987
LOWEST ANNUAL MEAN					340	1964
HIGHEST DAILY MEAN	23300	Apr 27	8330	May 4	94400	May 3 1990
LOWEST DAILY MEAN	140	Sep 2	60	Sep 22	[b].10	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	143	Aug 29	67	Sep 17	.30	Aug 8 1964
INSTANTANEOUS PEAK FLOW			10500	Jun 4	[c]118000	May 3 1990
INSTANTANEOUS PEAK STAGE			17.92	Jun 4	45.24	May 30 1987
ANNUAL RUNOFF (AC-FT)	1012000		819100		1358000	
10 PERCENT EXCEEDS	2930		2950		4250	
50 PERCENT EXCEEDS	767		514		714	
90 PERCENT EXCEEDS	191		120		140	

[a]Prior to regulation, water years 1929-58, 1,573 ft^3/s.
[b]No flow Aug. 28, Sept. 14 to Oct. 1, 7-12, 1956.
[c]Gage height 44.26 ft.



07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX

LOCATION.--Lat 34°57'27", long 100°13'14", Collingsworth County, Hydrologic Unit 11120202, near center of stream at downstream side of bridge on U.S. Highway 83, 4 mi downstream from Fort Worth and Denver (Burlington) Railway Co. bridge, 4.5 mi south of Lutie, and 7.2 mi north of Wellington.

DRAINAGE AREA.--1,222 mi^2, of which 209 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,941.41 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1967, at least 10% of contributing drainage area has been regulated by Greenbelt Lake (station 07299840, conservation pool storage 58,200 acre-ft). There are several small diversions upstream from gage for irrigation.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--14 years (water years 1953-66) prior to completion of Greenbelt Lake, 72.6 ft^3/s (52,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1953-66).--Maximum discharge, 146,000 ft^3/s May 16, 1957 (gage height, 19.00 ft), from rating curve extended above 11,000 ft^3/s on basis of slope-area measurement of 63,400 ft^3/s; minimum, 0.1 ft^3/s Jun 19, 1952.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

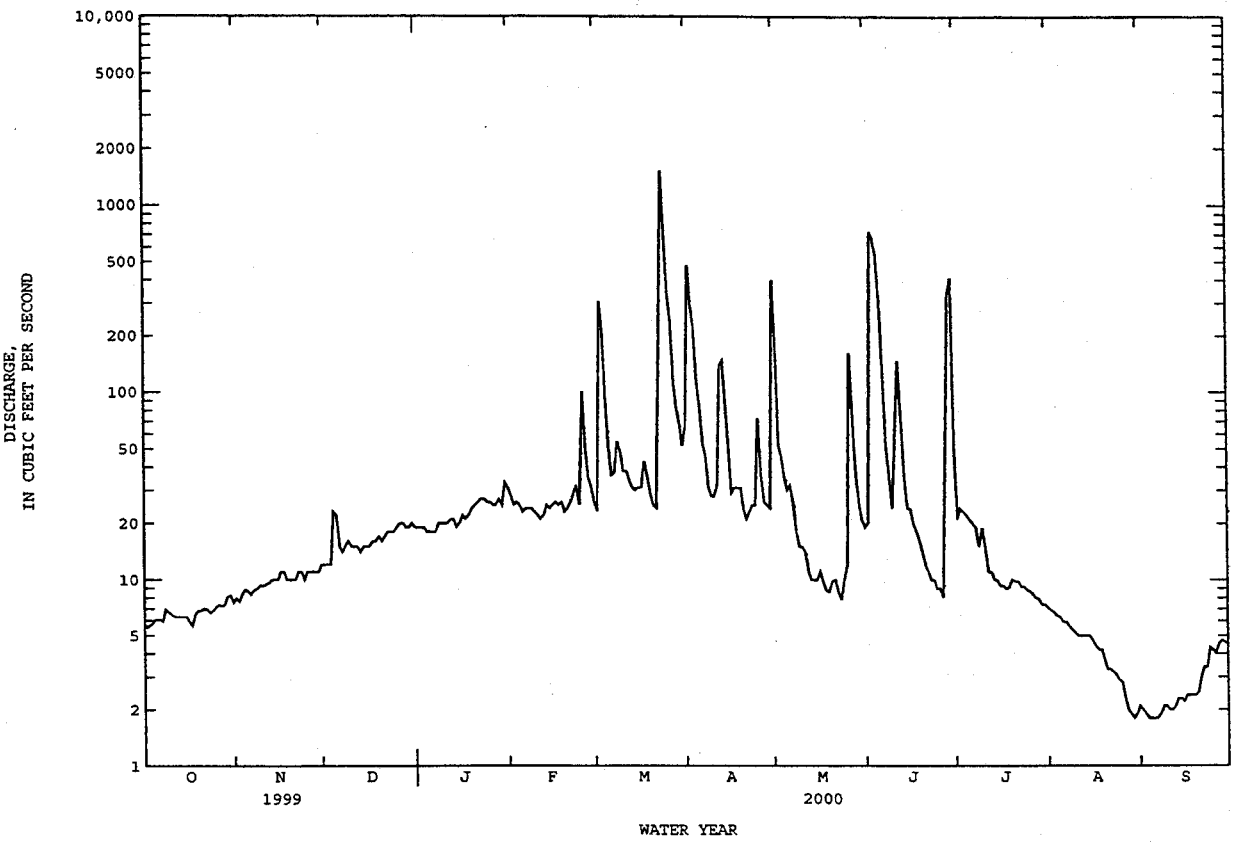
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	7.9	12	19	28	23	481	181	20	21	6.9	2.0
2	5.5	7.6	12	19	25	307	292	53	728	24	6.7	1.9
3	5.7	8.4	12	19	26	212	229	45	669	e23	6.4	1.8
4	5.8	8.8	23	18	25	91	116	35	543	e22	6.3	1.8
5	6.1	8.6	22	18	23	52	84	30	304	e21	5.9	1.8
6	6.1	8.3	15	18	24	36	54	32	107	e20	5.9	1.8
7	5.9	8.8	14	18	24	37	45	26	53	e19	5.6	1.9
8	6.9	8.9	15	20	24	55	31	18	36	15	5.4	2.1
9	6.7	9.3	16	20	23	48	28	15	24	19	5.2	2.1
10	6.5	9.2	15	20	22	38	28	15	60	15	5.0	2.0
11	6.3	9.4	15	20	21	38	32	14	148	11	5.0	2.0
12	6.3	9.6	15	21	22	34	138	11	75	11	5.0	2.1
13	6.3	10	14	21	25	31	147	10	35	10	5.0	2.3
14	6.3	10	15	19	24	30	82	10	24	10	5.0	2.3
15	6.3	10	15	20	25	31	47	10	24	9.3	e4.7	2.2
16	5.9	11	15	22	26	31	29	11	e20	9.3	e4.4	2.4
17	5.6	11	16	21	25	43	31	9.6	e18	8.9	4.2	2.4
18	6.5	10	16	22	26	36	31	8.7	e16	9.1	4.2	2.4
19	6.8	10	17	24	23	29	31	8.6	e14	10	3.7	2.4
20	6.8	10	16	25	24	25	24	9.8	e12	9.8	3.3	2.5
21	7.0	10	17	26	26	24	21	10	e11	9.8	3.3	3.0
22	6.9	11	18	27	29	158	23	8.6	e10	9.2	3.2	3.4
23	6.6	11	18	27	32	1530	25	7.8	e10	9.2	3.1	3.4
24	6.8	10	18	26	25	680	25	10	e9.0	8.8	2.9	4.3
25	7.1	11	19	26	101	331	73	12	e9.0	8.7	2.8	4.2
26	7.3	11	20	25	51	244	36	163	e8.0	8.4	2.3	4.0
27	7.2	11	20	25	35	115	e26	82	28	8.0	2.0	4.5
28	7.3	11	19	27	31	82	e25	38	338	7.9	1.9	4.7
29	8.1	11	19	25	26	67	e24	26	412	7.4	1.8	4.6
30	8.2	12	20	33	---	52	400	21	49	7.4	1.9	4.5
31	7.5	---	19	31	---	65	---	19	---	7.1	2.1	---
TOTAL	204.0	295.8	517	702	841	4575	2658	950.1	3814.0	389.3	131.1	82.8
MEAN	6.58	9.86	16.7	22.6	29.0	148	88.6	30.6	127	12.6	4.23	2.76
MAX	8.2	12	23	33	101	1530	481	181	728	24	6.9	4.7
MIN	5.5	7.6	12	18	21	23	21	7.8	8.0	7.1	1.8	1.8
AC-FT	405	587	1030	1390	1670	9070	5270	1880	7570	772	260	164

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2000z, BY WATER YEAR (WY)

MEAN	31.1	28.5	28.3	31.2	38.1	47.4	94.2	109	149	29.8	28.0	30.7
MAX	279	213	92.4	86.0	117	165	1218	468	1006	155	301	113
(WY)	1987	1987	1992	1993	1998	1998	1997	1977	1995	1993	1968	1981
MIN	4.28	8.03	3.59	10.5	10.9	8.15	6.10	2.61	8.17	2.65	1.68	2.22
(WY)	1981	1981	1984	1971	1967	1972	1971	1971	1970	1970	1970	1984

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1967 - 2000z	
ANNUAL TOTAL	13545.3		15160.1			
ANNUAL MEAN	37.1		41.4		53.6	
HIGHEST ANNUAL MEAN					165	1997
LOWEST ANNUAL MEAN					10.5	1971
HIGHEST DAILY MEAN	667	May 2	1530	Mar 23	17500	Apr 3 1997
LOWEST DAILY MEAN	2.8	Jul 29	1.8	Aug 29	.40	Jun 2 1985
ANNUAL SEVEN-DAY MINIMUM	2.9	Aug 27	1.9	Sep 1	.73	May 27 1985
INSTANTANEOUS PEAK FLOW			2490	Mar 23	81100	Apr 3 1997
INSTANTANEOUS PEAK STAGE			5.29	Mar 23	17.10	Apr 3 1997
ANNUAL RUNOFF (AC-FT)	26870		30070		38850	
10 PERCENT EXCEEDS	80		56		72	
50 PERCENT EXCEEDS	13		16		17	
90 PERCENT EXCEEDS	3.7		3.9		4.2	

e Estimated
z Period of regulated streamflow.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07301410 SWEETWATER CREEK NEAR KELTON, TX

LOCATION.--Lat 35°28'23", long 100°07'14", Wheeler County, Hydrologic Unit 11120302, near center of stream at downstream side of bridge on Farm Road 592, 5 mi north of Kelton, 8 mi upstream from Texas-Oklahoma State line, and 8.5 mi northeast of Wheeler.

DRAINAGE AREA.--287 mi^2, of which 20 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Nov 1961 to current year.
Water-quality records.--Chemical data: Oct 1969 to Jun 1985.

GAGE.--Water-stage recorder. Datum of gage is 2,230 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. There are many small diversions upstream from the station for ranch use. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1882, about 20 ft May 16, 1957, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.5	9.8	9.3	8.4	8.0	6.9	42	8.8	3.6	44	e2.4	.46
2	2.5	9.7	9.7	8.4	7.7	14	45	8.9	5.5	36	e2.2	.44
3	2.5	9.9	9.4	8.4	7.4	20	31	8.6	7.9	31	e2.1	.43
4	2.6	10	11	8.2	7.3	12	21	8.3	11	26	e2.0	.41
5	2.6	10	12	8.2	7.5	9.3	15	8.1	7.2	22	e1.9	.41
6	2.7	9.9	11	8.4	7.4	8.5	11	8.0	5.9	19	e1.8	.40
7	2.7	9.6	10	8.5	7.3	8.7	9.4	7.5	5.0	16	e1.7	.38
8	2.6	9.4	9.7	8.7	7.3	11	8.9	6.9	4.3	14	e1.7	.39
9	2.6	9.4	11	8.6	7.3	9.6	8.8	6.7	4.0	13	e1.6	.39
10	2.6	8.9	9.8	8.7	7.3	8.8	8.7	6.4	7.6	12	1.5	.38
11	2.6	8.5	9.5	8.6	7.4	8.5	8.6	6.1	51	11	1.3	.37
12	2.6	8.4	9.8	8.6	7.3	8.5	9.5	5.5	69	9.4	1.3	.34
13	2.6	8.3	9.5	8.5	7.4	8.3	9.5	5.4	52	9.2	1.2	.37
14	2.6	8.2	9.3	8.4	7.3	8.2	9.3	5.2	22	8.8	1.0	.38
15	2.6	8.1	9.0	8.4	7.4	8.1	13	5.2	9.9	e8.2	.98	.41
16	2.6	8.8	9.0	8.5	7.2	8.2	33	5.1	7.8	e7.7	.93	.43
17	2.5	7.7	9.4	8.7	7.3	8.7	23	5.2	44	e7.2	.88	.43
18	2.7	7.1	9.4	8.7	7.2	8.8	13	4.9	36	e6.9	.88	.44
19	3.3	7.7	9.8	8.7	7.0	8.5	10	5.2	31	e6.4	.85	.46
20	6.5	8.4	9.4	8.4	7.1	8.3	8.6	4.8	28	e5.9	.77	.47
21	7.9	8.5	9.4	8.2	7.4	8.2	8.1	4.9	14	e5.4	.74	.52
22	9.3	8.1	9.4	8.2	7.5	16	8.1	4.8	9.6	e4.9	.70	.56
23	9.5	8.6	9.2	8.1	8.0	118	8.2	4.6	8.5	e4.5	.69	.60
24	10	8.6	8.9	7.9	7.7	89	8.1	4.3	7.7	e4.2	.68	.69
25	10	8.7	8.8	7.9	15	44	12	4.2	7.1	e3.7	.65	.74
26	8.9	8.7	8.8	7.8	9.6	34	15	4.7	51	e3.4	.63	.77
27	9.2	8.7	8.7	8.1	8.1	25	13	4.4	61	e3.2	.57	.85
28	7.2	8.6	8.7	8.3	7.6	19	9.2	4.2	136	e3.0	.55	.88
29	8.1	8.7	8.8	8.2	7.2	15	8.6	3.9	161	e2.8	.53	.89
30	9.3	8.7	8.5	8.1	---	13	8.6	3.9	82	e2.7	.50	.88
31	9.6	---	8.3	8.1	---	13	---	3.8	---	e2.5	.48	---
TOTAL	155.5	263.7	294.5	258.9	225.2	587.1	437.2	178.5	950.6	354.0	35.71	15.57
MEAN	5.02	8.79	9.50	8.35	7.77	18.9	14.6	5.76	31.7	11.4	1.15	.52
MAX	10	10	12	8.7	15	118	45	8.9	161	44	2.4	.89
MIN	2.5	7.1	8.3	7.8	7.0	6.9	8.1	3.8	3.6	2.5	.48	.34
AC-FT	308	523	584	514	447	1160	867	354	1890	702	71	31

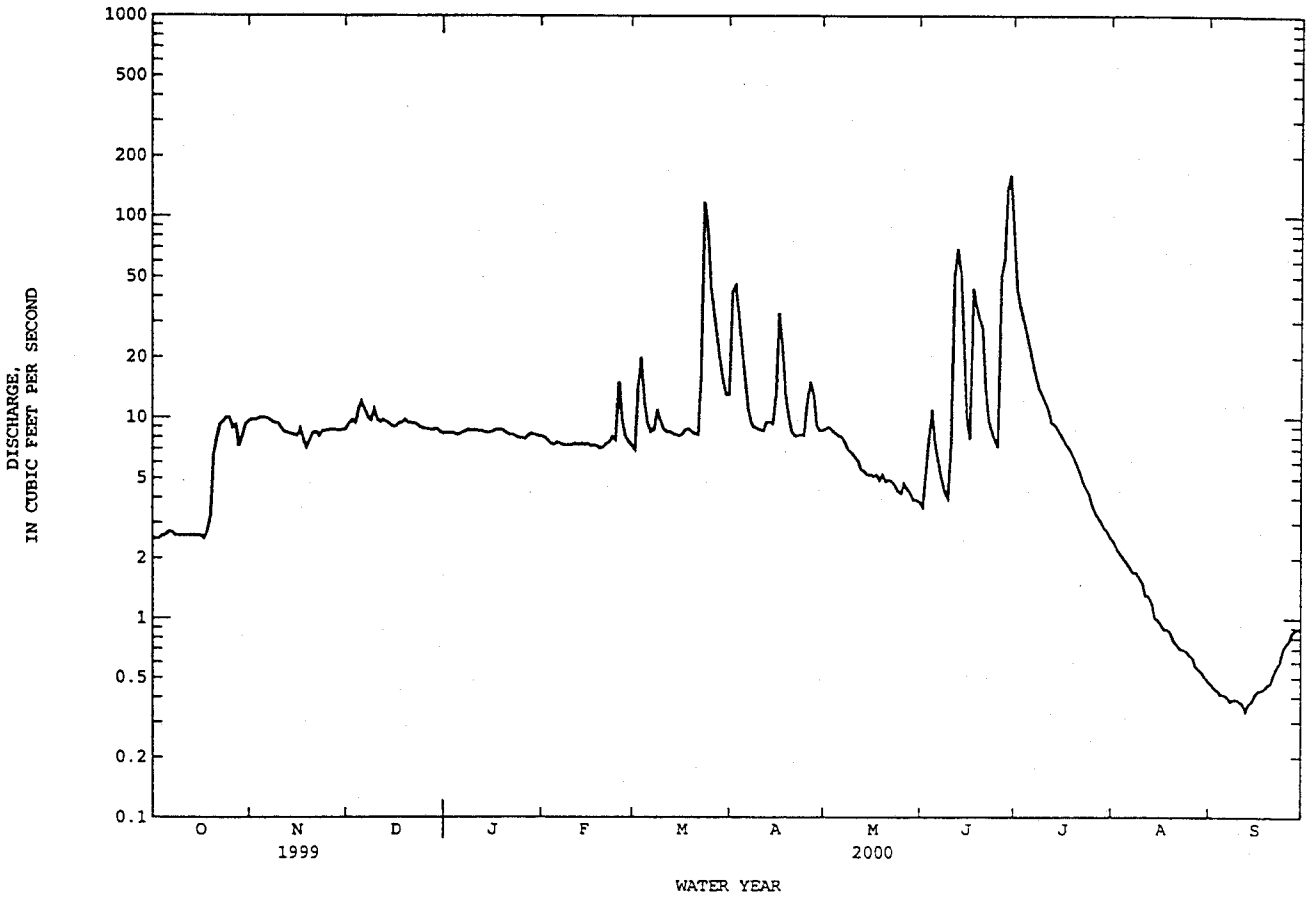
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

MEAN	8.22	10.5	12.1	13.1	15.9	18.6	22.3	26.1	23.3	6.19	5.34	7.40
MAX	42.1	34.5	27.1	27.6	29.6	42.2	100	196	86.3	32.3	42.7	40.9
(WY)	1987	1975	1998	1998	1987	1998	1997	1977	1965	1967	1963	1988
MIN	.30	1.05	3.11	5.78	6.82	9.09	8.72	3.38	2.80	.44	.000	.027
(WY)	1985	1985	1984	1995	1995	1977	1971	1971	1966	1974	1964	1984

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	4883.22		3756.48			
ANNUAL MEAN	13.4		10.3		13.9	
HIGHEST ANNUAL MEAN					33.5	1997
LOWEST ANNUAL MEAN					4.89	1984
HIGHEST DAILY MEAN	123	May 2	161	Jun 29	1820	May 21 1977
LOWEST DAILY MEAN	.92	Sep 13	.34	Sep 12	.00	Jul 29 1964
ANNUAL SEVEN-DAY MINIMUM	.94	Sep 8	.37	Sep 7	.00	Jul 29 1964
INSTANTANEOUS PEAK FLOW			208	Jun 29	2890	May 20 1977
INSTANTANEOUS PEAK STAGE			10.20	Jun 29	15.73	May 20 1977
INSTANTANEOUS LOW FLOW					.00	Jul 29 1964
ANNUAL RUNOFF (AC-FT)	9690		7450		10080	
10 PERCENT EXCEEDS	26		15		23	
50 PERCENT EXCEEDS	9.4		8.1		10	
90 PERCENT EXCEEDS	2.1		.76		.89	

e Estimated

07301410 SWEETWATER CREEK NEAR KELTON, TX--Continued



07308500 RED RIVER NEAR BURKBURNETT, TX

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., Hydrologic Unit 11130102, on downstream guardrail of downstream bridge on U.S. Highways 277 and 281, 2.5 mi northeast of Burkburnett, and at mile 933.

DRAINAGE AREA.--20,570 mi^2, of which 5,936 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1924 to Aug 1925 (monthly discharge only), Dec 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft above sea level. Jul 11, 1924, to Aug 31, 1925, nonrecording gage at site 1,000 ft downstream at same datum. Dec 16, 1959, to Jan 11, 1960, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are many small diversions upstream from station for irrigation, but total amounts are unknown. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 3, 1957, reached a stage of 13.54 ft, from floodmarks. According to local residents, higher stages occurred in 1891 and Jun 1941.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 9,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 25	0800	20,300	8.26	Jun 4	1330	14,900	7.65
May 2	0230	22,800	8.52	Jun 30	1800	9,690	6.90

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	63	357	98	112	112	351	2020	5220	e165	5700	237	105
2	60	433	99	109	113	325	1820	16300	178	3690	240	97
3	56	345	95	132	118	243	2020	4130	246	3590	e230	93
4	75	263	116	129	115	250	3490	2330	9470	2930	215	94
5	123	219	128	120	115	337	2160	1760	5190	2190	199	100
6	118	179	129	112	118	384	1180	e956	2330	2020	188	119
7	116	152	131	115	117	442	829	e656	1490	1020	177	112
8	108	136	140	137	116	443	615	e518	1060	814	156	96
9	121	121	211	132	117	403	534	e387	803	752	148	88
10	106	109	877	124	118	375	464	e300	586	685	143	82
11	423	108	2540	119	112	357	427	e235	458	659	149	87
12	449	107	1410	113	115	370	515	e204	721	583	155	80
13	352	102	826	107	115	350	420	e184	1500	582	153	71
14	267	100	506	104	116	323	436	e165	825	565	144	64
15	192	97	349	101	118	307	457	e147	598	570	136	54
16	136	94	271	100	116	375	500	e131	461	598	133	51
17	107	93	215	100	118	362	492	e123	486	689	125	e50
18	97	91	178	99	112	303	541	e120	861	643	122	e49
19	90	83	163	98	107	294	591	e118	1430	508	114	e40
20	83	82	144	93	109	298	524	e116	1280	433	106	e34
21	75	81	133	96	108	279	484	e115	2260	367	102	e33
22	64	83	127	94	109	279	464	e115	1700	319	101	e32
23	63	82	122	89	136	655	458	e114	1990	295	103	e30
24	62	83	119	88	154	12200	456	e118	981	268	119	e35
25	59	84	118	85	348	18500	459	e120	620	262	127	e40
26	60	86	117	84	330	9130	461	e131	472	257	117	e50
27	61	87	115	92	298	3970	447	e152	417	244	107	134
28	61	91	114	99	378	3000	429	e131	540	239	101	109
29	62	92	116	101	388	2610	415	e215	990	251	104	74
30	83	96	112	108	---	2140	412	e241	7390	240	108	57
31	162	---	108	114	---	1740	---	e175	---	238	111	---
TOTAL	3954	4136	9927	3306	4546	61395	24520	35727	47498	32201	4470	2160
MEAN	128	138	320	107	157	1980	817	1152	1583	1039	144	72.0
MAX	449	433	2540	137	388	18500	3490	16300	9470	5700	240	134
MIN	56	81	95	84	107	243	412	114	165	238	101	30
AC-FT	7840	8200	19690	6560	9020	121800	48640	70860	94210	63870	8870	4280

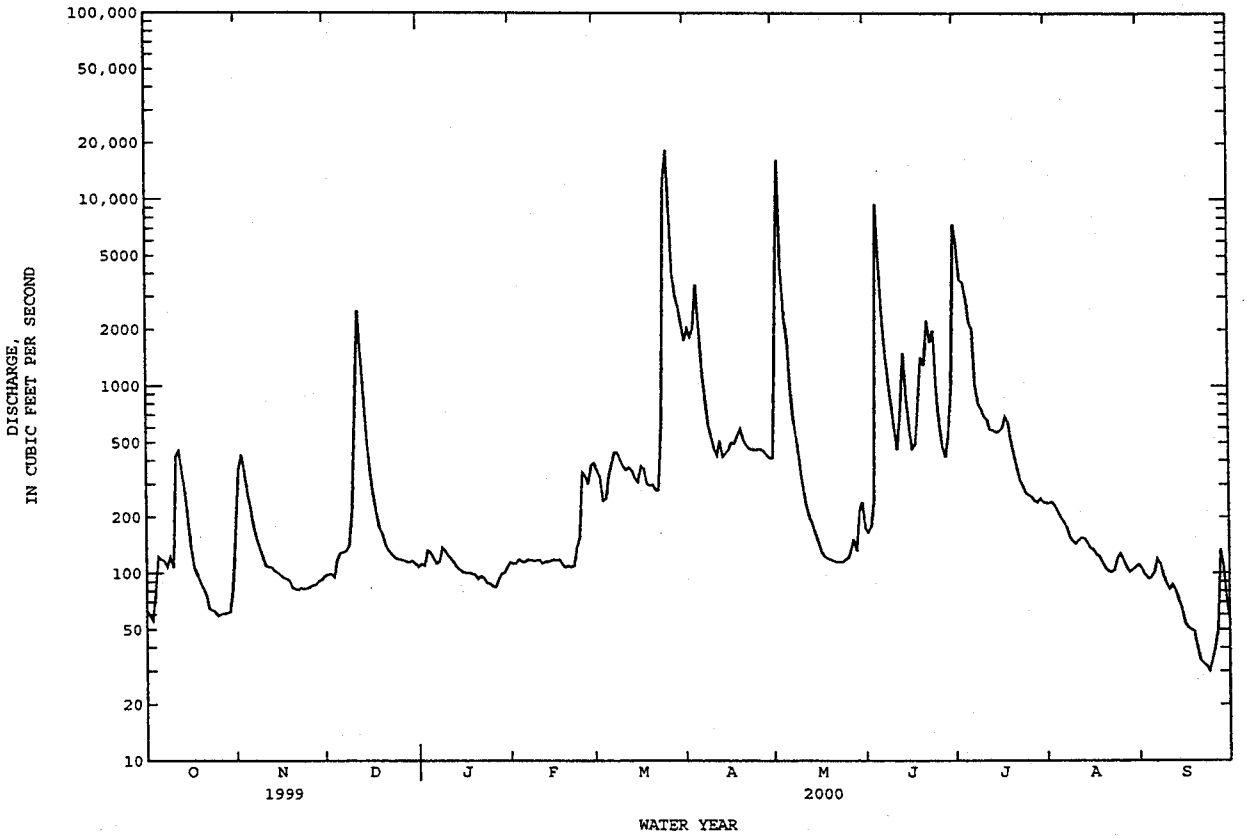
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000, BY WATER YEAR (WY)

MEAN	1509	681	581	503	718	986	1129	2371	3454	889	886	1361
MAX	14900	4960	4435	2293	4986	10050	13040	12470	24780	5947	10540	6381
(WY)	1987	1987	1992	1998	1998	1998	1997	1977	1995	1975	1995	1996
MIN	21.9	.96	2.98	5.53	8.37	7.97	.15	11.4	148	.058	1.29	32.2
(WY)	1971	1971	1971	1971	1971	1971	1971	1971	1970	1970	1964	1983

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	347414		233840			
ANNUAL MEAN	952		639		1260	
HIGHEST ANNUAL MEAN					4424	1987
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	17100	May 29	18500	Mar 25	144000	Jun 6 1995
LOWEST DAILY MEAN	56	Oct 3	30	Sep 23	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	61	Oct 23	35	Sep 19	.00	Jul 19 1964
INSTANTANEOUS PEAK FLOW			22800	May 2	174000	Jun 6 1995
INSTANTANEOUS PEAK STAGE			8.52	May 2	16.90	Oct 21 1983
INSTANTANEOUS LOW FLOW					.00	Jul 19 1964
ANNUAL RUNOFF (AC-FT)	689100		463800		912700	
10 PERCENT EXCEEDS	2200		1320		2500	
50 PERCENT EXCEEDS	365		146		310	
90 PERCENT EXCEEDS	95		83		54	

e Estimated



07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW ¼ sec.36, T.9 S., R.1 E., Love County, OK, Hydrologic Unit 11130201, on downstream right bank at end of bridge on Interstate 35, 0.2 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi downstream from Fish Creek, 4.5 mi southwest of Thackerville, OK, 7.0 mi north of Gainesville, and at mile 791.5.

DRAINAGE AREA.--30,782 mi^2 of which 5,936 mi^2 probably is noncontributing.

PERIOD OF RECORD.--May 1936 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 627.91 ft above sea level. Prior to Jan 17, 1939, and Feb 13, 1965 to Nov 14, 1966, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow slightly regulated by Lake Kemp (station 07312000 in Texas), since 1943 by Lake Altus (station 07302500 in Oklahoma), since 1946 by Lake Kickapoo (station 07314000 in Texas), since 1967 by Lake Arrowhead (station 07314800 in Texas) and Moss Lake (station 07315950 in Texas). U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 24,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	269	294	144	376	375	520	3650	798	615	2110	356	138
2	266	298	147	377	371	499	e3330	780	517	3720	353	132
3	261	298	168	402	357	482	e2790	4510	628	8130	339	126
4	256	376	162	404	345	561	e2500	11900	581	5800	318	122
5	254	570	156	390	319	519	e2380	7300	608	4970	302	119
6	253	753	164	379	304	459	5010	5250	2320	4910	294	114
7	252	677	167	373	307	427	e4810	4220	6810	4020	284	112
8	257	532	174	422	301	441	e3450	3420	4160	3140	271	111
9	265	418	186	457	288	452	e2880	2790	3150	3130	259	109
10	264	358	207	439	300	511	e2370	2390	2530	2610	251	107
11	276	319	229	388	296	502	e2080	2160	2080	2160	241	104
12	274	282	283	377	277	500	1960	1940	1720	1910	231	107
13	311	254	928	413	276	507	1980	1730	1560	1720	219	117
14	374	239	3180	391	271	499	1820	1560	1250	1550	209	112
15	295	222	2580	368	262	e486	1750	1410	1070	1400	202	106
16	446	206	1850	373	256	475	1760	1280	1650	1290	196	101
17	510	194	1370	360	247	466	1580	1180	1850	1200	191	100
18	457	184	1080	354	250	429	1470	1110	1470	1110	190	103
19	397	184	899	356	245	407	1480	1040	1290	901	183	115
20	325	173	768	346	245	371	1580	1010	1160	804	177	111
21	263	160	666	345	302	381	1520	961	1470	781	173	107
22	228	158	597	344	337	459	1460	909	2950	767	171	108
23	200	175	550	344	407	497	1480	853	3540	684	169	106
24	180	157	509	329	412	512	1340	810	4090	603	167	123
25	169	152	478	325	354	2410	1130	749	3210	535	161	115
26	158	144	454	327	336	18400	1000	683	2930	484	154	108
27	149	146	437	359	349	12900	933	827	2260	500	151	109
28	141	151	420	397	362	8930	884	929	1700	462	151	112
29	140	153	408	416	405	6930	811	732	1340	397	145	109
30	176	148	398	405	---	5250	773	611	1220	380	143	106
31	256	---	387	386	---	4220	---	595	---	365	142	---
TOTAL	8322	8375	20146	11722	9156	70402	61961	66437	61729	62543	6793	3369
MEAN	268	279	650	378	316	2271	2065	2143	2058	2018	219	112
MAX	510	753	3180	457	412	18400	5010	11900	6810	8130	356	138
MIN	140	144	144	325	245	371	773	595	517	365	142	100
AC-FT	16510	16610	39960	23250	18160	139600	122900	131800	122400	124100	13470	6680

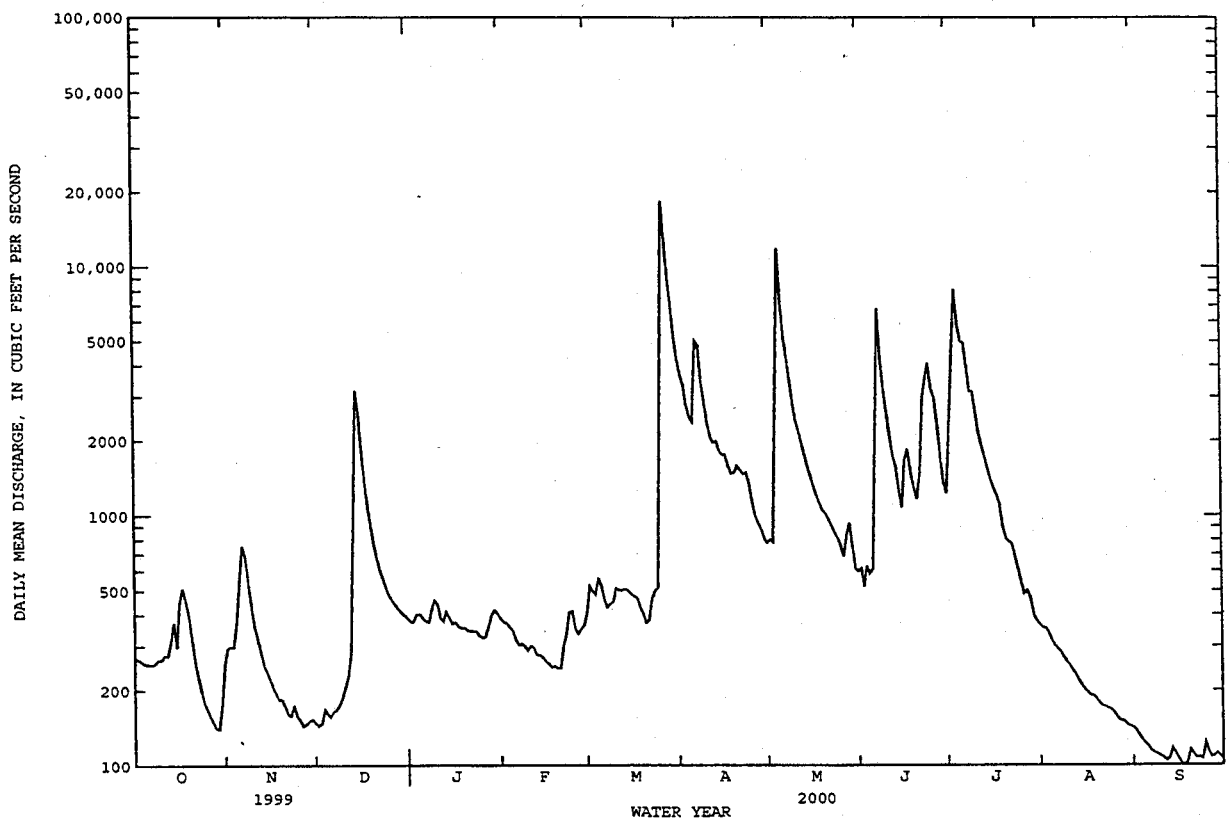
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2000, BY WATER YEAR (WY)

MEAN	3722	1945	1607	1268	1842	2885	3545	8010	8285	2186	1606	2481
MAX	31080	14020	14990	7258	9984	19590	27400	47780	43510	9857	20730	12880
(WY)	1942	1942	1992	1998	1987	1998	1990	1957	1941	1950	1995	1986
MIN	119	137	125	82.4	151	90.5	153	204	640	166	163	108
(WY)	1953	1955	1940	1940	1953	1940	1971	1971	1966	1964	1970	1956

e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1937 - 2000	
ANNUAL TOTAL	669570		390955			
ANNUAL MEAN	1834		1068		3284	
HIGHEST ANNUAL MEAN					11890	1987
LOWEST ANNUAL MEAN					651	1953
HIGHEST DAILY MEAN	21400	May 31	18400	Mar 26	232000	May 31 1987
LOWEST DAILY MEAN	140	Oct 29	100	Sep 17	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	148	Nov 26	106	Sep 15	48	Jan 18 1940
INSTANTANEOUS PEAK FLOW			19500	Mar 26	265000	May 31 1987
INSTANTANEOUS PEAK STAGE			17.03	Mar 26	40.08	May 31 1987
INSTANTANEOUS LOW FLOW			100	Sep 17	100	Sep 17 2000
ANNUAL RUNOFF (AC-FT)	1328000		775500		2379000	
10 PERCENT EXCEEDS	5150		2790		7270	
50 PERCENT EXCEEDS	703		403		855	
90 PERCENT EXCEEDS	235		145		216	



07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'32", long 95°30'06", in NW ¼ sec.11, T.8 S., R.17 E., Choctaw County, OK, Hydrologic Unit 11140101, on right downstream bank of bridge on U.S. Highway 271 at Arthur City, 10.6 mi downstream from Muddy Boggy River, 26.0 mi upstream from Kiamichi River, and at mile 633.1.

DRAINAGE AREA.--44,531 mi^2, of which 5,936 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jan to Sep 1905 (gage heights and discharge measurements only), Oct 1905 to Dec 1911, Jul 1936 to current year. Monthly discharge only for some periods, published in WSP 1311. Gage-height records collected at same site since 1891 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1241: Drainage area. WSP 1311: 1906-11.

GAGE.--Water-stage recorder. Datum of gage is 380.07 ft above sea level. From 1905-11 nonrecording gage at St. Louis-San Francisco Railway Co. bridge 200 ft upstream at same datum. Jul 1, 1936, to Mar 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records poor Oct 1 to Jun 30; records fair Jul 1 to Sep 30. Flow regulated since Oct 1943 by Lake Texoma (station 07331500), 92.8 mi upstream from station. Satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1300	2030	e1200	2820	1300	2600	4880	3230	2910	5330	1370	4610
2	e1300	1200	1000	2820	1540	3310	7100	4940	3010	6480	2370	4700
3	e1200	e1100	1760	2260	3450	3740	7530	8630	2930	3830	5360	3920
4	e1100	1330	2250	1200	3330	5060	7980	12300	3980	2030	5540	2700
5	1060	1760	3620	1100	3090	5540	7360	11100	4400	2150	5590	e1380
6	e1000	1830	3690	2640	2920	3600	8490	9110	2550	3390	5660	1180
7	e900	1850	1940	2990	2350	2060	11000	8690	2440	2280	3440	2670
8	e850	1860	1470	3310	1200	1680	7090	9790	3320	5330	1370	3570
9	e1000	1200	2680	3300	1100	2170	2860	9480	3300	6840	1690	3570
10	e1200	e1000	3000	2730	2600	1300	1780	6110	3310	3910	4300	3110
11	e1300	1100	3200	1660	2740	1800	1350	7700	3420	1510	4490	2640
12	e1200	1690	6980	1400	2650	4280	7380	7420	5300	2920	4560	1380
13	e1000	1770	15000	3140	2510	3630	12200	6090	6380	4650	4590	1210
14	e900	1810	12300	3200	2010	2020	12800	4460	5610	4460	3270	2670
15	e850	1820	6900	3060	1200	1570	11700	3000	5200	4450	1280	3000
16	1710	1200	4710	2940	1100	1750	10400	1750	5170	4470	1680	3030
17	2200	e1000	4080	2340	2150	1800	5450	1800	4750	3370	4290	3060
18	2750	e940	4150	1200	2400	1970	3820	3530	4340	1180	4510	2640
19	1170	e880	4010	1100	2380	2480	3380	5840	4140	1730	4590	e1330
20	e1000	1610	3230	2550	2370	1930	3530	6330	3180	5280	4610	e1010
21	e1340	1700	2220	2750	1960	1590	3180	4960	2860	4670	3290	e892
22	1790	1770	2240	2800	1200	1200	2900	3450	4590	3020	1370	1730
23	1810	1490	3330	2790	1100	e1100	2760	1940	4420	4920	1490	1770
24	1820	1300	3190	2240	2580	e1000	2590	1890	7040	3480	4130	1890
25	1750	2270	3020	1200	5450	1850	1450	3510	8170	1230	4340	2080
26	e1200	2080	2950	1100	5820	2450	e1200	3620	6130	1930	4550	1480
27	e1100	1930	2330	2650	5970	2050	2010	3710	2790	5310	4630	e1210
28	1000	1300	1300	2980	4960	1740	2760	3910	2000	5500	3330	1460
29	1710	1400	1350	3050	3190	1400	3130	2960	3520	5600	1420	1730
30	1790	e1300	2620	3030	---	2140	3140	1550	3870	5610	1810	1930
31	1980	---	2800	2460	---	3260	---	1400	---	3450	4370	---
TOTAL	42280	45520	114520	74810	76620	74070	163200	164200	125030	120310	109290	69552
MEAN	1364	1517	3694	2413	2642	2389	5440	5297	4168	3881	3525	2318
MAX	2750	2270	15000	3310	5970	5540	12800	12300	8170	6840	5660	4700
MIN	850	880	1000	1100	1100	1000	1200	1400	2000	1180	1280	892
AC-FT	83860	90290	227200	148400	152000	146900	323700	325700	248000	238600	216800	138000

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000, BY WATER YEAR (WY)

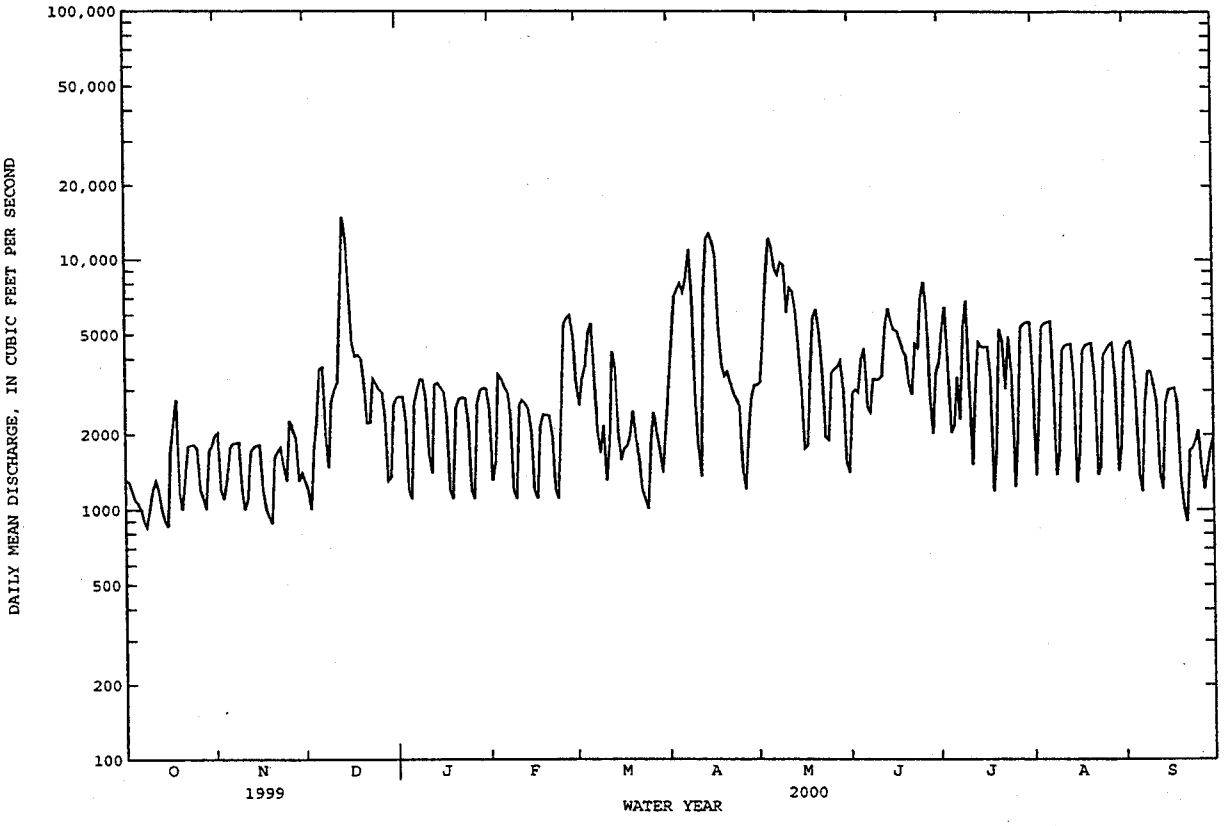
MEAN	6881	7339	7332	6925	8343	10690	11640	17010	18030	7810	4911	4807
MAX	40240	37170	32340	39930	24200	38610	55500	103900	83820	27700	34840	19010
(WY)	1982	1975	1992	1992	1946	1987	1990	1990	1957	1989	1950	1950
MIN	263	242	894	1126	1138	1118	1344	2837	2074	1586	1108	859
(WY)	1957	1957	1957	1964	1959	1967	1956	1980	1956	1956	1972	1988

e Estimated

07335500 RED RIVER AT ARTHUR CITY, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000	
ANNUAL TOTAL	2060330		1179402			
ANNUAL MEAN	5645		3222		a9305	
HIGHEST ANNUAL MEAN					23290	1990
LOWEST ANNUAL MEAN					2754	1964
HIGHEST DAILY MEAN	36500	May 12	15000	Dec 13	269000	May 4 1990
LOWEST DAILY MEAN	850	Oct 8	850	Oct 8	134	bDec 11 1956
ANNUAL SEVEN-DAY MINIMUM	1020	Oct 3	1020	Oct 3	134	Dec 11 1956
INSTANTANEOUS PEAK FLOW			16800	Dec 13	c275000	May 4 1990
INSTANTANEOUS PEAK STAGE			9.42	Dec 13	d34.21	May 4 1990
ANNUAL RUNOFF (AC-FT)	4087000		2339000		6741000	
10 PERCENT EXCEEDS	12800		5830		24100	
50 PERCENT EXCEEDS	3380		2690		4280	
90 PERCENT EXCEEDS	1300		1200		1370	

a Prior to regulation, water years 1906-11, 1937-43, 9,266 ft^3/s.
b Also occurred Dec 12, 1956.
c Maximum discharge for period of record, 400,000 ft^3/s, May 28, 1908.
d Maximum gage height for period of record, 43.2 ft, May 28, 1908.



07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

LOCATION.--Lat 33°49'08", long 96°33'47", Grayson County, Hydrologic Unit 11140101, on right bank 1,800 ft downstream from Denison Dam powerhouse, 0.4 mi upstream from Shawnee Creek (spillway flow return), 4.5 mi north of Denison, and at mile 725.5.

DRAINAGE AREA.--39,720 mi^2, of which 5,936 mi^2 is probably noncontributing. At site used prior to Oct 1961 drainage area was 39,777 mi^2, of which 5,936 mi^2 probably was noncontributing.

PERIOD OF RECORD.--Oct 1923 to Sep 1989; Dec 1996 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to Oct 1934, published as "near Denison, TX", and Oct 1934 to Sep 1961, published as "near Colbert, OK". Gage-height records collected at various sites in this vicinity 1892-93, 1906-28, 1931-49 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 807: 1935 (M). WSP 1211: Drainage area. WSP 1241: 1924-29, 1932-33, 1934 (M), 1935.

GAGE.--Water-stage recorder. Datum of gage is 495.00 ft above sea level. Oct 9, 1923, to Sep 24, 1934, nonrecording gage, and Jul 29, 1942, to Sep 30, 1961, water-stage recorder, at county road bridge 2.5 mi downstream. Prior to Oct 1, 1931, at datum 11.85 ft higher; Oct 1, 1931, to Sep 24, 1934, at datum 12.07 ft higher; and Jul 29, 1942, to Sep 30, 1961, at datum 2.36 ft higher; Sep 25, 1934, to Jul 28, 1942, water-stage recorder at railway bridge 1.9 mi downstream at datum 12.36 ft higher. Jul 29, 1942 to Sep 30, 1989, at same site and datum 5.00 ft higher.

REMARKS.--No estimated daily discharge. Records fair except for discharges less than 80 ft^3/s which are poor. Flow regulated since October 1943 by Lake Texoma (station 07331500). U.S. Army Corps of Engineers satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 26, 1908, reached a stage of 45.5 ft (at site and datum used Jul 29, 1942, to Sep 30, 1961); from record of National Weather Service.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	968	1330	1740	213	2280	2120	5830	3290	2590	259	5730	3070
2	91	1620	2810	32	2240	2170	5860	6560	2800	38	5760	391
3	34	1650	2840	2570	2230	2130	6190	6600	169	4070	5780	230
4	882	1670	254	2760	2210	138	7130	6570	56	355	5880	2740
5	976	1670	32	2840	156	22	11100	7640	2470	4070	507	2950
6	978	375	2590	2820	24	2000	6410	8900	2700	5950	181	4280
7	987	45	2820	2820	2050	159	103	8740	2720	7420	4330	3000
8	1010	1330	2820	224	2190	23	62	4700	2680	512	4670	2980
9	126	1660	2790	31	2200	23	68	7980	2730	33	4670	439
10	48	1650	2740	2610	2200	25	5020	7350	303	6750	4680	278
11	939	1670	237	2810	2170	23	9050	5970	51	4410	4670	2820
12	1030	1680	77	2800	138	26	9090	3060	2410	4400	536	3010
13	1790	353	2570	2780	20	27	8620	227	2660	4380	193	2980
14	1790	42	2730	2810	2030	28	8680	52	2690	4420	4350	2980
15	2870	43	2720	200	2170	29	653	2980	2650	346	4700	2980
16	235	1310	2740	29	2170	28	72	3170	2660	29	4680	449
17	52	1640	2790	2630	2210	30	1460	3170	266	5400	4720	271
18	1560	1650	217	2780	2130	30	1840	3180	40	5760	4680	1770
19	1670	1650	35	2780	134	29	1850	3150	2450	3750	532	1840
20	1650	337	2610	2770	19	34	1810	227	2670	2970	195	1850
21	1690	41	2790	2790	2030	38	1820	47	2670	5750	3860	1860
22	1650	1440	2800	205	2190	39	424	2950	2680	317	4700	1870
23	165	1630	2760	26	2180	41	58	3140	2640	27	4500	352
24	50	1620	2760	2580	2190	37	1460	3150	271	5460	4710	270
25	1620	240	217	3380	2170	36	1820	3170	42	5750	4720	1630
26	1650	1460	32	2780	129	38	2600	3210	2410	5760	546	1600
27	1620	249	2590	2770	18	1440	2510	199	2620	5740	222	1620
28	1620	37	2770	2770	1880	1660	2490	52	2610	5760	4400	2730
29	1670	1360	2800	186	2100	1650	304	2570	2620	305	4720	2730
30	182	1650	2800	28	---	5540	60	2690	2630	23	4730	199
31	49	---	2780	2550	---	6490	---	2680	---	5480	4730	---
TOTAL	31652	33102	63261	59374	45858	26103	104444	117374	58958	105694	113282	56169
MEAN	1021	1103	2041	1915	1581	842	3481	3786	1965	3409	3654	1872
MAX	2870	1680	2840	3380	2280	6490	11100	8900	2800	7420	5880	4280
MIN	34	37	32	26	18	22	58	47	40	23	181	199
AC-FT	62780	65660	125500	117800	90960	51780	207200	232800	116900	209600	224700	111400

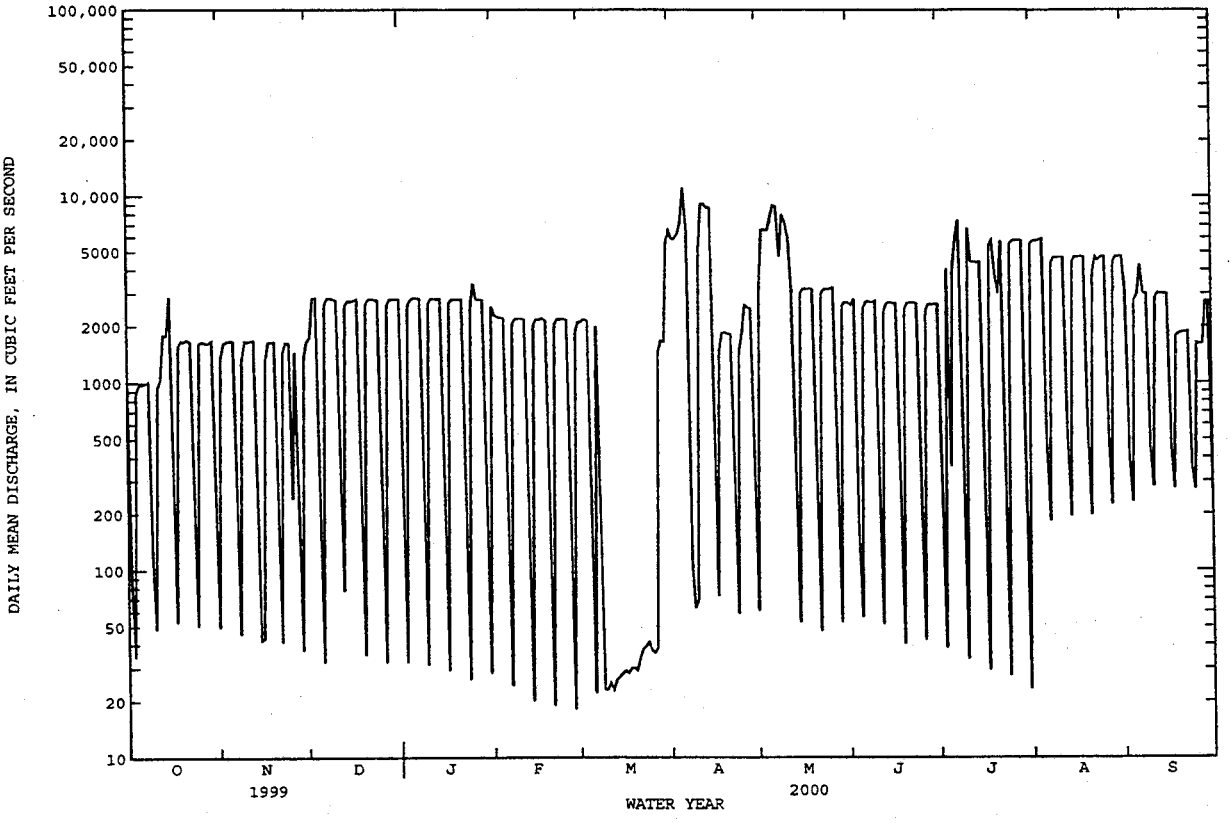
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000h, BY WATER YEAR (WY)

MEAN	4921	3557	3324	3540	3440	4388	4801	7591	11440	5451	3515	2646
MAX	27860	18880	13320	20630	13800	24760	20400	34710	66960	21820	25570	10330
(WY)	1987	1975	1997	1998	1987	1987	1945	1957	1957	1982	1950	1950
MIN	66.7	79.6	569	271	678	614	789	712	1449	1580	953	325
(WY)	1957	1957	1981	1945	1945	1976	1978	1959	1956	1956	1972	1984

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000h	
ANNUAL TOTAL	1242309		815271			
ANNUAL MEAN	3404		2228		a4829	
HIGHEST ANNUAL MEAN					16030	1987
LOWEST ANNUAL MEAN					1510	1964
HIGHEST DAILY MEAN	14000	Jun 3	11100	Apr 5	96200	Jun 5 1957
LOWEST DAILY MEAN	25	Sep 26	18	Feb 27	18	Feb 27 2000
ANNUAL SEVEN-DAY MINIMUM	702	Oct 1	25	Mar 8	25	Mar 8 2000
INSTANTANEOUS PEAK FLOW			11300	Sep 6	b102000	Jun 5 1957
INSTANTANEOUS PEAK STAGE			11.04	Sep 6	c26.26	Jun 5 1957
ANNUAL RUNOFF (AC-FT)	2464000		1617000		3498000	
10 PERCENT EXCEEDS	8040		5420		10600	
50 PERCENT EXCEEDS	2110		2080		2790	
90 PERCENT EXCEEDS	67		38		190	

a Prior to regulation, water years 1924-43, 5,684 ft^3/s.
b Maximum discharge for period of record, 201,000 ft^3/s May 21, 1935.
c Maximum gage height for period of record, 32.00 ft Apr 25, 1942, site and datum then in use.
h See PERIOD OF RECORD paragraph.



QUALITY DATA
WATER YEAR OCTOBER 1999 through SEPTEMBER 2000

(as recommended for inclusion in the annual report
by the Engineering Committee)

PERIOD OF RECORD.--Water years 1947-1956, Apr 1980 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)
NOV 02...	1245	81213	80513	1780	767	86	8.4	8.1	1580	16.4
JAN 05...	1415	81213	80513	4260	750	110	12.2	8.4	1580	9.8
MAR 01...	1420	81213	80513	7410	749	94	8.9	7.8	721	16.8
APR 05...	1155	81213	80513	10200	768	85	8.4	8.4	691	16.0

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
NOV 02...	340	87	29	6.5	4	180	53	240	260	.100
JAN 05...	370	94	33	5.9	4	160	48	240	270	.080
MAR 01...	180	48	14	4.2	2	70	45	91	110	.100
APR 05...	160	45	12	3.8	2	64	46	89	100	.090

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
NOV 02...	.74	.010	.040	.64	.78	.13	.04	.10	.030	.06
JAN 05...	.95	--	<.020	.87	--	.10	--	--	<.010	.09
MAR 01...	1.1	.330	.340	1.0	1.4	.13	1.5	.03	.010	.03
APR 05...	1.3	--	.110	1.2	1.4	.12	--	--	<.010	.09

DATE	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 02...	.020	.020	.080	963	37	100	92	596	124	99
JAN 05...	.030	.030	.090	959	32	K6	K2	1780	155	99
MAR 01...	.030	.010	.220	420	700	480	210	7820	391	84
APR 05...	.030	.030	.260	397	170	K230	290	15200	553	71

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
JUL 12...	0645	81213	80513	6320	762	81	5.9	7.7	1220	31.8	270
12...	0650	80513	80513	--	762	83	6.0	7.7	1210	31.7	--
12...	0652	80513	80513	--	762	81	5.9	7.7	1220	31.8	--
12...	0654	80513	80513	--	762	80	5.8	7.7	1220	31.8	--
12...	0656	80513	80513	--	762	80	5.8	7.7	1220	31.8	--
12...	0658	80513	80513	--	762	80	5.8	7.7	1220	31.8	--
12...	0700	80513	80513	--	762	81	5.9	7.8	1220	31.8	--
12...	0702	80513	80513	--	762	82	6.0	7.8	1220	31.8	--
12...	0704	80513	80513	--	762	82	6.0	7.8	1210	31.8	--
12...	0706	80513	80513	--	762	82	6.0	7.8	1200	31.8	--
12...	0708	80513	80513	--	762	82	6.0	7.8	1200	31.8	--
SEP 13...	1300	81213	80513	3240	760	80	6.4	7.4	2140	26.0	440

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)
JUL										
12...	72	23	5.0	3	130	50	180	200	.010	2.7
SEP										
13...	110	39	6.8	5	260	56	370	360	.060	.93

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)
JUL										
12...	<.020	2.7	.01	--	<.010	--	<.020	<.010	.160	--
12...	--	--	--	--	--	--	--	--	--	6.40
12...	--	--	--	--	--	--	--	--	--	2.00
12...	--	--	--	--	--	--	--	--	--	4.00
12...	--	--	--	--	--	--	--	--	--	6.00
12...	--	--	--	--	--	--	--	--	--	16.0
12...	--	--	--	--	--	--	--	--	--	11.0
12...	--	--	--	--	--	--	--	--	--	12.6
12...	--	--	--	--	--	--	--	--	--	14.0
12...	--	--	--	--	--	--	--	--	--	14.5
12...	--	--	--	--	--	--	--	--	--	4.40
SEP										
13...	<.020	.87	.08	.07	.020	.03	<.020	.010	.120	--

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	STREAM WIDTH (FT) (00004)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAM-PLING DEPTH (FEET) (00003)
JUL										
12...	699	--	43	38	580	4270	250	83	--	--
12...	--	410	--	--	--	--	--	--	680	3.20
12...	--	410	--	--	--	--	--	--	721	1.00
12...	--	410	--	--	--	--	--	--	762	2.00
12...	--	410	--	--	--	--	--	--	803	3.00
12...	--	410	--	--	--	--	--	--	844	8.00
12...	--	410	--	--	--	--	--	--	885	5.50
12...	--	410	--	--	--	--	--	--	926	6.30
12...	--	410	--	--	--	--	--	--	967	7.00
12...	--	410	--	--	--	--	--	--	1010	7.30
12...	--	410	--	--	--	--	--	--	1050	2.20
SEP										
13...	1310	--	K68	K27	K55	2060	235	99	--	--

07362000 OUACHITA RIVER AT CAMDEN--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947-52, October 1974 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)
NOV 02...	0745	81213	80513	2300	769	90	8.6	7.2	88	18.0
JAN 05...	1015	81213	80513	1110	760	87	9.5	7.3	87	11.1
MAR 01...	1015	81213	80513	3060	755	91	9.2	7.9	107	14.5
APR 05...	0830	81213	80513	10700	768	80	8.0	7.8	84	15.8

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
NOV 02...	22	6.3	1.6	1.3	.6	6.8	38	4.6	11	.020
JAN 05...	23	6.6	1.5	1.2	.5	5.9	35	4.1	12	.020
MAR 01...	30	9.1	1.7	4.1	.7	9.3	37	5.0	18	.090
APR 05...	24	7.3	1.4	1.6	.4	4.3	26	4.7	11	.040

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
NOV 02...	<.20	--	.040	--	--	.03	--	--	<.010	.06
JAN 05...	.33	--	.080	.31	.41	.03	--	--	<.010	.09
MAR 01...	.47	.270	.280	.38	.75	.12	1.2	.03	.010	--
APR 05...	.53	--	.200	.49	.73	.05	--	--	<.010	--

DATE	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 02...	<.020	.020	.030	51	K7	23	K18	99	16	99
JAN 05...	.040	.030	.040	50	K5	170	34	51	17	92
MAR 01...	.060	<.010	.040	69	110	140	51	314	38	91
APR 05...	.030	<.010	.070	65	210	140	210	1880	65	94

07362000 OUACHITA RIVER AT CAMDEN--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
JUL							
12...	1200	81213	80513	768	89	7.1	6.7
12...	1202	80513	80513	768	91	7.2	6.9
12...	1204	80513	80513	768	90	7.1	6.8
12...	1206	80513	80513	768	90	7.1	6.7
12...	1208	80513	80513	768	89	7.0	6.7
12...	1210	80513	80513	768	89	7.0	6.7
12...	1212	80513	80513	768	89	7.0	6.7
12...	1214	80513	80513	768	89	7.0	6.7
12...	1216	80513	80513	768	89	7.0	6.7
12...	1218	80513	80513	768	89	7.0	6.7
12...	1220	80513	80513	768	89	7.0	6.7

DATE	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET) (81903)	STREAM WIDTH (FT) (00004)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	SAMPLING DEPTH (FEET) (00003)
JUL						
12...	60	28.0	--	--	--	--
12...	60	28.0	8.40	300	885	4.20
12...	60	28.0	17.8	300	915	8.90
12...	60	28.0	22.0	300	945	11.0
12...	60	28.0	22.5	300	975	11.3
12...	60	28.0	20.0	300	1000	10.0
12...	60	28.0	20.3	300	1040	10.0
12...	60	28.0	18.3	300	1060	9.00
12...	60	28.0	17.1	300	1100	8.00
12...	60	28.0	16.8	300	1120	8.40
12...	60	28.1	11.0	300	1160	6.50

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
JUL										
12...	1200	5230	19	5.3	1.3	1.2	.3	3.3	26	2.9

DATE	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
JUL										
12...	4.9	.020	.79	.130	.77	.92	.03	<.010	.03	<.020

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUL									
12...	.010	.090	41	20	26	96	1790	127	84

07362000 OUACHITA RIVER AT CAMDEN--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)
SEP 13...	0900	81213	80513	918	764	78	6.3	6.2	79	26.2	23	6.5

DATE	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)
SEP 13...	1.7	1.2	.4	4.5	28	3.2	6.9	.030	<.20	.080	.04

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
SEP 13...	<.010	<.020	<.010	.020	45	150	100	K33	45	18	94

07364150 BAYOU BARTHOLOMEW NEAR MCGEHEE--CONTINUED

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-1972, October 1973, January 1975, December 1975 to August 1976, Water years 1977 through 1979, and Water years 1996 to current year.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)
NOV 01...	1215	81213	80513	33	760	52	5.1	7.6	180	15.8
JAN 04...	1300	81213	80513	103	756	53	5.8	7.2	240	10.6
FEB 29...	1455	81213	80513	239	747	62	6.2	6.7	144	14.5
APR 04...	1345	81213	80513	1840	771	54	5.4	7.0	48	16.5

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
NOV 01...	53	13	4.9	6.1	.6	10	26	15	6.6	.080
JAN 04...	68	17	6.2	5.1	.8	15	30	24	16	.040
FEB 29...	39	9.7	3.6	3.6	.8	11	35	13	8.5	.110
APR 04...	13	3.2	1.2	3.0	.2	1.5	16	2.2	2.6	.030

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
NOV 01...	.57	.210	.230	.49	.80	.10	.93	.07	.020	.21
JAN 04...	.60	--	.230	.56	.83	.05	--	--	<.010	.18
FEB 29...	1.1	.620	.640	.99	1.7	.14	2.7	.07	.020	.09
APR 04...	.73	--	.150	.70	.88	.04	--	--	<.010	.31

DATE	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
NOV 01...	.080	.070	.180	105	K20	K200	K43	3.9	44	99
JAN 04...	.070	.060	.170	147	160	510	170	20	71	99
FEB 29...	.060	.030	.230	92	960	340	1800	100	155	98
APR 04...	.090	.100	.340	38	860	1600	6800	835	168	98

07364150 BAYOU BARTHOLOMEW NEAR MCGEHEE--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
JUL							
13...	0730	81213	80513	766	43	3.3	7.0
13...	0732	80513	80513	768	43	3.3	7.0
13...	0734	80513	80513	768	43	3.3	7.0
13...	0736	80513	80513	768	43	3.3	7.0
13...	0738	80513	80513	768	43	3.3	7.0
13...	0740	80513	80513	768	43	3.3	7.0
13...	0742	80513	80513	768	43	3.3	7.0
13...	0744	80513	80513	768	43	3.3	7.0
13...	0746	80513	80513	768	44	3.4	7.0
13...	0748	80513	80513	768	44	3.4	7.0
13...	0750	80513	80513	768	46	3.5	7.0

DATE	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET) (81903)	STREAM WIDTH (FT) (00004)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	SAMPLING DEPTH (FEET) (00003)
JUL						
13...	347	29.4	--	--	--	--
13...	347	29.4	1.00	85.0	90.0	.50
13...	347	29.4	2.50	85.0	102	1.20
13...	347	29.4	4.30	85.0	110	2.10
13...	347	29.4	5.40	85.0	118	2.70
13...	347	29.4	5.90	85.0	126	3.00
13...	347	29.4	5.70	85.0	134	3.00
13...	347	29.4	5.40	85.0	142	2.70
13...	347	29.4	4.00	85.0	150	2.00
13...	346	29.4	3.90	85.0	158	2.00
13...	347	29.4	7.30	85.0	166	2.60

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
JUL 13...	0730	50	100	27	9.0	4.9	.9	22	30	35	11

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
JUL 13...	.070	.55	.460	.470	.48	1.0	.09	2.0	.03	.010	.31

DATE	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
JUL 13...	.090	.100	.170	201	120	150	78	9.2	68	93

07364150 BAYOU BARTHOLOMEW NEAR MCGEHEE--CONTINUED

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)
SEP 12...	1130	81213	80513	11	763	44	3.6	6.8	443	25.1

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
SEP 12...	140	36	13	4.5	1	30	30	42	9.0

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
SEP 12...	.070	.56	.130	.49	.69	.09	<.010	.28	.130

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
SEP 12...	.090	.160	258	170	290	600	2.2	75	98

07344410 RED RIVER ABOVE SHREVEPORT, LA (CE 04225)

LOCATION.--Lat 32°32'57", long 93°45'51", in lot 14, T. 18 N., R. 14 W., Caddo Parish, Hydrologic Unit 11140202, near right bank, 2.7 mi northeast of Shreveport Courthouse, 4.9 mi upstream from mouth of Cross Bayou, 5.4 mi upstream from gaging station at Illinois Central Railroad bridge at Shreveport (Station 07348500), and at mile 282.5.

DRAINAGE AREA.--57,100 mi^2, approximately, of which 5,936 mi^2 above Denison Dam is noncontributing.

PERIOD OF RECORD.--Water years 1974-84, 1986 to current year.

REMARKS.--Water-quality samples are non-integrated. Samples are dip sampled at centrum of flow. All dissolved constituents are results from water that has be filtered through 0.45 micron filters.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1975, October 1976 to September 1977.
WATER TEMPERATURES: October 1974 to September 1975, October 1976 to September 1977.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,880 micromhos June 5, 6, 1977; minimum daily, 163 micromhos Mar. 17, 1977.
WATER TEMPERATURES: Maximum daily, 32.0°C July 25, 1977; minimum daily, 4.5°C Jan. 19, 1977.

EXTREMES OUTSIDE PERIOD OF DAILY RECORD.--A water temperature of 2.5°C was observed Jan. 15, 1976.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	TOTAL COLI-FORM, M ENDO MF, WTR (COL/ 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)
OCT												
21...	0945	1180	8.3	17.9	--	12	8.7	21	5.7	K10	K8	K2
NOV												
17...	0945	1370	8.1	17.9	30	8.1	7.8	29	3.4	100	K16	K1
DEC												
15...	1010	1050	7.8	10.5	20	13	13.1	22	5.5	K44	K44	100
JAN												
26...	0930	970	8.0	10.1	--	13	11.3	28	--	110	K4	K90
FEB												
24...	1640	960	8.1	18.7	30	20	10.2	24	4.5	K18	--	K8
MAR												
29...	1705	348	8.1	21.4	20	19	11.3	23	5.5	260	25	56
MAY												
04...	1025	559	7.9	21.3	10	16	7.7	22	2.5	300	120	440
JUN												
01...	1020	265	7.6	28.2	40	25	7.6	--	.6	K6	<2	K22
JUL												
06...	1005	187	8.2	28.4	60	31	7.6	25	2.3	K110	K8	80
26...	1015	1080	8.2	28.3	20	7.1	8.9	24	6.3	37	K10	K9
AUG												
30...	1615	1690	8.4	32.4	10	4.1	10.1	26	6.4	K80	K13	K20
SEP												
20...	0910	1190	8.0	25.4	10	2.8	7.3	18	2.7	K10	K8	K7

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT												
21...	320	87.0	26.0	110	5.5	231	--	150	140	.2	691	657
NOV												
17...	350	91.0	29.0	150	5.6	197	--	210	190	.3	835	794
DEC												
15...	250	62.0	22.0	110	4.3	100	--	170	150	.2	609	578
JAN												
26...	230	59.0	19.0	100	4.1	110	--	150	130	.2	560	528
FEB												
24...	240	65.0	20.0	100	4.1	130	--	140	130	.2	557	537
MAR												
29...	100	31.0	6.50	26.0	3.0	90	--	35.0	29.0	.1	200	185
MAY												
04...	150	41.0	11.0	46.0	3.1	98	97	74.0	64.0	.1	313	297
JUN												
01...	74	22.0	4.70	20.0	2.9	59	--	32.0	24.0	.1	157	141
JUL												
06...	57	18.0	3.00	12.0	2.9	60	48	16.0	13.0	.1	117	94
26...	270	71.0	22.0	110	4.5	130	128	160	150	.2	653	595
AUG												
30...	380	96.0	34.0	200	5.5	136	132	280	290	.3	1060	985
SEP												
20...	260	67.0	23.0	130	4.3	111	104	180	190	.2	708	657

07344410 RED RIVER ABOVE SHREVEPORT, LA (CE 04225)--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
OCT											
21...	16	<.01	<.1	.05	1.2	.100	.020	13	1	<1	<1.0
NOV											
17...	21	<.01	<.1	.05	.98	.080	.030	13	--	--	--
DEC											
15...	25	<.01	.1	.06	.67	.070	E.040	7.1	--	--	--
JAN											
26...	20	<.01	<.1	.05	.27	<.020	<.010	9.2	1	<1	<1.0
FEB											
24...	26	<.01	<.1	.05	.79	.090	E.040	9.6	--	--	--
MAR											
29...	34	E.01	<.1	.03	.86	.090	E.030	8.7	--	--	--
MAY											
04...	28	<.01	<.1	.06	.60	.090	E.030	8.8	2	<1	<1.0
JUN											
01...	41	<.01	<.1	.04	.61	.090	E.040	11	--	--	--
JUL											
06...	42	<.01	<.1	.02	.68	.140	.080	10	--	--	--
26...	13	E.01	<.1	.06	.99	.110	E.020	10	2	<1	<1.0
AUG											
30...	15	<.01	<.1	.02	1.2	.100	E.010	9.7	--	--	--
SEP											
20...	14	<.01	<.1	<.01	.94	.080	E.020	8.1	--	--	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)
OCT											
21...	3	2	--	<1	--	<.1	<1	<1	5	<.01	<4
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	--	--	--	--	--	--	--	--	--
JAN											
26...	<1	1	480	<1	85	<.1	2	<1	4	<.01	<4
FEB											
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	2	2	780	<1	140	<.1	2	<1	23	<.01	<4
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	--	--	--	--	--	--	--	--	--	--	--
26...	2	3	230	<1	120	<.1	2	<1	7	<.01	<4
AUG											
30...	--	--	--	--	--	--	--	--	--	--	--
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

07344410 RED RIVER ABOVE SHREVEPORT, LA (CE 04225)--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	PHORATE TOTAL (UG/L) (39023)	PER-THANE TOTAL (UG/L) (39034)	DEF TOTAL (UG/L) (39040)	PCNS UNFILT RECOVER (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	LINDANE TOTAL (UG/L) (39340)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)
OCT 21...	<1	<.01	<.03	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
NOV 17...	--	--	--	--	--	--	--	--	--	--	--
DEC 15...	--	<.01	<.12	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
JAN 26...	<1	--	--	--	--	--	--	--	--	--	--
FEB 24...	--	<.01	<.03	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
MAR 29...	--	--	--	--	--	--	--	--	--	--	--
MAY 04...	<1	<.01	<.03	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
JUN 01...	--	--	--	--	--	--	--	--	--	--	--
JUL 06...	--	<.01	<.03	<.02	--	<.02	--	<.013	<.012	<.1	<.014
26...	E3	--	--	--	--	--	--	--	--	--	--
AUG 30...	--	<.01	<.03	<.02	--	<.02	--	<.013	<.012	<.1	<.014
SEP 20...	--	--	--	--	--	--	--	--	--	--	--

DATE	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN I TOTAL (UG/L) (39388)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	TOX-APHENE, TOTAL (UG/L) (39400)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	PCB, TOTAL (UG/L) (39516)
OCT 21...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
NOV 17...	--	--	--	--	--	--	--	--	--	--	--
DEC 15...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
JAN 26...	--	--	--	--	--	--	--	--	--	--	--
FEB 24...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.009	<.009	<.01	<.1
MAR 29...	--	--	--	--	--	--	--	--	--	--	--
MAY 04...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
JUN 01...	--	--	--	--	--	--	--	--	--	--	--
JUL 06...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
26...	--	--	--	--	--	--	--	--	--	--	--
AUG 30...	<.008	<.017	<.009	<.015	--	<.01	<1	<.011	<.009	<.01	<.1
SEP 20...	--	--	--	--	--	--	--	--	--	--	--

07344410 RED RIVER ABOVE SHREVEPORT, LA (CE 04225)--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	DI-AZINON, TOTAL (UG/L) (39570)	METHYL PARA-THION, TOTAL (UG/L) (39600)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	MIREX, TOTAL (UG/L) (39755)	SILVEX, TOTAL (UG/L) (39760)	CARBO-PHENO-THION WATER UNFLTRD (UG/L) (39786)	2,4-DP TOTAL (UG/L) (82183)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)
OCT											
21...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
FEB											
24...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
JUN											
01...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	<.03	<.01	<.02	<.01	E.03	<.03	<.01	<.03	<.01	<.04	<.01
26...	--	--	--	--	--	--	--	--	--	--	--
AUG											
30...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptance range (non-ideal colony count).
M Presence of material verified but not quantified.

07350500 RED RIVER AT COUSHATTA, LA

LOCATION.--Lat 32°00'45", long 93°21'10", in lot 23, T. 12 N., R. 10 W., Red River Parish, Hydrologic Unit 08040301 at bridge on U.S. Highway 84 at Coushatta, 11.0 mi downstream from Coushatta Bayou, and at mile 242.4.

DRAINAGE AREA.--63,362 mi^2.

PERIOD OF RECORD.--Water years 1970-1976, 1987 to current year.

REMARKS.--Water-quality samples are non-integrated and collected from center span of bridge. All dissolved constituents are results from water that has be filtered through 0.45 micron filters.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	TOTAL COLI-FORM, M ENDO MF, WTR (COL/ 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)
OCT												
21...	1150	840	8.0	22.2	--	1.1	4.3	27	1.2	K30	--	<2
NOV												
17...	1205	1050	8.0	18.7	50	4.8	6.4	31	3.0	K100	K4	K16
DEC												
15...	1225	1260	8.0	13.1	20	5.6	11.3	30	5.0	K36	K7	110
JAN												
26...	1145	1070	7.9	12.3	--	11	9.2	24	--	200	<1	44
FEB												
24...	1450	650	7.8	17.0	30	8.5	9.3	20	1.9	>160	K7	K16
MAR												
29...	1520	322	7.4	21.0	80	30	9.5	24	3.7	K56	25	74
MAY												
04...	1235	395	7.6	22.3	30	14	6.3	22	1.2	150	57	90
31...	1730	263	8.3	28.4	50	15	7.1	28	.6	84	K5	76
JUL												
06...	1330	182	8.1	29.2	60	26	7.3	23	2.1	K40	K11	80
26...	1425	577	9.1	32.6	20	4.8	12.8	31	8.7	K20	K4	K2
AUG												
30...	1355	1280	8.6	32.8	10	1.9	9.3	27	4.8	K14	K4	K5
SEP												
20...	1100	1330	7.9	26.2	20	6.5	6.2	19	2.4	K29	<1	K28

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT												
21...	220	57.0	19.0	82.0	4.8	167	--	100	98.0	.2	497	461
NOV												
17...	280	73.0	23.0	110	5.5	195	--	140	130	.2	633	599
DEC												
15...	330	84.0	29.0	130	5.5	194	--	180	160	.3	749	705
JAN												
26...	260	68.0	22.0	120	4.8	142	--	160	150	.2	634	610
FEB												
24...	150	42.0	12.0	66.0	3.5	90	--	91.0	84.0	.2	371	353
MAR												
29...	78	23.0	5.10	29.0	3.5	74	--	35.0	29.0	.1	193	169
MAY												
04...	98	27.0	7.40	33.0	3.2	68	68	51.0	44.0	.1	224	206
31...	67	19.0	4.70	22.0	3.0	47	--	32.0	29.0	.1	162	138
JUL												
06...	55	17.0	3.10	12.0	2.9	58	26	15.0	13.0	<.1	112	79
26...	140	38.0	10.0	51.0	4.2	90	86	73.0	66.0	.2	336	294
AUG												
30...	300	76.0	26.0	150	5.3	122	124	200	210	.2	791	742
SEP												
20...	290	73.0	25.0	150	5.0	115	110	210	210	.2	796	740

07350500 RED RIVER AT COUSHATTA, LA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT												
21...	6	<.01	M	.15	.72	.090	.040	9.6	2	<1	<1.0	4
NOV												
17...	8	<.01	.1	.13	.89	.070	.030	12	--	--	--	--
DEC												
15...	12	<.01	.2	.13	.66	.060	E.040	8.8	--	--	--	--
JAN												
26...	14	<.01	.1	.17	.49	<.020	E.030	8.8	1	<1	<1.0	<1
FEB												
24...	13	<.01	M	.19	.84	.070	E.030	10	--	--	--	--
MAR												
29...	29	E.01	.2	.11	.76	.110	E.060	12	--	--	--	--
MAY												
04...	21	<.01	E.1	.16	.73	.090	E.050	9.5	2	<1	<1.0	1
31...	27	<.01	<.1	.03	.68	.090	E.040	12	--	--	--	--
JUL												
06...	26	<.01	.1	.03	.49	.130	.080	10	--	--	--	--
26...	7	E.01	<.1	.06	.87	.130	E.060	12	3	<1	<1.0	<1
AUG												
30...	6	<.01	<.1	.05	.92	.100	E.050	9.1	--	--	--	--
SEP												
20...	10	<.01	.1	.06	.83	.090	E.040	8.8	--	--	--	--

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)
OCT											
21...	2	130	<1	81	<.1	<1	<1	6	<.01	<4	<1
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	--	--	--	--	--	--	--	--	--
JAN											
26...	2	340	<1	72	<.1	2	<1	3	<.01	<4	<1
FEB											
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	2	960	<1	130	<.1	2	<1	19	<.01	<4	<1
31...	--	--	--	--	--	--	--	--	--	--	--
JUL											
06...	--	--	--	--	--	--	--	--	--	--	--
26...	2	160	<1	60	<.1	1	<1	7	<.01	7	E2
AUG											
30...	--	--	--	--	--	--	--	--	--	--	--
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
< Actual value is known to be less than the value shown.
> Actual value is known to be greater than the value shown.
K Results based on colony count outside the acceptance range (non-ideal colony count).
M Presence of material verified but not quantified.

07351930 RED RIVER AT GRAND ECORE, LA

LOCATION.--Lat 31°49'05", long 93°05'05" in NE 1/4 sec. 51, T. 10 N., R. 7 W., Natchitoches Parish, Hydrologic Unit 1114027, at bridge on State Highway 6 at Grand Ecore, and 4.0 mi north of Natchitoches.

DRAINAGE AREA.--64,575 mi^2, of which 5,936 mi^2 above Denison Dam is noncontributing.

PERIOD OF RECORD.--Water years 1988 to current year.

REMARKS.--Water-quality samples are non-integrated and collected from center span of bridge. All constituents are results from water that has been filtered through 0.45 micron filters.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)	TOTAL COLIFORM, M ENDO MF, WTR (COL/100 ML) (31501)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/100 ML) (31673)
OCT												
21...	1300	1080	8.1	22.9	--	2.5	8.3	20	3.4	K20	K21	K2
NOV												
17...	1330	974	8.2	19.3	30	3.2	8.5	32	2.6	K60	<1	33
DEC												
15...	1405	--	7.8	13.6	30	4.9	9.9	24	2.8	48	--	K36
JAN												
26...	1315	940	7.9	12.8	--	8.0	10.2	22	--	K40	K3	84
FEB												
24...	1320	760	8.1	17.2	30	9.1	10.4	22	2.3	K40	K14	K13
MAR												
29...	1400	331	7.3	20.4	100	41	9.2	27	3.5	180	33	47
MAY												
03...	1510	396	7.4	22.8	50	37	6.9	28	2.1	2600	450	--
31...	1600	260	8.1	28.3	50	24	7.1	32	.0	K160	K4	20
JUL												
05...	1520	212	7.9	28.9	80	34	5.8	25	--	K160	K26	K12
27...	1035	540	7.5	30.7	20	3.4	6.4	--	1.1	K16	K50	K43
AUG												
30...	1235	1620	8.4	32.5	10	2.4	9.7	22	4.8	K100	K2	K2
SEP												
20...	1225	1270	7.7	27.2	10	2.3	6.7	22	1.6	K33	K8	K4

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
OCT												
21...	270	68.0	24.0	110	4.9	162	--	150	140	.2	642	594
NOV												
17...	270	70.0	22.0	99.0	5.2	193	--	130	110	.2	585	552
DEC												
15...	310	78.0	27.0	120	5.6	205	--	170	150	.3	728	674
JAN												
26...	230	61.0	20.0	110	4.8	146	--	140	120	.2	564	544
FEB												
24...	180	49.0	15.0	79.0	3.5	101	--	110	98.0	.2	436	415
MAR												
29...	81	23.0	5.60	29.0	3.8	73	--	37.0	31.0	.1	203	173
MAY												
03...	100	27.0	8.00	34.0	3.5	69	69	50.0	43.0	.1	224	207
31...	67	19.0	4.80	21.0	3.0	47	--	31.0	28.0	.1	158	135
JUL												
05...	59	18.0	3.50	14.0	2.9	45	28	19.0	17.0	<.1	129	92
27...	140	38.0	10.0	50.0	4.2	83	84	73.0	67.0	.2	320	293
AUG												
30...	360	93.0	32.0	190	6.2	130	141	280	280	.3	1020	966
SEP												
20...	270	70.0	24.0	140	5.0	119	115	190	200	.2	760	698

07351930 RED RIVER AT GRAND ECORE, LA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)
OCT												
21...	<1	<.01	.1	.08	.66	.080	.030	8.4	2	<1	<1.0	4
NOV												
17...	8	<.01	<.1	.06	1.0	.070	.020	17	--	--	--	--
DEC												
15...	10	<.01	.2	.12	.53	.060	E.050	9.4	--	--	--	--
JAN												
26...	10	<.01	.2	.16	.51	.020	.010	7.3	1	<1	<1.0	<1
FEB												
24...	11	<.01	.1	.03	.63	.080	E.040	7.5	--	--	--	--
MAR												
29...	36	E.01	.2	.12	.90	.140	E.100	13	--	--	--	--
MAY												
03...	34	<.01	E.2	.16	.92	.140	E.090	8.8	2	<1	<1.0	2
31...	30	<.01	M	.03	.73	.100	E.050	10	--	--	--	--
JUL												
05...	30	<.01	.2	.06	.59	.130	.080	12	--	--	--	--
27...	6	E.01	.1	.05	.57	.100	E.080	9.4	3	<1	<1.0	2
AUG												
30...	6	<.01	<.1	.02	.85	.100	E.020	8.3	--	--	--	--
SEP												
20...	7	E.01	.1	.05	.72	.080	E.050	8.9	--	--	--	--

DATE	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)
OCT											
21...	2	80	<1	69	<.1	<1	<1	4	<.01	<4	<1
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	--	--	--	--	--	--	--	--	--
JAN											
26...	1	260	<1	59	<.1	2	<1	3	<.01	<1	<1
FEB											
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	2	1600	1	110	<.1	3	<1	28	<.01	<4	<1
31...	--	--	--	--	--	--	--	--	--	--	--
JUL											
05...	--	--	--	--	--	--	--	--	--	--	--
27...	2	180	<1	70	<.1	1	<1	4	<.01	7	E4
AUG											
30...	--	--	--	--	--	--	--	--	--	--	--
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptance range (non-ideal colony count).
M Presence of material verified but not quantified.

07355500 RED RIVER AT ALEXANDRIA, LA

LOCATION.--Lat 31°18'46", long 92°26'34", in SE $^1/_4$ sec. 10, T. 4 N., R. 1 W., Rapides Parish, Hydrologic Unit 08040301, near center of span on downstream side of Murray Street bridge between Alexandria and Pineville, and 1.7 mi downstream from Bayou Rigolette. Water-quality sampling site at center of channel 0.3 mi downstream.

DRAINAGE AREA.--67,500 mi^2, of which 5,936 mi^2 above Denison Dam is noncontributing.

PERIOD OF RECORD.--Water years 1947, 1952-62, 1969, 1973 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1952 to September 1963, June 1973 to September 1981.
WATER TEMPERATURES: October 1952 to September 1963, June 1973 to September 1984.
CHLORIDE: October 1974 to September 1984.
SUSPENDED-SEDIMENT DISCHARGE: October 1972 to September 1982.

REMARKS.--All dissolved constituents are results from water that has been filtered through 0.45 micron filters. Sample is a dip sample from centrum of flow.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,020 micromhos Oct.8, 1956; minimum daily, 133 micromhos June 24, 1953.
WATER TEMPERATURES: Maximum daily, 34.0 oC Aug. 2, 8, 10, 1956; minimum daily, 0.0 oC Dec. 24, 25, 1983.
CHLORIDE: Maximum daily, 420 mg/L Oct. 12, 1978; minimum daily, 8.6 mg/L Apr. 7, 1977.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 1,495,000 tons Dec. 9, 1973; minimum daily, 1,000 tons Oct. 10-22, 1972, Oct. 1 to Nov. 7, 1978, Sept. 27-30, Oct. 1-4, 1980, Jan. 30-31, Apr. 24-25, Oct. 1-6, 1981.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	COLOR (PLATINUM-COBALT UNITS) (00080)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L) (00340)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)	TOTAL COLIFORM, M ENDO MF, WTR (COL/100 ML) (31501)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/100 ML) (31673)
OCT 21...	1500	1230	7.9	23.0	--	1.8	6.2	10	2.0	K60	K11	<1
NOV 17...	1515	1080	7.9	21.0	10	1.2	7.3	15	.3	K10	K12	K3
DEC 15...	1625	1000	7.9	14.5	20	3.6	10.1	21	2.7	3000	87	26
JAN 26...	1530	590	7.6	12.6	--	6.9	8.8	45	--	420	K8	K60
FEB 24...	1050	880	7.8	17.9	30	5.1	9.6	21	1.8	K310	48	K5
MAR 29...	1110	324	7.0	19.7	60	30	8.9	21	3.0	120	--	61
MAY 03...	1205	470	7.6	21.5	50	18	6.3	22	.9	1700	480	--
31...	0935	309	7.9	28.0	50	22	6.1	23	--	150	K1	K4
JUL 05...	1040	241	7.6	28.7	70	32	5.7	24	--	K170	K32	K12
27...	1700	476	7.4	31.8	20	3.2	6.0	24	.9	K100	K23	K20
AUG 30...	0930	949	8.1	29.6	10	3.0	6.6	18	2.0	K32	K10	K16
SEP 20...	1440	1460	8.1	28.3	10	1.8	8.6	19	2.4	120	K10	K3

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ANC WATER UNFLTRD FET FIELD MG/L AS CACO3 (00410)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
OCT 21...	290	72.0	27.0	130	5.0	148	--	190	180	.2	744	700
NOV 17...	270	68.0	24.0	120	4.9	161	--	160	150	.2	646	624
DEC 15...	260	68.0	23.0	97.0	5.3	200	--	130	110	.2	583	553
JAN 26...	140	39.0	11.0	58.0	3.5	91	--	81.0	72.0	.2	336	319
FEB 24...	220	57.0	18.0	93.0	3.8	138	--	130	120	.2	517	505
MAR 29...	76	21.0	5.70	29.0	3.2	285	--	39.0	34.0	.1	191	170
MAY 03...	110	31.0	8.80	42.0	3.5	60	57	68.0	58.0	.1	265	246
31...	74	21.0	5.30	24.0	2.9	47	--	38.0	33.0	.1	176	152
JUL 05...	66	20.0	4.00	16.0	2.9	56	62	23.0	19.0	.1	141	122
27...	120	33.0	8.20	38.0	4.0	77	76	58.0	52.0	.1	270	239
AUG 30...	220	58.0	19.0	100	4.5	106	53	150	140	.2	565	503
SEP 20...	320	83.0	28.0	160	5.6	135	131	230	230	.2	874	816

07355500 RED RIVER AT ALEXANDRIA, LA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ARSENIC TOTAL (UG/L AS AS) (01002)	BERYL-LIUM, TOTAL RECOV-ERABLE (UG/L AS BE) (01012)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)
OCT											
21...	2	<.01	<.1	.20	.53	.070	.040	7.0	2	<1	<1.0
NOV											
17...	3	<.01	M	.11	.60	.040	.030	6.6	--	--	--
DEC											
15...	7	<.01	.2	.16	.50	.060	E.050	6.7	--	--	--
JAN											
26...	7	<.01	.3	.18	.39	.030	.020	6.1	1	<1	<1.0
FEB											
24...	6	<.01	.2	.28	.96	.080	E.070	9.6	--	--	--
MAR											
29...	22	E.01	.1	.14	.75	.120	E.080	12	--	--	--
MAY											
03...	14	<.01	E.2	.18	.63	.090	E.060	8.8	2	<1	<1.0
31...	28	<.01	.1	.07	.63	.100	E.070	--	--	--	--
JUL											
05...	23	<.01	.2	.05	.46	.120	.090	4.7	--	--	--
27...	5	E.01	.1	.06	.54	.100	E.070	9.6	3	<1	<1.0
AUG											
30...	6	<.01	<.1	.02	.64	.070	E.040	7.4	--	--	--
SEP											
20...	6	<.01	<.1	.02	.90	.100	E.050	8.0	--	--	--

DATE	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	CYANIDE TOTAL (MG/L AS CN) (00720)	PHENOLS TOTAL (UG/L) (32730)
OCT											
21...	4	2	60	<1	33	<.1	<1	<1	8	.01	<4
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	--	--	--	--	--	--	--	--	--	--
JAN											
26...	<1	1	250	2	29	<.1	2	<1	3	<.01	<1
FEB											
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	1	2	880	<1	59	<.1	2	<1	19	<.01	<4
31...	--	--	--	--	--	--	--	--	--	--	--
JUL											
05...	--	--	--	--	--	--	--	--	--	--	--
27...	2	2	140	<1	35	<.1	1	<1	2	<.01	--
AUG											
30...	--	--	--	--	--	--	--	--	--	--	8
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

07355500 RED RIVER AT ALEXANDRIA, LA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L) (00556)	CHLOR-PYRIFOS TOTAL RECOVER (UG/L) (38932)	DISUL-FOTON UNFILT RECOVER (UG/L) (39011)	PHORATE TOTAL (UG/L) (39023)	PER-THANE TOTAL (UG/L) (39034)	DEF TOTAL (UG/L) (39040)	PCNS UNFILT RECOVER (UG/L) (39250)	ALDRIN, TOTAL (UG/L) (39330)	LINDANE TOTAL (UG/L) (39340)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	P,P'-DDD UNFILT RECOVER (UG/L) (39360)
OCT											
21...	<1	<.01	<.03	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	--	<.01	<.12	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
JAN											
26...	1	--	--	--	--	--	--	--	--	--	--
FEB											
24...	--	<.01	<.03	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	<1	<.01	<.03	<.02	<.1	<.02	<.1	<.013	<.012	<.1	<.014
31...	--	--	--	--	--	--	--	--	--	--	--
JUL											
05...	--	<.01	<.03	<.02	--	<.02	--	<.013	<.012	<.1	<.014
27...	E2	--	--	--	--	--	--	--	--	--	--
AUG											
30...	--	<.01	--	<.02	--	<.02	--	<.013	<.012	<.1	<.014
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

DATE	P,P'-DDE, TOTAL (UG/L) (39365)	P,P'-DDT UNFILT RECOVER (UG/L) (39370)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN I TOTAL (UG/L) (39388)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)	TOX-APHENE, TOTAL (UG/L) (39400)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	PCB, TOTAL (UG/L) (39516)
OCT											
21...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
FEB											
24...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.009	<.009	<.01	<.1
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
31...	--	--	--	--	--	--	--	--	--	--	--
JUL											
05...	<.016	<.017	<.009	<.015	<.014	<.01	<1	<.011	<.009	<.01	<.1
27...	--	--	--	--	--	--	--	--	--	--	--
AUG											
30...	<.008	<.017	<.009	<.015	--	<.01	<1	<.011	<.009	<.01	<.1
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

07355500 RED RIVER AT ALEXANDRIA, LA--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	MALA-THION, TOTAL (UG/L) (39530)	PARA-THION, TOTAL (UG/L) (39540)	DI-AZINON, TOTAL (UG/L) (39570)	METHYL PARA-THION, TOTAL (UG/L) (39600)	2,4-D, TOTAL (UG/L) (39730)	2,4,5-T TOTAL (UG/L) (39740)	MIREX, TOTAL (UG/L) (39755)	SILVEX, TOTAL (UG/L) (39760)	CARBO-PHENO-THION WATER UNFLTRD (UG/L) (39786)	2,4-DP TOTAL (UG/L) (82183)	FONOFOS (DY-FONATE) WATER WHOLE TOT.REC (UG/L) (82614)
OCT											
21...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
NOV											
17...	--	--	--	--	--	--	--	--	--	--	--
DEC											
15...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
JAN											
26...	--	--	--	--	--	--	--	--	--	--	--
FEB											
24...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
MAR											
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
03...	<.03	<.01	<.02	<.01	.06	<.03	<.01	<.03	<.01	<.04	<.01
31...	--	--	--	--	--	--	--	--	--	--	--
JUL											
05...	<.03	<.01	<.02	<.01	E.04	<.03	<.01	<.03	<.01	<.04	<.01
27...	--	--	--	--	--	--	--	--	--	--	--
AUG											
30...	<.03	<.01	<.02	<.01	<.05	<.03	<.01	<.03	<.01	<.04	<.01
SEP											
20...	--	--	--	--	--	--	--	--	--	--	--

E Estimated value.
< Actual value is known to be less than the value shown.
K Results based on colony count outside the acceptance range (non-ideal colony count).
M Presence of material verified but not quantified.

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1944 to September 1995; October 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1944 to January 1982, February 1984 to April 1990; December 1996 to current year.
WATER TEMPERATURE: April 1947 to January 1982, February 1984 to April 1990; December 1996 to current year.

REMARKS.--Samples were collected monthly and specific conductance, pH, water temperature, alkalinity, and dissolved oxygen were determined in the field.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 2,180 microsiemens, Sept. 29, 2000; minimum daily, 95 microsiemens, Nov. 2, 1951.
WATER TEMPERATURE: Maximum daily, 38.0°C, July 16, 1985; minimum daily, -0.5°C, Dec. 20, 1996, Jan. 12-18, 1997, Jan. 4, 5, 10, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 2,180 microsiemens, Sept. 29; minimum, 338 microsiemens, June 5.
WATER TEMPERATURE: Maximum, 35.5°C, Sept. 4; minimum, 0.5°C, Jan. 28.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE WATER (DEG C) (00010)	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)
JUL											
19...	1133	1028	1028	11.87	927	747	7.7	8.3	1400	30.2	20
19...	1136	1028	1028	11.87	927	747	7.8	8.3	1400	30.0	40
19...	1139	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	60
19...	1142	1028	1028	11.87	927	747	7.8	8.3	1400	30.0	80
19...	1145	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	100
19...	1148	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	120
19...	1151	1028	1028	11.87	927	747	7.7	8.3	1400	30.0	140
19...	1154	1028	1028	11.87	927	747	7.6	8.3	1400	30.0	160
19...	1157	1028	1028	11.87	927	747	7.6	8.3	1390	30.0	180

DATE	TIME	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	GAGE HEIGHT (FEET) (00065)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	SPECIFIC CONDUCTANCE (US/CM) (00095)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)
OCT												
27...	1400	80020	1028	10.65	166	749	122	11.5	8.4	1710	28.3	17.1
NOV												
15...	1630	80020	1028	10.85	221	754	121	11.0	8.2	1390	24.6	19.3
DEC												
29...	1650	80020	1028	11.35	543	748	107	12.1	8.3	1380	22.0	8.9
JAN												
26...	1130	80020	1028	11.01	375	754	94	11.9	8.2	1600	.0	4.8
FEB												
29...	1630	80020	1028	11.57	672	748	107	10.0	8.3	1420	24.5	17.6
MAR												
21...	1245	80020	1028	11.75	790	747	98	9.8	8.3	1540	17.5	14.0
APR												
27...	1150	80020	1028	12.08	1140	748	88	7.7	8.4	1560	19.6	20.7
MAY												
30...	1430	80020	1028	12.15	1180	744	95	7.0	8.3	1460	36.5	29.5
JUN												
07...	1900	80020	1028	13.02	2450	749	108	8.4	8.4	891	29.4	27.1
JUL												
17...	1500	80020	1028	12.00	1060	747	105	7.7	8.4	1430	37.3	30.5
AUG												
03...	1000	80020	1028	10.98	308	746	99	7.5	8.2	1600	35.0	28.3
SEP												
12...	1405	80020	1028	9.89	85	745	114	8.6	8.3	1990	32.7	28.4

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SODIUM ADSORPTION RATIO (00931)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CARBONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT 27...	750	550	167	80.5	4.2	2	102	23	199	222	10	107
NOV 15...	570	420	128	61.5	4.6	1	80.5	23	156	190	0	80.9
DEC 29...	680	450	178	57.4	4.6	1	68.6	18	235	287	0	67.9
JAN 26...	680	520	158	69.4	3.3	1	88.0	22	161	196	0	88.4
FEB 29...	640	470	155	60.5	3.4	1	69.0	19	164	200	0	67.1
MAR 21...	750	590	185	69.4	4.4	1	70.7	17	161	196	0	69.2
APR 27...	820	620	201	76.4	4.9	.9	60.7	14	198	242	0	52.5
MAY 30...	670	520	164	63.4	5.0	1	72.4	19	146	178	0	62.7
JUN 07...	400	260	103	34.7	5.0	.8	38.2	17	143	164	5	33.9
JUL 17...	710	560	172	68.2	5.7	.9	56.0	14	156	177	6	47.6
AUG 03...	710	590	162	75.0	5.2	1	83.2	20	127	155	0	86.1
SEP 12...	830	700	176	94.8	6.0	2	136	26	129	144	6	130

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)
OCT 27...	.5	9.7	619	.82	<.020	.127	.97	--	.562	.145	.059	.018
NOV 15...	.4	4.4	486	.82	<.020	--	--	--	--	<.050	.033	.010
DEC 29...	.4	13.8	458	.97	.192	1.03	2.0	.25	4.56	1.06	.085	.026
JAN 26...	.4	3.2	594	1.2	.020	.070	1.3	.03	.310	.080	.033	.010
FEB 29...	.4	3.9	522	1.2	<.020	--	--	--	--	<.050	--	<.010
MAR 21...	.4	5.5	605	1.3	<.020	--	--	--	--	<.050	--	<.010
APR 27...	.4	10.8	638	1.1	.021	.814	1.9	.03	3.60	.829	.049	.015
MAY 30...	.4	7.9	545	1.6	.023	--	--	.03	--	<.050	--	<.010
JUN 07...	.4	8.2	275	1.4	<.020	.290	1.7	--	1.28	.300	.033	.010
JUL 17...	.6	11.6	579	1.2	<.020	--	--	--	--	<.050	--	<.010
AUG 03...	.5	14.0	616	1.4	<.020	--	--	--	--	<.050	--	<.010
SEP 12...	.7	15.1	777	.84	<.020	--	1.0	--	--	.174	--	<.010

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)
OCT											
27...	13	6	62	<.2	<.3	<40	<39	<2.4	<3	<1	<1
NOV											
15...	E1	6	77	<.2	<.3	<40	<39	E1.9	<3	<1	<1
DEC											
29...	3	10	146	<.2	<.3	E23	<39	E1.3	<3	<1	<1
JAN											
26...	2	8	78	<.2	<.3	<40	<39	E1.6	E2	<1	<1
FEB											
29...	18	3	200	<.2	<.3	<40	<39	E1.5	<3	<1	<1
MAR											
21...	16	6	167	<.2	<.3	<40	<39	E1.3	E1	<1	<1
APR											
27...	5	<2	404	--	<.3	<40	E22	<2.4	E2	<1	<1
MAY											
30...	5	E2	554	<.2	<.3	<40	<39	<2.4	<3	<1	<1
JUN											
07...	7	3	581	<.2	<.3	<40	<39	<2.4	<3	<1	<1
JUL											
17...	20	<2	283	<.2	<.3	<40	<39	<2.4	<3	<1	<1
AUG											
03...	22	E2	128	E.1	--	<40	<39	<2.4	<3	<1	<1
SEP											
12...	4	<2	127	<.2	<.3	<40	E31	E1.9	E2	<1	<1

DATE	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ALDRIN, TOTAL (UG/L) (39330)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	AROCLOR 1016 PCB TOTAL (UG/L) (34671)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1242 PCB TOTAL (UG/L) (39496)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)
OCT											
27...	<20	<31	--	--	--	--	--	--	--	--	--
NOV											
15...	<20	<31	--	--	--	--	--	--	--	--	--
DEC											
29...	<20	<31	--	--	--	--	--	--	--	--	--
JAN											
26...	<20	<31	--	--	--	--	--	--	--	--	--
FEB											
29...	<20	<31	--	--	--	--	--	--	--	--	--
MAR											
21...	<20	E29	<.040	<.03	152	<.1	--	<1	<.1	<.1	<.1
APR											
27...	<20	43	--	--	--	--	--	--	--	--	--
MAY											
30...	<20	E25	--	--	--	--	--	--	--	--	--
JUN											
07...	<20	E21	--	--	--	--	--	--	--	--	--
JUL											
17...	E11	E16	--	--	--	--	--	--	--	--	--
AUG											
03...	<20	158	<.040	<.03	138	--	<.10	<1	<.1	--	<.1
SEP											
12...	<20	E30	--	--	--	--	--	--	--	--	--

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	ARSENIC TOTAL (UG/L AS AS) (01002)
OCT											
27...	--	--	<.050	<.010	.139	31	1.65	543	1210	2.6	3
NOV											
15...	--	--	<.050	<.010	.097	28	1.28	561	941	2.2	3
DEC											
29...	.78	.230	.074	.075	.243	138	1.35	1460	995	3.7	5
JAN											
26...	1.2	--	<.050	<.010	.151	62	1.50	1120	1100	E1.9	3
FEB											
29...	--	--	<.050	<.010	.175	121	1.33	1780	980	E1.4	3
MAR											
21...	--	--	<.050	<.010	.226	149	1.50	2360	1110	2.1	3
APR											
27...	1.1	.205	.069	.067	.399	314	1.59	3590	1170	4.8	6
MAY											
30...	1.5	.071	<.050	.023	.597	374	1.37	3210	1010	3.4	7
JUN											
07...	--	.126	.060	.041	.472	472	.80	3870	586	3.3	5
JUL											
17...	--	.169	.070	.055	.356	258	1.41	2960	1030	4.9	7
AUG											
03...	--	--	<.050	<.010	.166	49	1.52	930	1120	3.6	4
SEP											
12...	--	.083	E.045	.027	.162	22	1.92	324	1410	5.2	6

DATE	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
OCT											
27...	136	145	<8.0	<.1	1.1	E1	<10	3	30	230	<100
NOV											
15...	132	137	<8.0	<.1	<.8	E1	<10	2	<10	350	<100
DEC											
29...	170	206	E5.9	<.1	<.8	2	<10	5	<10	2470	<100
JAN											
26...	120	137	<8.0	<.1	<.8	1	<10	3	<10	630	<100
FEB											
29...	148	186	<8.0	<.1	<.8	2	<10	3	<10	1600	<100
MAR											
21...	147	178	<8.0	<.1	<.8	<1	<10	4	<10	1510	<100
APR											
27...	182	268	<8.0	E.1	<.8	5	<10	8	<10	4630	<100
MAY											
30...	201	340	<8.0	<.1	<.8	8	<10	9	<10	6550	<100
JUN											
07...	172	285	<8.0	E.1	<.8	6	<10	10	<10	5910	<100
JUL											
17...	213	285	<8.0	<.1	<.8	4	<10	6	<10	2700	<100
AUG											
03...	190	199	<8.0	<.1	1.0	2	<10	1	<10	560	<100
SEP											
12...	138	152	<8.0	<.1	<.8	<1	<10	2	<10	360	<100

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	1090	869	941	1330	1060	1170	1660	1640	1650	1550	1500	1520
2	1320	1090	1250	1160	952	1020	1690	1660	1670	---	---	e1580
3	1420	1320	1380	1120	968	1050	1700	1670	1680	1510	1150	1300
4	1510	1420	1470	1110	1000	1040	1670	1630	1650	1470	1270	1400
5	1580	1510	1540	1350	1070	1230	1650	1510	1600	1480	1420	1450
6	1640	1570	1600	1440	1280	1350	1570	1480	1530	1420	1070	1240
7	1650	1600	1640	1540	1440	1470	1510	1020	1220	1410	1130	1290
8	1640	1620	1630	1550	1350	1420	1380	1310	1370	1440	1380	1400
9	1640	1620	1630	1490	1370	1440	1340	1130	1240	1450	1430	1440
10	1670	1630	1650	1480	1450	1470	1520	1180	1370	1450	1440	1440
11	1690	1660	1670	1600	1470	1540	1180	729	866	1480	1450	1470
12	1680	1630	1660	1650	1550	1600	835	649	720	---	---	e1480
13	1670	1640	1650	1720	1650	1690	903	754	822	---	---	e1480
14	1680	1640	1680	1670	1540	1590	903	625	727	---	---	e1490
15	1690	1670	1680	1540	1360	1480	626	611	617	---	---	e1500
16	1680	1660	1670	1370	1360	1360	616	607	612	---	---	e1500
17	1680	1630	1650	1370	1350	1360	623	602	608	---	---	e1500
18	1690	1650	1670	1410	1360	1380	688	623	654	---	---	e1510
19	1700	1630	1660	1450	1410	1440	812	688	746	---	---	e1510
20	1700	1670	1690	1480	1450	1460	840	812	831	---	---	e1520
21	1720	1690	1710	1540	1460	1510	882	830	853	---	---	e1520
22	1750	1690	1730	1580	1520	1560	930	882	909	---	---	e1530
23	1760	1730	1750	1610	1550	1580	1000	930	965	---	---	e1540
24	1740	1720	1730	1610	1560	1580	1060	1000	1040	---	---	e1540
25	1760	1720	1740	1600	1540	1570	1140	1060	1100	---	---	e1540
26	1780	1720	1740	1590	1540	1570	1220	1140	1180	---	---	e1550
27	1730	1700	1720	1620	1580	1610	1280	1220	1250	1550	1490	1520
28	1730	1700	1720	1640	1610	1620	1350	1280	1320	1510	1490	1500
29	1740	1710	1720	1650	1620	1630	1420	1330	1400	1530	1480	1500
30	1710	1520	1640	1650	1620	1640	1460	1420	1440	1550	1510	1520
31	1520	1330	1420	---	---	---	1520	1460	1480	1560	1540	1550
MONTH	1780	869	1610	1720	952	1450	1700	602	1130	---	---	1480

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1580	1550	1560	1450	1400	1430	1010	880	961	1610	720	1220
2	1570	1540	1550	1430	1380	1400	990	939	971	1250	581	752
3	1570	1540	1550	1500	1380	1430	1030	936	980	1270	724	868
4	1570	1540	1550	1610	1500	1560	1150	1030	1090	882	524	634
5	1570	1540	1560	1530	1400	1420	1300	1120	1230	587	526	548
6	1590	1560	1570	1410	1370	1390	1350	1170	1270	613	561	582
7	1600	1570	1590	1420	1360	1390	1200	1030	1130	677	613	644
8	1600	1580	1590	1360	1200	1270	1090	999	1040	775	677	721
9	1600	1580	1590	1350	1230	1310	1160	1090	1130	859	775	828
10	1610	1570	1590	1430	1330	1380	1130	1040	1090	887	858	875
11	1600	1580	1590	1340	1250	1270	1160	1020	1090	911	884	900
12	1600	1580	1590	1550	1320	1460	1270	1090	1200	950	907	926
13	1600	1570	1580	1600	1420	1510	1260	1160	1220	970	949	962
14	1610	1570	1590	1630	1340	1530	1280	1200	1250	977	955	964
15	1640	1560	1610	1380	1140	1240	1410	1280	1350	999	977	988
16	1730	1640	1690	1220	1150	1190	1510	1380	1420	1000	997	1000
17	1680	1330	1420	1270	1190	1230	1520	1490	1500	1010	997	1000
18	1330	1300	1310	1340	1270	1290	1580	1500	1550	1050	1010	1030
19	1310	1240	1280	1400	1340	1390	1580	1540	1560	1100	1050	1080
20	1250	1220	1240	1500	1400	1450	1580	1560	1570	1100	1090	1100
21	1250	1220	1240	1550	773	1450	1660	1570	1610	1100	1090	1090
22	1240	1130	1210	1180	770	949	1630	1290	1460	1110	1100	1100
23	1180	1060	1120	1170	900	1140	1560	1290	1440	1200	1110	1140
24	1380	1180	1290	1180	985	1130	1610	1540	1570	1250	1200	1220
25	1380	967	1160	1420	1180	1300	1610	1570	1600	1420	1250	1320
26	1230	1000	1130	1440	1180	1310	1680	1570	1640	1520	1420	1470
27	1230	1160	1210	---	---	e1020	1620	1560	1570	1580	1500	1540
28	1320	1160	1250	888	609	716	1610	1560	1590	1590	1550	1570
29	1440	1320	1390	691	609	640	1610	1590	1600	1600	1480	1560
30	---	---	---	773	691	735	1600	1470	1590	1580	1440	1490
31	---	---	---	888	769	843	---	---	---	1630	1560	1590
MONTH	1730	967	1430	---	---	1250	1680	880	1340	1630	524	1060

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ENDO-SULFAN II TOTAL (UG/L) (34356)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)
OCT 27...	--	--	--	--	--	--	--	--	--	--	--
NOV 15...	--	--	--	--	--	--	--	--	--	--	--
DEC 29...	--	--	--	--	--	--	--	--	--	--	--
JAN 26...	--	--	--	--	--	--	--	--	--	--	--
FEB 29...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6
APR 27...	--	--	--	--	--	--	--	--	--	--	--
MAY 30...	--	--	--	--	--	--	--	--	--	--	--
JUN 07...	--	--	--	--	--	--	--	--	--	--	--
JUL 17...	--	--	--	--	--	--	--	--	--	--	--
AUG 03...	<.1	<.1	<.03	<.1	<.1	<.1	<.09	<.020	<.1	<.04	<.6
SEP 12...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	ISODRIN SUR SCD 1608 WTR, UNFLTRD PERCENT (90570)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT 27...	--	--	--	--	--	--	--	--	--	--	--
NOV 15...	--	--	--	--	--	--	--	--	--	--	--
DEC 29...	--	--	--	--	--	--	--	--	--	--	--
JAN 26...	--	--	--	--	--	--	--	--	--	--	--
FEB 29...	--	--	--	--	--	--	--	--	--	--	--
MAR 21...	<.2	<.060	<.800	<.030	82	<.030	122	<.1	<.04	<.1	<2
APR 27...	--	--	--	--	--	--	--	--	--	--	--
MAY 30...	--	--	--	--	--	--	--	--	--	--	--
JUN 07...	--	--	--	--	--	--	--	--	--	--	--
JUL 17...	--	--	--	--	--	--	--	--	--	--	--
AUG 03...	<.2	<.060	<.800	<.030	92	<.030	164	<.1	<.04	<.1	<2
SEP 12...	--	--	--	--	--	--	--	--	--	--	--

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	1650	1230	1500	710	463	559	1530	1460	1500	1960	1870	1920
2	1230	1140	1180	880	684	758	1560	1490	1520	1900	1870	1890
3	1140	1070	1110	878	465	722	1620	1560	1590	1900	1870	1880
4	1170	445	1020	516	420	457	1670	1620	1650	1930	1890	1910
5	576	338	419	646	516	586	1740	1670	1710	1940	1900	1920
6	943	576	796	780	646	706	1760	1700	1740	1960	1920	1940
7	932	890	900	833	780	820	1760	1660	1710	1960	1930	1950
8	959	910	940	886	830	863	1670	1590	1630	2000	1930	1970
9	970	948	959	---	---	e950	1620	1580	1600	1990	1940	1970
10	980	900	952	---	---	e1010	1600	1580	1590	1980	1930	1950
11	1010	897	951	---	---	e1070	1650	1590	1620	1970	1940	1960
12	1160	1010	1110	---	---	e1130	1710	1650	1670	1990	1940	1970
13	1120	784	930	---	---	e1190	1770	1700	1730	2000	1940	1990
14	1090	956	1050	---	---	e1250	1800	1760	1780	2000	1800	1900
15	1130	950	1080	---	---	e1310	1870	1770	1830	2000	1800	1910
16	1130	1100	1110	---	---	e1350	1870	1840	1860	2020	1970	1990
17	1190	1050	1110	---	---	e1400	1870	1830	1850	2010	1970	1990
18	1390	1190	1340	1420	1410	1410	1870	1820	1850	1980	1960	1970
19	1470	1300	1440	1410	1380	1400	1870	1820	1840	1980	1930	1940
20	1300	1110	1180	1410	1390	1400	1840	1820	1830	1940	1910	1920
21	1300	965	1100	1420	1410	1410	1840	1800	1830	2030	1940	1960
22	1300	551	918	1420	1240	1330	1880	1820	1840	2020	1970	1990
23	630	502	559	1310	1280	1300	1890	1860	1870	1980	1920	1960
24	699	630	677	1330	1300	1310	1900	1850	1870	1980	1840	1880
25	715	674	688	1390	1310	1320	1890	1860	1870	1960	1890	1930
26	830	715	765	1510	1390	1470	1900	1860	1880	1980	1860	1940
27	834	417	564	1510	1440	1490	1930	1880	1910	1960	1850	1900
28	680	527	631	1440	1380	1410	1960	1910	1940	2050	1860	1940
29	776	624	710	1500	1430	1460	1990	1940	1970	2180	2050	2140
30	743	477	594	1540	1500	1530	2030	1970	1990	2110	1640	1910
31	---	---	---	1540	1530	1540	2060	1950	1970	---	---	---
MONTH	1650	338	943	---	---	1160	2060	1460	1780	2180	1640	1950

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.2	17.2	19.7	17.6	15.0	16.2	11.8	8.7	10.5	9.3	6.0	7.8
2	23.8	18.4	21.0	15.7	12.5	13.7	14.2	10.7	12.3	---	---	---
3	24.0	19.9	21.8	13.2	10.0	11.7	16.2	12.7	14.4	12.2	10.8	11.2
4	21.6	17.6	19.7	14.3	9.9	12.2	15.8	13.4	15.2	10.0	6.5	7.9
5	22.2	17.9	19.8	17.5	12.4	14.8	13.4	9.1	11.0	6.7	4.3	5.5
6	22.9	18.8	20.8	19.7	15.3	17.4	9.1	6.4	7.8	6.0	4.0	5.0
7	22.2	18.3	20.4	19.9	16.0	18.0	9.2	6.0	7.6	7.1	4.1	5.6
8	22.4	20.5	21.2	19.8	17.1	18.4	11.4	8.1	9.6	8.3	6.9	7.6
9	24.5	20.4	22.2	19.2	16.0	17.7	11.9	10.4	11.5	9.8	6.9	8.3
10	25.5	20.6	22.9	20.0	16.0	17.9	10.4	8.6	9.4	9.7	6.6	8.1
11	26.0	21.2	23.6	20.4	16.1	18.3	9.0	8.1	8.4	10.1	6.8	8.4
12	26.0	21.5	23.8	20.4	16.4	18.5	8.4	7.9	8.2	12.1	7.4	9.7
13	26.0	21.4	23.7	20.2	16.1	18.3	8.0	6.6	7.4	10.9	8.6	9.7
14	25.2	21.5	23.5	20.2	16.0	18.2	7.7	6.3	7.0	9.5	6.7	8.2
15	24.7	21.0	22.8	19.3	16.2	18.0	6.8	5.3	6.1	11.1	6.7	8.9
16	24.1	21.6	22.8	18.5	14.5	16.7	6.0	4.3	5.2	12.0	9.7	10.9
17	21.7	15.8	17.8	18.2	14.5	16.5	6.5	4.9	5.6	15.1	11.5	13.1
18	17.0	14.6	15.7	18.7	15.0	17.0	7.7	6.3	6.8	13.9	11.7	12.8
19	18.5	14.4	16.3	17.9	15.6	16.9	7.5	5.5	6.5	14.1	11.5	12.6
20	18.3	13.9	16.0	16.0	12.6	14.5	6.8	4.9	5.7	12.6	8.6	10.1
21	19.0	14.5	16.6	16.5	12.3	14.5	5.8	3.7	4.6	9.1	6.8	8.1
22	19.5	15.2	17.3	17.5	15.1	16.3	5.6	2.9	4.2	10.7	7.4	9.0
23	18.7	15.4	17.1	17.2	13.8	15.4	6.0	3.0	4.4	11.6	8.2	9.8
24	17.8	13.9	15.8	13.8	11.1	12.3	6.9	3.8	5.2	9.7	6.3	7.7
25	17.9	13.7	15.8	12.7	9.6	11.2	6.9	4.1	5.5	7.5	5.4	6.5
26	19.5	14.7	16.9	12.1	8.4	10.3	8.1	4.8	6.3	6.4	3.4	4.8
27	19.0	15.9	17.6	13.0	9.0	11.1	8.4	5.5	6.8	3.4	.9	1.8
28	20.4	16.9	18.4	14.0	9.9	12.0	8.0	4.8	6.4	2.0	.5	1.3
29	20.0	17.9	19.0	13.8	10.8	12.3	8.8	5.3	7.0	4.3	.7	2.4
30	19.2	15.7	17.5	12.1	9.3	10.9	10.0	6.9	8.4	4.9	1.1	3.1
31	17.1	15.3	15.9	---	---	---	9.0	6.7	8.1	6.3	2.3	4.3
MONTH	26.0	13.7	19.5	20.4	8.4	15.2	16.2	2.9	7.8	---	---	---

07315500 RED RIVER NEAR TERRELL, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1967 TO Sep 1997.
BIOLOGICAL DATA: May 1997 to Sep 1997; Oct 1999 to Sep 2000.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)
FEB									
04...	1140	266	6260	8.2	8.2	14.0	122	K5	K8
APR									
27...	1500	549	--	--	22.6	9.1	--	56	K56
JUN									
15...	1100	1580	8900	8.0	23.1	7.5	93	440	K100
AUG									
10...	0925	226	6000	8.0	26.4	7.1	93	K39	K9

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: May 1968 to current year.
BIOCHEMICAL DATA: Oct 1974 to Aug 1994.
PESTICIDE DATA: Oct 1973 to Sep 1982, Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jul 1968 to Sep 1981, Oct 1994 to current year.
WATER TEMPERATURE: Jul 1968 to Sep 1981, Oct 1994 to current year.

INSTRUMENTATION.--Water-quality monitor Dec 1968 to Sep 1981 and Oct 1994 to current year.

REMARKS.--Records fair. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1991 to 2000. The standard error of estimate for dissolved solids is 3%, chloride is 7%, sulfate is 14% and for hardness is 10%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 17,400 microsiemens, Jul 30, 1972; minimum, 462 microsiemens, Feb 24, 1997.
WATER TEMPERATURE: Maximum, 36.5°C, Jul 14 and 18, 1998; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 11,700 microsiemens, Jun 2; minimum, 1,840 microsiemens, Dec 14.
WATER TEMPERATURE: Maximum, 36.0°C, Jul 20 and Sep 4; minimum, 0.0°C, Jan 5.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE WATER (DEG C) (00010)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT											
21...	1215	75	8000	8.3	15.8	12.4	132	1400	1300	360	112
NOV											
22...	1003	83	8150	8.2	13.5	10.7	110	1500	1400	380	130
DEC											
03...	1505	93	8490	7.9	16.6	12.0	132	1600	1500	430	133
20...	1130	147	6100	6.7	4.1	13.9	111	1200	1000	310	92
FEB											
22...	1350	120	8820	8.5	16.1	11.8	128	1600	1400	410	131
MAR											
21...	1400	279	7950	8.3	14.2	11.9	123	1400	1300	380	119
APR											
14...	1425	437	6150	8.4	19.2	13.1	150	1200	1100	320	100
MAY											
23...	1430	114	7080	8.1	28.1	7.9	108	1400	1200	350	118
JUN											
02...	1345	184	10500	8.0	25.9	8.6	113	1400	1300	380	116
JUL											
17...	1000	657	6440	8.2	25.1	7.0	90	1200	1200	320	106
AUG											
08...	1105	151	6060	8.1	25.8	8.6	111	1200	1100	310	115
SEP											
08...	1515	91	5140	8.2	31.0	7.5	106	1200	1100	290	116

DATE	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKALINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKALINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)
OCT											
21...	1140	13	11	--	--	100	1100	2000	.40	5.4	4850
NOV											
22...	1260	14	9.6	--	--	92	1300	2100	.35	4.0	5280
DEC											
03...	1290	14	8.9	--	--	110	1300	2200	.35	2.2	5510
20...	992	13	8.6	--	--	160	860	1500	.35	14	3830
FEB											
22...	1340	15	9.6	--	--	120	1300	2200	.38	.26	5560
MAR											
21...	1160	13	9.1	--	--	110	1300	2000	.34	1.3	4980
APR											
14...	989	12	8.6	--	--	100	1100	1600	.32	7.6	4130
MAY											
23...	1030	12	9.2	--	--	120	1200	1700	.40	5.9	4530
JUN											
02...	1640	19	11	--	--	100	1400	2800	.44	6.3	6470
JUL											
17...	917	11	9.5	98	80	--	1100	1500	.41	11	3970
AUG											
08...	836	10	9.5	109	90	--	1100	1300	.48	11	3800
SEP											
08...	712	9	9.9	115	94	--	1100	1100	.59	15	3380

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	RESIDUE TOTAL AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN,AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)
OCT											
21...	59	--	<.010	<.050	<.020	--	--	.67	.068	E.032	<.010
NOV											
22...	39	--	<.010	<.050	<.020	--	--	.23	<.050	<.050	<.010
DEC											
03...	27	--	<.010	.099	<.020	.70	--	.60	<.050	<.050	<.010
20...	120	1.42	.021	1.44	.092	2.3	.78	.87	.205	.097	.067
FEB											
22...	24	--	<.010	<.050	<.020	--	--	.85	.060	<.050	<.010
MAR											
21...	53	--	<.010	<.050	<.020	--	--	1.2	.142	<.050	<.010
APR											
14...	158	--	<.010	<.050	<.020	--	--	.96	.150	<.050	<.010
MAY											
23...	27	--	<.010	<.050	<.020	--	--	.73	.083	<.050	<.010
JUN											
02...	136	--	<.010	<.050	.023	--	.98	1.0	.184	<.050	<.010
JUL											
17...	45	--	<.010	<.050	<.020	--	--	.87	.136	<.050	<.010
AUG											
08...	34	--	<.010	<.050	<.020	--	--	.93	.065	<.050	<.010
SEP											
08...	<10	--	<.010	<.050	<.020	--	--	1.0	.066	<.050	<.010

DATE	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)
OCT											
21...	--	E2	E1	130	126	<1	<24	<1	<1.0	2	<30
NOV											
22...	--	3	4	92	87	<1	<40	1	<1.0	6	<50
DEC											
03...	--	E2	3	72	14	<1	<24	<1	2.6	6	<10
20...	.21	5	4	160	135	<1	<8.0	3	<1.0	5	<10
FEB											
22...	--	3	5	61	63	<1	<40	<2	<1.6	<1	<50
MAR											
21...	--	4	7	81	77	<1	<.14	3	<.80	<1	<1.3
APR											
14...	--	5	--	150	--	<1	--	1	--	1	--
MAY											
23...	--	4	3	130	125	M	<.28	<2	<1.6	1	<2.6
JUN											
02...	--	4	--	150	--	<1	--	4	--	2	--
JUL											
17...	--	5	4	140	126	<1	<.14	<1	<1.0	2	E.87
AUG											
08...	--	4	6	100	99	M	<.14	2	E.44	<1	E.78
SEP											
08...	--	8	--	93	--	<1	--	<1	--	E1	--

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
21...	410	<30	1	<300	50	14	<.10	<.2	<200	<120	3
NOV											
22...	350	<50	1	<500	39	18	<.15	<.2	<200	<200	7
DEC											
03...	160	<10	2	<100	18	E1.4	<.30	<.2	52	<40	7
20...	1700	<10	2	<160	73	7.6	<.30	<.2	E26	<40	5
FEB											
22...	150	<50	<1	<500	22	12	<.30	<.2	E23	<200	6
MAR											
21...	440	<40	<1	<1.0	28	10	<.30	<.2	2	E1.0	10
APR											
14...	1500	--	<2	--	81	--	<.30	--	<39	--	5
MAY											
23...	270	<50	<10	<2.0	36	E8.5	<.30	<.2	2	<2.8	4
JUN											
02...	850	--	3	--	120	--	<.30	--	<39	--	E1
JUL											
17...	500	<40	E1	<1.0	54	E1.5	<.30	<.2	E2	<1.4	6
AUG											
08...	200	<30	<1	<1.0	34	E4.6	<.30	E.2	E2	<1.4	3
SEP											
08...	180	--	<1	--	48	--	<.30	--	<39	--	4

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
OCT											
21...	E2	<1	<1.0	<160	<60	--	--	--	--	--	--
NOV											
22...	8	<1	<1.0	<160	<100	--	--	--	--	--	--
DEC											
03...	7	<1	<1.0	E20	<20	--	--	--	--	--	--
20...	5	<2	<2.0	E23	E14	--	--	--	--	--	--
FEB											
22...	5	<2	<2.0	<31	<100	--	--	--	--	--	--
MAR											
21...	--	<1	<1.0	<31	<80	--	--	--	--	--	--
APR											
14...	--	<1	--	E16	--	--	--	--	--	--	--
MAY											
23...	5	<1	<2.0	<31	<100	<.040	<.10	<1.00	<.100	<.100	<.100
JUN											
02...	--	<2	--	E19	--	--	--	--	--	--	--
JUL											
17...	3	<1	<1.0	<93	<80	<.040	<.10	<1.00	<.100	<.100	<.100
AUG											
08...	3	<1	<1.0	<93	<60	<.040	<.10	<1.00	<.100	<.100	<.100
SEP											
08...	--	<1	--	<31	--	--	--	--	--	--	--

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT											
21...	--	--	--	--	--	--	--	--	--	--	--
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
14...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	125	<2.00
JUN											
02...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	--	<2.00
AUG											
08...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	--	<2.00
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
21...	--	--	--	--	--	--	--	--	--	--	--
NOV											
22...	--	--	--	--	--	--	--	--	--	--	--
DEC											
03...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
22...	--	--	--	--	--	--	--	--	--	--	--
MAR											
21...	--	--	--	--	--	--	--	--	--	--	--
APR											
14...	--	--	--	--	--	--	--	--	--	--	--
MAY											
23...	<.100	<.030	112	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN											
02...	--	--	--	--	--	--	--	--	--	--	--
JUL											
17...	<.100	<.030	--	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
AUG											
08...	<.100	<.030	161	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP											
08...	--	--	--	--	--	--	--	--	--	--	--

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1999 TO SEPTEMBER 2000

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	3954	6350	4020	42900	1500	15920	1100	11260	1200
NOV.	1999	4136	6210	3930	43920	1400	16150	1000	11690	1200
DEC.	1999	9927	4890	3100	83180	1100	29680	860	23050	1000
JAN.	2000	3306	8020	5060	45180	2000	17580	1200	11040	1400
FEB.	2000	4546	8660	5450	66930	2200	26730	1300	15670	1500
MAR.	2000	61395	3340	2130	352400	700	116700	640	106800	740
APR.	2000	24520	4450	2820	186900	990	65570	800	52940	930
MAY	2000	35727	3370	2150	207200	720	69820	640	61590	740
JUNE	2000	47498	6210	3930	504500	1400	185700	1000	134100	1200
JULY	2000	32201	5220	3310	288200	1200	101400	940	81300	1100
AUG.	2000	4470	5950	3770	45550	1300	16260	1000	12610	1200
SEPT	2000	2160	6090	3860	22520	1400	8140	1100	6140	1200
TOTAL		233840	**	**	1889400	**	669600	**	528200	**
WTD.AVG.		639	4720	2990	**	1100	**	840	**	970

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	11600	7020	8590	7310	4660	5750	---	---	e6040	5740	5600	5670
2	11700	9710	10900	4660	4270	4520	---	---	e5650	5670	5530	5600
3	9710	6800	8570	4270	3770	3950	---	---	e5600	5610	5460	5540
4	6800	5680	5950	4340	3350	3840	---	---	e5670	5530	5390	5460
5	6900	5200	6530	4160	3350	3590	5740	5580	5690	5460	5360	5410
6	6800	6140	6690	4510	3980	4230	5890	5740	5830	5440	5310	5380
7	6690	6300	6460	3980	3830	3880	6030	5870	5930	5400	5240	5330
8	6740	6340	6550	4760	3920	4240	6120	6010	6070	5330	5100	5240
9	7060	6740	6880	5140	4760	5050	6150	5990	6060	5350	5240	5280
10	7560	7050	7260	5500	5120	5290	6200	6080	6140	5500	5350	5410
11	8230	7480	7810	5760	5500	5670	6190	6000	6080	5580	5500	5540
12	9240	8150	8360	5850	5310	5770	6120	5940	6030	5710	5580	5640
13	10000	9240	9920	5940	5800	5870	6050	5880	5970	5840	5710	5770
14	9950	9130	9410	6040	5920	5960	6040	5820	5930	5970	5840	5900
15	9180	8950	9080	6030	5740	5860	6020	5770	5880	6170	5970	6070
16	9900	8950	9380	5980	5780	5890	5970	5820	5900	6410	6160	6270
17	8990	7110	7950	6480	5980	6290	6100	5940	6020	6510	6290	6370
18	7500	4980	5990	8340	6420	7710	6170	6090	6130	6800	6510	6620
19	4980	3940	4500	---	---	e8270	6210	6120	6170	6990	6780	6860
20	5550	4320	4900	---	---	e8400	6260	6140	6210	7080	6890	6980
21	5680	2580	4130	---	---	e8550	6270	6170	6220	7050	6820	6940
22	---	---	e2430	---	---	e8750	6280	6180	6240	6950	6630	6830
23	---	---	e2600	---	---	e9000	6300	6160	6240	6940	6560	6690
24	---	---	e3200	---	---	e9130	6240	6090	6180	7100	6940	7000
25	---	---	e5600	8910	8430	8610	6170	6040	6110	7200	7070	7130
26	---	---	e6600	8450	8110	8260	6120	5990	6060	7180	6970	7090
27	---	---	e7160	8110	7890	7990	6080	5940	6010	8080	7100	7730
28	7600	7130	7380	7890	7420	7630	6010	5870	5940	8220	8020	8110
29	7130	6300	6640	7600	6840	7150	5940	5790	5870	8090	5630	7870
30	7600	5860	7010	6880	6550	6720	5860	5730	5800	5630	4080	4300
31	---	---	---	6590	6220	6440	5810	5680	5750	---	---	---
MONTH	---	---	6810	---	---	6400	---	---	5980	8220	4080	6200

e Estimated

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.3	14.0	18.3	17.3	13.1	14.8	14.8	7.5	11.1	12.8	6.8	9.8
2	25.4	14.9	19.3	13.8	9.4	11.6	17.6	11.6	14.3	14.0	10.3	11.9
3	24.7	14.0	18.1	13.8	8.0	10.9	16.7	9.7	13.3	12.1	.2	7.6
4	16.8	11.8	14.2	16.5	9.6	12.8	14.7	7.3	12.2	---	---	---
5	23.7	13.4	17.9	19.7	12.0	15.6	9.0	4.9	6.8	7.2	.0	3.7
6	24.8	16.4	20.1	21.4	14.8	17.9	9.5	2.8	6.0	8.5	2.5	5.4
7	22.7	14.7	18.4	22.0	15.7	18.6	11.6	4.1	7.6	7.6	3.3	5.7
8	25.1	16.1	19.7	20.1	15.6	17.6	15.0	7.8	11.0	11.6	7.6	9.1
9	25.4	17.6	21.1	19.6	13.7	16.6	---	---	---	12.1	5.7	8.4
10	28.0	18.4	22.7	22.0	14.3	17.9	---	---	---	11.0	4.8	8.0
11	25.7	19.8	22.7	22.3	15.4	18.8	---	---	---	11.5	5.8	8.6
12	26.1	20.3	23.1	22.1	15.2	18.6	---	---	---	13.0	6.1	9.4
13	25.8	19.7	22.7	22.2	15.5	18.7	---	---	---	10.8	6.2	8.5
14	25.1	18.8	22.0	22.7	15.2	18.7	8.3	5.0	6.6	9.8	4.4	7.2
15	25.4	18.9	21.8	20.5	13.8	17.1	7.0	2.2	4.7	14.1	5.7	9.7
16	22.2	16.7	20.1	20.4	13.2	16.7	6.8	2.5	4.6	15.6	10.4	12.8
17	16.7	10.5	12.4	19.4	13.6	16.3	7.7	4.6	6.1	16.4	10.8	13.1
18	15.0	11.5	12.9	20.0	13.3	16.3	7.5	4.7	6.0	13.2	10.6	11.8
19	18.2	10.0	13.9	16.7	11.0	14.1	7.9	4.0	6.0	13.0	8.3	10.7
20	19.5	10.3	14.7	16.2	9.6	12.7	6.3	3.2	4.8	10.9	6.1	8.2
21	21.6	11.6	16.2	17.6	9.8	13.4	6.6	1.7	4.1	9.0	4.9	7.1
22	21.1	13.0	16.9	16.2	11.8	14.3	7.1	2.1	4.6	11.0	7.4	9.1
23	19.8	12.5	15.8	14.5	9.8	12.1	8.3	2.7	5.5	11.9	7.4	9.5
24	18.7	11.0	14.6	12.1	6.9	9.4	9.4	4.2	6.8	8.8	5.0	6.8
25	20.6	10.7	15.3	12.6	5.6	8.9	9.0	4.5	6.9	7.3	5.2	6.3
26	22.1	13.0	17.2	13.4	5.9	9.4	11.5	6.7	8.8	6.3	3.3	4.7
27	19.7	13.2	16.4	15.2	7.7	11.2	10.1	5.9	7.9	3.4	1.9	2.4
28	21.7	14.6	17.6	15.2	8.5	11.8	10.7	4.5	7.6	2.3	1.4	1.9
29	22.2	15.2	18.4	14.6	8.5	11.4	11.5	6.2	8.9	5.4	2.0	3.4
30	17.3	11.6	13.8	13.6	8.1	10.7	11.0	7.3	9.2	---	---	---
31	14.1	11.5	12.7	---	---	---	11.2	5.6	8.5	---	---	---
MONTH	28.0	10.0	17.8	22.7	5.6	14.5	---	---	---	---	---	---

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

SPECIFIC CONDUCTANCE (MICROSIEMENS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	9240	8780	9120	6980	5870	6250	8600	8010	8300	7590	7470	7510
2	9260	8970	9120	6330	2690	3520	8700	8290	8490	7630	7490	7580
3	9160	8890	9050	5000	2920	4050	8520	8340	8440	---	---	e7640
4	9080	7650	8390	5500	4760	5150	8580	7480	7920	---	---	e7700
5	8140	7500	7930	4760	4510	4570	7770	7500	7640	---	---	e7780
6	7500	6330	6900	4880	4550	4670	7750	7460	7640	8010	7880	7950
7	7170	6550	6860	5680	4880	5250	7830	7320	7570	8060	7740	7950
8	7170	6500	6890	6150	5680	5970	8610	7530	8300	7750	7640	7690
9	7190	6590	6880	6500	6150	6290	---	---	e8400	7790	7700	7740
10	7200	6950	7090	6870	6500	6670	---	---	e8120	7870	7690	7770
11	7790	3280	6250	7220	6870	7030	---	---	e4600	7890	7760	7820
12	3280	2270	2800	7300	7220	7260	---	---	e2050	7910	7790	7850
13	5810	2260	3500	7370	7240	7280	---	---	e1860	8010	7900	7950
14	8550	5810	7190	7470	7360	7400	2640	1840	2120	8230	7980	8140
15	8530	5620	6890	7510	7440	7480	3770	2640	3270	8230	8060	8150
16	5620	5280	5400	7610	7320	7470	4390	3770	4150	8110	7980	8050
17	6490	5510	5990	7960	7520	7800	4940	4390	4660	7990	7810	7930
18	6990	6490	6790	8110	7920	8010	5570	4940	5260	7930	7860	7900
19	7360	6980	7190	8060	7830	7930	5860	5570	5700	7970	7760	7900
20	7700	7360	7510	8570	7960	8290	6130	5860	6040	8030	7910	7960
21	7800	7680	7720	8560	8430	8490	6310	6130	6220	8020	7920	7980
22	7990	7790	7870	8430	8000	8280	6480	6310	6390	8060	7990	8020
23	8080	7950	8020	8400	8180	8310	6650	6480	6580	8130	8060	8100
24	8210	8050	8120	8310	7980	8120	6790	6520	6730	8240	8130	8200
25	8300	8120	8200	8080	7970	8020	6930	6790	6880	8290	8220	8250
26	8330	8170	8240	8040	7940	7970	7010	6900	6940	9070	8910	9010
27	8520	8330	8410	7940	7720	7830	7180	6940	7100	---	---	e8410
28	8520	8360	8460	8080	7490	7900	7320	7180	7250	---	---	e8500
29	8500	8200	8440	8100	7950	8020	7370	7270	7320	---	---	e8600
30	8510	6800	7450	8250	8000	8120	7440	7330	7380	---	---	e8680
31	6800	5970	6250	---	---	---	7530	7400	7460	---	---	e8770
MONTH	9260	2260	7260	8570	2690	6980	---	---	6350	---	---	8050

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	e8880	---	---	9230	2610	2560	2590	---	---	6780
2	---	---	e8950	10800	9730	10200	2600	2580	2590	---	---	e2060
3	---	---	e9040	9920	8290	9080	2580	2310	2500	2110	1910	1990
4	---	---	e9080	8290	7940	8090	2390	2320	2360	2740	2080	2420
5	---	---	e9100	8460	8240	8370	2400	2370	2390	2740	2290	2410
6	---	---	e9120	8250	6240	7170	2640	2390	2430	3120	2380	2680
7	---	---	e9150	---	---	e6950	---	---	e3700	4170	3120	3600
8	---	---	e9100	8840	7090	8040	---	---	e4800	4740	4170	4480
9	---	---	e9080	8870	8400	8630	---	---	e5300	---	---	e4820
10	---	---	e9050	9560	8560	9190	---	---	e5950	---	---	e5350
11	---	---	e9040	8830	7500	8010	---	---	e6480	5750	5430	5610
12	---	---	e9020	7500	7130	7260	---	---	e6290	6090	5750	5870
13	---	---	e9000	7160	6610	6860	---	---	e6380	6410	6090	6250
14	---	---	e8950	6610	6330	6490	6470	6090	6200	6520	6410	6470
15	---	---	e8900	6670	6340	6430	6610	6420	6500	6540	6430	6490
16	---	---	e8850	7090	6670	6930	---	---	e7850	6580	6460	6510
17	8820	8530	8690	7320	7080	7160	---	---	8360	6700	6480	6570
18	8640	8490	8560	7540	7320	7450	9020	8490	8740	6760	6500	6680
19	8740	8590	8660	7540	7430	7480	8560	6820	7920	---	---	e6840
20	8800	8640	8730	7750	7540	7620	7680	6730	7160	---	---	e7000
21	8830	8710	8770	7980	7750	7900	7700	6670	7320	---	---	e7180
22	8840	7880	8470	8270	7910	8120	6790	6390	6600	---	---	e7390
23	8100	7670	7830	7910	4580	5810	6840	6650	6730	---	---	e7100
24	8420	8100	8320	4580	2350	3190	6800	6080	6440	8160	7680	7840
25	---	---	e9520	2940	2380	2520	6840	6040	6510	8720	8150	8310
26	---	---	e7370	2510	2460	2480	6960	6790	6860	8790	7540	8060
27	---	---	e7670	2530	2500	2510	7030	6910	6960	8810	7780	8230
28	---	---	e8310	2580	2530	2550	6950	6760	6860	8940	8810	8870
29	---	---	e8780	2620	2560	2590	6990	6810	6890	9080	8690	8920
30	---	---	---	2630	2620	2630	7130	6910	7040	8690	7610	7960
31	---	---	---	2630	2600	2610	---	---	---	7960	7170	7490
MONTH	---	---	8760	---	---	6440	---	---	5820	---	---	6070

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	---	---	---	22.0	17.5	19.2
2	---	---	---	17.3	11.6	14.2	---	---	---	18.3	16.5	17.2
3	---	---	---	14.3	8.1	9.8	---	---	---	20.9	16.7	18.5
4	---	---	---	15.6	6.1	10.6	---	---	---	23.8	18.8	21.1
5	---	---	---	15.8	9.2	12.5	---	---	---	23.4	20.7	21.9
6	---	---	---	20.2	12.0	15.9	---	---	---	27.2	21.6	24.0
7	---	---	---	19.5	16.1	17.6	---	---	---	28.5	22.9	25.4
8	14.7	7.7	11.2	18.6	12.3	15.7	---	---	---	28.1	23.2	25.4
9	16.0	8.8	12.3	19.0	11.1	15.1	---	---	---	26.2	21.2	24.0
10	17.8	10.9	14.1	16.4	10.0	13.6	---	---	---	26.6	20.0	23.1
11	14.2	8.5	11.0	15.4	6.9	10.9	---	---	---	29.6	22.5	25.7
12	12.5	5.6	9.3	16.5	8.5	12.2	---	---	---	28.0	22.5	25.5
13	13.7	9.8	11.5	18.7	9.6	13.9	---	---	---	24.1	18.3	21.5
14	14.0	7.3	10.6	18.7	13.7	15.8	21.8	14.8	17.9	23.6	16.7	20.1
15	16.2	8.6	12.1	22.0	13.6	17.3	20.4	16.8	18.4	25.6	17.2	21.1
16	14.1	10.1	12.2	17.5	7.8	12.3	20.8	12.0	16.7	26.3	21.5	23.7
17	17.7	11.0	14.0	9.1	6.7	7.9	20.1	15.5	17.7	24.6	21.6	22.9
18	16.8	9.7	13.4	11.3	6.1	8.4	25.7	17.0	21.0	26.3	21.1	23.0
19	14.3	6.3	10.1	15.8	6.2	10.8	26.8	21.0	23.7	21.3	17.6	19.1
20	14.3	8.5	11.1	17.8	8.8	13.0	23.4	16.0	19.9	27.9	16.6	21.7
21	16.6	10.3	13.1	13.9	12.4	13.1	23.8	16.7	20.1	30.8	21.3	25.5
22	17.7	14.1	15.4	14.9	11.7	13.0	20.5	16.8	18.3	30.0	22.8	26.1
23	18.6	11.0	14.8	18.2	14.0	15.7	21.4	14.9	18.1	30.0	21.9	25.7
24	20.4	12.1	16.3	17.8	14.3	16.1	25.3	16.5	20.5	31.6	22.5	26.4
25	18.5	16.3	17.5	---	---	---	26.1	18.6	22.2	30.6	24.6	27.3
26	17.2	14.5	15.7	---	---	---	25.2	18.8	21.7	30.1	22.3	26.0
27	17.1	12.8	15.0	---	---	---	24.2	18.9	21.2	28.8	23.7	26.1
28	---	---	---	---	---	---	26.0	17.3	21.3	32.6	23.2	27.5
29	---	---	---	---	---	---	24.0	18.5	20.9	31.4	23.4	27.2
30	---	---	---	---	---	---	21.4	18.6	20.0	31.5	23.5	27.1
31	---	---	---	---	---	---	---	---	---	29.9	23.7	26.5
MONTH	---	---	---	---	---	---	---	---	---	32.6	16.5	23.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.2	23.0	26.1	26.2	24.6	25.3	34.0	24.3	28.6	33.7	24.7	28.6
2	26.8	23.7	25.2	28.4	24.5	26.0	34.4	24.7	29.1	34.5	25.0	29.2
3	25.2	22.7	23.7	28.8	25.6	27.0	---	---	---	35.2	25.1	29.6
4	25.1	22.9	23.8	29.7	25.6	27.5	---	---	---	36.0	26.1	30.6
5	26.0	22.6	24.3	29.8	25.5	27.5	32.2	24.0	27.7	31.9	26.5	29.2
6	25.9	21.8	23.8	30.4	26.1	28.0	32.7	24.6	28.2	31.6	23.7	27.1
7	26.6	21.6	23.9	31.2	26.2	28.5	33.1	24.2	28.1	32.5	22.5	26.7
8	27.0	21.5	24.1	31.5	26.5	28.7	33.3	23.3	27.6	31.8	23.1	26.7
9	26.8	23.1	24.6	31.5	26.0	28.3	31.2	24.3	27.4	32.2	22.6	26.6
10	26.6	23.1	24.4	31.5	25.3	28.2	33.6	24.9	28.7	32.3	23.4	27.0
11	28.7	23.3	25.3	32.0	26.0	28.9	34.6	24.6	29.2	31.8	23.3	26.4
12	28.5	23.9	26.0	33.4	26.1	29.2	34.7	25.7	29.9	31.1	23.4	26.5
13	28.1	24.3	26.0	34.8	28.1	30.5	34.3	26.1	29.3	32.5	23.4	27.2
14	25.1	23.6	24.1	34.9	27.6	31.0	31.5	22.6	26.5	35.4	24.3	29.1
15	28.8	21.9	25.1	35.9	28.6	32.0	33.1	23.3	27.6	29.5	23.1	26.2
16	29.4	24.3	26.5	34.0	28.5	30.8	33.5	24.7	28.7	29.0	18.4	24.0
17	25.9	20.5	22.2	30.3	25.2	27.6	33.5	25.3	29.2	28.3	18.5	22.7
18	22.3	20.4	21.4	32.9	25.1	28.6	34.4	25.0	29.4	27.9	17.0	21.8
19	24.9	21.4	22.8	34.8	26.2	30.2	31.9	25.2	28.1	26.9	16.8	21.3
20	27.8	23.4	25.3	36.0	27.7	31.2	31.2	21.0	25.8	25.3	18.3	20.9
21	27.2	24.7	25.9	33.1	24.9	28.8	32.2	22.7	26.7	27.7	16.2	21.2
22	---	---	---	30.1	24.1	27.1	32.2	23.7	27.2	30.6	21.1	25.0
23	---	---	---	31.8	24.3	27.4	32.6	23.9	27.7	29.7	19.5	24.0
24	---	---	---	32.1	23.6	27.4	35.0	24.3	28.9	19.5	13.2	16.7
25	---	---	---	29.5	22.6	25.7	34.5	25.4	29.5	20.7	9.4	14.5
26	---	---	---	31.9	23.0	26.9	33.8	24.9	28.8	24.8	11.4	17.4
27	---	---	---	28.0	24.3	26.1	32.5	23.8	27.8	24.8	14.0	18.9
28	27.1	24.1	25.5	31.3	23.3	26.7	32.9	23.6	27.7	26.4	16.0	20.8
29	25.5	23.9	24.9	31.1	24.1	27.3	33.1	24.0	28.0	25.4	16.4	20.6
30	26.6	23.6	25.1	31.0	24.6	27.5	32.6	24.5	28.2	24.6	15.8	19.8
31	---	---	---	31.4	23.6	27.3	31.6	23.8	27.4	---	---	---
MONTH	---	---	---	36.0	22.6	28.2	---	---	---	36.0	9.4	24.2

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Feb 1951 to Oct 1954, Oct 1967 to Sep 1997, Oct 1999 to Sep 2000.
BIOLOGICAL DATA: Oct 1974 to Sep 1997, Oct 1999 to Sep 2000.
SPECIFIC CONDUCTANCE: Jun 1952 to Sep 1954, Oct 1967 to Sep 1991.
TEMPERATURE: Jun 1952 to Sep 1954, Oct 1967 to Sep 1991.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB												
03...	1438	27	3360	8.2	15.0	10.6	113	K11	K5	1500	1400	470
APR												
27...	1210	24	3240	8.0	20.5	8.9	107	120	80	1400	1300	430
JUN												
15...	1335	24	3230	8.0	30.5	7.3	106	90	K140	1500	1300	440
AUG												
10...	1256	4.9	3160	8.0	33.5	7.1	108	180	78	1700	1600	530

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
FEB												
03...	90	248	3	4.3	160	1400	350	.68	24	2690	<1	1.47
APR												
27...	89	224	3	3.8	160	1300	310	.65	20	2510	4	1.46
JUN												
15...	96	233	3	5.0	150	1400	320	.70	23	2600	<10	1.46
AUG												
10...	87	148	2	4.0	120	1600	200	.59	23	2680	<10	2.32

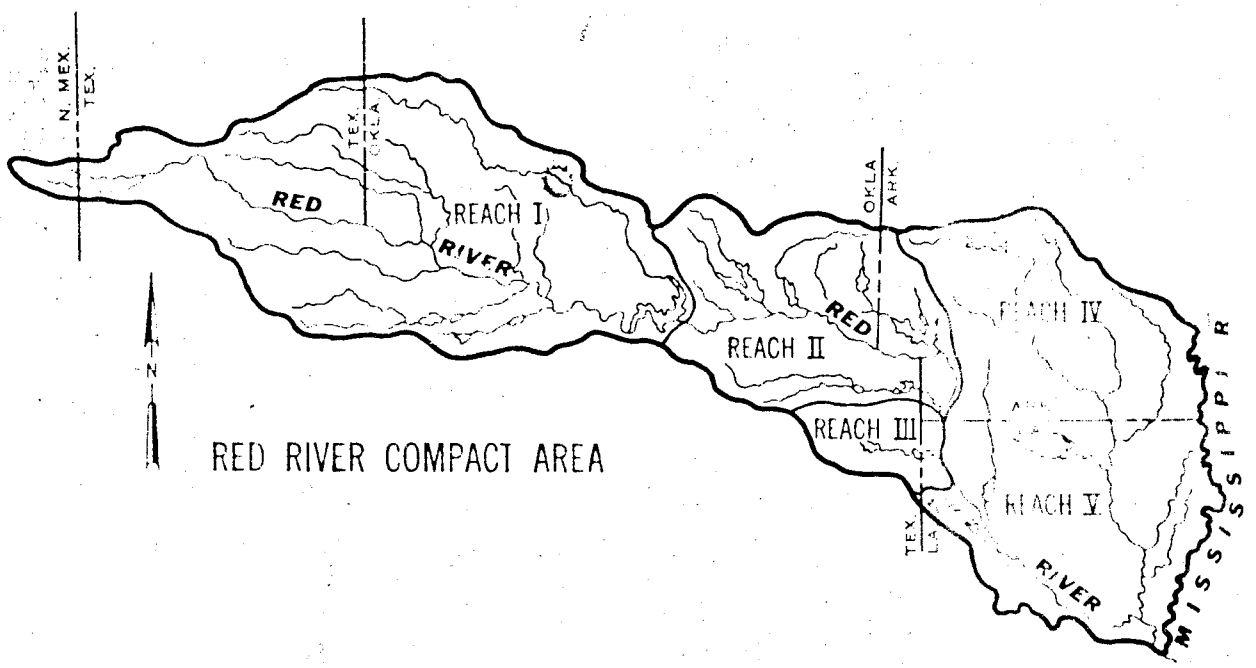
DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
FEB											
03...	.015	1.48	<.020	1.7	--	--	--	.24	<.050	<.050	<.010
APR											
27...	.012	1.47	.026	1.7	.19	.15	.18	.22	E.005	<.006	<.010
JUN											
15...	.014	1.47	.035	1.7	.20	.21	.25	.23	E.005	<.006	<.010
AUG											
10...	.023	2.35	.033	2.6	.18	.10	.13	.22	E.004	<.006	<.010

RED RIVER COMPACT

ARKANSAS - LOUISIANA - OKLAHOMA - TEXAS

APPROVED BY THE

RED RIVER COMPACT COMMISSION



MAY 12, 1978

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PREAMBLE

The States of Arkansas, Louisiana, Oklahoma, and Texas, pursuant to the acts of their respective Governors or legislatures, or both, being moved by considerations of interstate comity, have resolved to compact with respect to the water of the Red River and its tributaries. By Act of Congress, Public Law No. 346 (84th Congress, First Session), the consent of the United States has been granted for said states to negotiate and enter into a compact providing for an equitable apportionment of such water; and pursuant to that Act the President has designated the representative of the United States.

Further, the consent of Congress has been given for two or more states to negotiate and enter into agreements relating to water pollution control by the provisions of the Federal Water Pollution Control Act (P. L. 92-500, 33 U.S.C. § 1251 et seq.).

The Signatory States acting through their duly authorized Compact Commissioners, after several years of negotiations, have agreed to an equitable apportionment of the water of the Red River and its tributaries and do hereby submit and recommend that this compact be adopted by the respective legislatures and approved by Congress as hereinafter set forth:

ARTICLE I

PURPOSES

SECTION 1.01. The principal purposes of this Compact are:

(a) To promote interstate comity and remove causes of controversy between each of the affected states by governing the use, control and distribution of the interstate water of the Red River and its tributaries;

(b) To provide an equitable apportionment among the Signatory States of the water of the Red River and its tributaries;

(c) To promote an active program for the control and alleviation of natural deterioration and pollution of the water of the Red River Basin and to provide for enforcement of the laws related thereto;

(d) To provide the means for an active program for the conservation of water, protection of lives and property from floods, improvement of water quality, development of navigation and regulation of flows in the Red River Basin; and

(e) To provide a basis for state or joint state planning and action by ascertaining and identifying each state's share in the interstate water of the Red River Basin and the apportionment thereof.

ARTICLE II

GENERAL PROVISIONS

SECTION 2.01. Each Signatory State may use the water allocated to it by this Compact in any manner deemed beneficial by that state. Each state may freely administer water rights and uses in accordance with the laws of that state, but such uses shall be subject to the availability of water in accordance with the apportionments made by this Compact.

SECTION 2.02. The use of water by the United States in connection with any individual Federal project shall be in accordance with the Act of Congress authorizing the project and the water shall be charged to the state or states receiving the benefit therefrom.

SECTION 2.03. Any Signatory State using the channel of Red River or its tributaries to convey stored water shall be subject to an appropriate reduction in the amount which may be withdrawn at the point of removal to account for transmission losses.

SECTION 2.04. The failure of any state to use any portion of the water allocated to it shall not constitute relinquishment or forfeiture of the right to such use.

SECTION 2.05. Each Signatory State shall have the right to:

(a) Construct conservation storage capacity for the impoundment of water allocated by this Compact;

(b) Replace within the same area any storage capacity recognized or authorized by this Compact made unusable by any cause, including losses due to sediment storage;

(c) Construct reservoir storage capacity for the purposes of flood and sediment control as well as storage of water which is either imported or is to be exported if such storage does not adversely affect the delivery of water apportioned to any other Signatory State; and

(d) Use the bed and banks of the Red River and its tributaries to convey stored water, imported or exported water, and water apportioned according to this Compact.

SECTION 2.06. Signatory States may cooperate to obtain construction of facilities of joint benefits to such states.

SECTION 2.07. Nothing in this Compact shall be deemed to impair or affect the powers, rights, or obligations of the United States, or those claiming under its authority, in, over and to water of the Red River Basin.

SECTION 2.08. Nothing in this Compact shall be construed to include within the water apportioned by this Compact any water consumed in each state by livestock or for domestic purposes; provided, however, the storage of such water is in accordance with the laws of the respective states but any such impoundment shall not exceed 200 acre-feet, or such smaller quantity as may be provided for by the laws of each state.

SECTION 2.09. In the event any state shall import water into the Red River Basin from any other river basin, the Signatory State making the importation shall have the use of such imported water.

SECTION 2.10. Nothing in this Compact shall be deemed to:

(a) Interfere with or impair the right or power of any Signatory State to regulate within its boundaries the appropriation, use, and control of water, or quality of water, not inconsistent with its obligations under this Compact;

(b) Repeal or prevent the enactment of any legislation or the enforcement of any requirement by any Signatory State imposing any additional conditions or restrictions to further lessen or prevent the pollution or natural deterioration of water within its jurisdiction; provided nothing contained in this paragraph shall alter any provision of this Compact dealing with the apportionment of water or the rights thereto; or

(c) Waive any state's immunity under the Eleventh Amendment of the Constitution of the United States, or as constituting the consent of any state to be sued by its own citizens.

SECTION 2.11. Accounting for apportionment purposes on interstate streams shall not be mandatory under the terms of the Compact until one or more affected states deem the accounting necessary.

SECTION 2.12. For the purposes of apportionment of the water among the Signatory States, the Red River is hereby divided into the following major subdivisions:

(a) Reach I - the Red River and tributaries from the New Mexico-Texas State boundary to Denison Dam;

(b) Reach II - the Red River from Denison Dam to the point where it crosses the Arkansas-Louisiana state boundary and all tributaries which contribute to the flow of the River within this reach;

(c) Reach III - the tributaries west of the Red River which cross the Texas-Louisiana state boundary, the Arkansas-Louisiana state boundary, and those which cross both the Texas-Arkansas state boundary and the Arkansas-Louisiana state boundary.

(d) Reach IV - the tributaries east of the Red River in Arkansas which cross the Arkansas-Louisiana state boundary; and

(e) Reach V - that portion of the Red River and tributaries in Louisiana not included in Reach III or in Reach IV.

SECTION 2.13. If any part or application of this Compact shall be declared invalid by a court of competent jurisdiction, all other severable provisions and applications of this Compact shall remain in full force and effect.

SECTION 2.14. Subject to the availability of water in accordance with this Compact, nothing in this Compact shall be held or construed to alter, impair, or increase, validate, or prejudice any existing water right or right of water use that is legally recognized on the effective date of this Compact by either statutes or courts of the Signatory State within which it is located.

ARTICLE III

DEFINITIONS

SECTION 3.01. In this Compact:

(a) The States of Arkansas, Louisiana, Oklahoma, and Texas are referred to as "Arkansas," "Louisiana," "Oklahoma," and "Texas," respectively, or individually as "State" or "Signatory State," or collectively as "States" or "Signatory States."

(b) The term "Red River" means the stream below the crossing of the Texas-Oklahoma state boundary at longitude 100 degrees west.

(c) The term "Red River Basin" means all of the natural drainage area of the Red River and its tributaries east of the New Mexico-Texas state boundary and above its junction with Atchafalaya and Old Rivers.

(d) The term "water of the Red River Basin" means the water originating in any part of the Red River Basin and flowing to or in the Red River or any of its tributaries.

(e) The term "tributary" means any stream which contributes to the flow of the Red River.

(f) The term "interstate tributary" means a tributary of the Red River, the drainage area of which includes portions of two or more Signatory States.

(g) The term "intrastate tributary" means a tributary of the Red River, the drainage area of which is entirely within a single Signatory State.

(h) The term "Commission" means the agency created by Article IX of this Compact for the administration thereof.

(i) The term "pollution" means the alteration of the physical, chemical, or biological characteristics of water by the acts or instrumentalities of man which create or are likely to result in a material and adverse effect upon human beings, domestic or wild animals, fish and other aquatic life, or adversely affect any other lawful use of such water; provided, that for the purposes of this Compact,

"pollution" shall not mean or include "natural deterioration."

(j) The term "natural deterioration" means the material reduction in the quality of water resulting from the leaching of solubles from the soils and rocks through or over which the water flows naturally.

(k) The term "designated water" means water released from storage, paid for by non-Federal interests, for delivery to a specific point of use or diversion.

(l) The term "undesignated water" means all water released from storage other than "designated water."

(m) The term "conservation storage capacity" means that portion of the active capacity of reservoirs available for the storage of water for subsequent beneficial use, and it excludes any portion of the capacity of reservoirs allocated solely to flood control and sediment control, or either of them.

(n) The term "runoff" means both the portion of precipitation which runs off the surface of a drainage area and that portion of the precipitation that enters the streams after passing through the portions of the earth.

ARTICLE IV

APPORTIONMENT OF WATER - REACH I

OKLAHOMA - TEXAS

Subdivison of Reach I and apportionment of water therein.

Reach I of the Red River is divided into topographical subbasins, with the water therein allocated as follows:

SECTION 4.01. Subbasin 1 - Interstate streams - Texas.

(a) This includes the Texas portion of Buck Creek, Sand (Lebos) Creek, Salt Fork Red River, Elm Creek, North Fork Red River, Sweetwater Creek, and Washita River, together with all their tributaries in Texas which lie west of the 100th Meridian.

(b) The annual flow within this subbasin is hereby apportioned sixty (60) percent to Texas and forty (40) percent to Oklahoma.

SECTION 4.02. Subbasin 2 - Intrastate and Interstate streams - Oklahoma.

(a) This subbasin is composed of all tributaries of the Red River in Oklahoma and portions thereof upstream to the Texas-Oklahoma state boundary at longitude 100 degrees west, beginning from Denison Dam and upstream to and including Buck Creek.

(b) The State of Oklahoma shall have free and unrestricted use of the water of this subbasin.

SECTION 4.03. Subbasin 3 - Intrastate streams - Texas.

(a) This includes the tributaries of the Red River in Texas, beginning from Denison Dam and upstream to and including Prairie Dog Town Fork Red River.

(b) The State of Texas shall have free and unrestricted use of the water in this subbasin.

SECTION 4.04. Subbasin 4 - Mainstem of the Red River and Lake Texoma.

(a) This subbasin includes all of Lake Texoma and the Red River beginning at Denison Dam and

continuing upstream to the Texas-Oklahoma state boundary at longitude 100 degrees west.

(b) The storage of Lake Texoma and flow from the mainstem of the Red River into Lake Texoma is apportioned as follows:

(1) Oklahoma 200,000 acre-feet and Texas 200,000 acre-feet, which quantities shall include existing allocations and uses; and

(2) Additional quantities in a ratio of fifty (50) percent to Oklahoma and fifty (50) percent to Texas.

SECTION 4.05. Special Provisions.

(a) Texas and Oklahoma may construct, jointly or in cooperation with the United States, storage or other facilities for the conservation and use of water; provided that any facilities constructed on the Red River boundary between the two states shall not be inconsistent with the Federal legislation authorizing Denison Dam and Reservoir project.

(b) Texas shall not accept for filing, or grant a permit, for the construction of a dam to impound water solely for irrigation, flood control, soil conservation, mining and recovery of minerals, hydroelectric power, navigation, recreation and pleasure, or for any other purpose other than for domestic, municipal, and industrial water supply, on the mainstem of the North Fork Red River or any of its tributaries within Texas above Lugert-Altus Reservoir until the date that imported water, sufficient to meet the municipal and irrigation needs of Western Oklahoma is provided, or until January 1, 2000, which ever occurs first.

ARTICLE V

APPORTIONMENT OF WATER - REACH II

ARKANSAS, OKLAHOMA, TEXAS AND LOUISIANA

Subdivision of Reach II and allocation of water therein.

Reach II of the Red River is divided into topographic subbasins, and the water therein is allocated as follows:

SECTION 5.01. Subbasin 1 - Intrastate streams - Oklahoma.

(a) This subbasin includes those streams and their tributaries above existing, authorized or proposed last downstream major damsites, wholly in Oklahoma and flowing into Red River below Denison Dam and above the Oklahoma-Arkansas state boundary. These streams and their tributaries with existing, authorized or proposed last downstream major damsites are as follows:

Stream	Site	Ac-ft	Location	
			Latitude	Longitude
Island-Bayou	Albany	85,200	33°51.5'N	96°11.4'W
Blue River	Durant	147,000	33°55.5'N	96°04.2'W
Boggy River	Boswell	1,243,800	34°01.6'N	95°45.0'W
Kiamichi River	Hugo	240,700	34°01.0'N	95°22.6'W

(b) Oklahoma is apportioned the water of this subbasin and shall have unrestricted use thereof.

SECTION 5.02. Subbasin 2 - Intrastate streams - Texas.

(a) This subbasin includes those streams and their tributaries above existing authorized or proposed last downstream major damsites, wholly in Texas and flowing into Red River below Denison Dam and above the Texas-Arkansas state boundary. These streams and their tributaries with existing, authorized or proposed last downstream major damsites are as follows:

Stream	Site	Ac-ft	Location	
			Latitude	Longitude
Shawnee Creek	Randall Lake	5,400	33°48.1'N	96°34.8'W
Brushy Creek	Valley Lake	15,000	33°38.7'N	96°21.5'W
Bois d'Arc Creek	New Bonham Reservoir	130,600	33°42.9'N	95°58.2'W
Coffee Mill Creek	Coffee Mill Lake	8,000	33°44.1'N	95°58.0'W
Sandy Creek	Lake Crockett	3,900	33°44.5'N	95°55.5'W
Sanders Creek	Pat Mayse	124,500	33°51.2'N	95°32.9'W
Pine Creek	Lake Crook	11,011	33°43.7'N	95°34.0'W
Big Pine Creek	Big Pine Lake	138,600	33°52.0'N	95°11.7'W
Pecan Bayou	Pecan Bayou	625,000	33°41.1'N	94°58.7'W
Mud Creek	Liberty Hill	97,700	33°33.0'N	94°29.3'W
Mud Creek	KVW Ranch Lakes (3)	3,440	33°34.8'N	94°27.3'W

(b) Texas is apportioned the water of this subbasin and shall have unrestricted use thereof.

SECTION 5.03. Subbasin 3 - Interstate Streams - Oklahoma and Arkansas.

(a) This subbasin includes Little River and its tributaries above Millwood Dam.

(b) The States of Oklahoma and Arkansas shall have free and unrestricted use of the water of this subbasin within their respective states, subject, however, to the limitation that Oklahoma shall allow a quantity of water equal to 40 percent of the total runoff originating below the following existing, authorized or proposed last downstream major damsites in Oklahoma to flow into Arkansas:

Stream	Site	Ac-ft	Location	
			Latitude	Longitude
Little River	Pine Creek	70,500	34°06.8'N	95°04.9'W
Glover Creek	Lukfata	258,600	34°08.5'N	94°55.4'W
Mountain Fork River	Broken Bow	470,100	34°08.9'N	94°41.2'W

(c) Accounting will be on an annual basis unless otherwise deemed necessary by the States of Arkansas and Oklahoma.

SECTION 5.04. Subbasin 4 - Interstate streams - Texas and Arkansas.

(a) This subbasin shall consist of those streams and their tributaries above existing, authorized or proposed last downstream major damsites, originating in Texas and crossing the Texas-Arkansas state boundary before flowing into the Red River in Arkansas. These streams and their tributaries with existing, authorized or proposed last downstream major damsites are as follows:

Stream	Site	Ac-ft	Location	
			Latitude	Longitude
McKinney Bayou Trib.	Bringle Lake	3,052	33°30.6'N	94°06.2'W
Barkman Creek	Barkman Reservoir	15,900	33°29.7'N	94°10.3'W
Sulphur River	Texarkana	386,900	33°18.3'N	94°09.6'W

(b) The State of Texas shall have the free and unrestricted use of the water of this subbasin.

SECTION 5.05. Subbasin 5 - Mainstem of the Red River and tributaries.

(a) This subbasin includes that portion of the Red River, together with its tributaries, from Denison Dam down to the Arkansas-Louisiana state boundary, excluding all tributaries included in the other four subbasins of Reach II.

(b) Water within this subbasin is allocated as follows:

(1) The Signatory States shall have equal rights to the use of runoff originating in subbasin 5 and undesignated water flowing into subbasin 5, so long as the flow of the Red River at the Arkansas-Louisiana state boundary is 3,000 cubic feet per second or more, provided no state is entitled to more than 25 percent of the water in excess of 3,000 cubic feet per second.

(2) Whenever the flow of the Red River at the Arkansas-Louisiana state boundary is less than 3,000 cubic feet per second, but more than 1,000 cubic feet per second, the States of Arkansas, Oklahoma, and Texas shall

allow to flow into the Red River for delivery to the State of Louisiana a quantity of water equal to 40 percent of the total weekly runoff originating in subbasin 5 and 40 percent of undesignated water flowing into subbasin 5; provided, however, that this requirement shall not be interpreted to require any state to release stored water.

(3) Whenever the flow of the Red River at the Arkansas-Louisiana state boundary falls below 1,000 cubic feet per second, the States of Arkansas, Oklahoma, and Texas shall allow a quantity of water equal to all the weekly runoff originating in subbasin 5 and all undesignated water flowing into subbasin 5 within their respective states to flow into the Red River as required to maintain a 1,000 cubic foot per second flow at the Arkansas-Louisiana state boundary.

(c) Whenever the flow at Index, Arkansas, is less than 526 c.f.s., the states of Oklahoma and Texas shall each allow a quantityof water equal to 40 percent of the total weekly runoff originating in subbasin 5 within their respective states to flow into the Red River; provided however, this provision shall be invoked only at the request of Arkansas, only after Arkansas has ceased all diversions from the Red River itself in Arkansas above Index, and only if the provisions of Sub-sections 5.05 (b) (2) and (3) have not caused a limitation of diversions in subbasin 5.

(d) No state guarantees to maintain a minimum low flow to a downstream state.

SECTION 5.06. Special Provisions.

(a) Reservoirs within the limits of Reach II, subbasin 5, with a conservation storage capacity of 1,000 acre feet or less in existence or authorized on the date of the Compact pursuant to the rights and privileges granted by a Signatory State authorizing such reservoirs, shall be exempt from the provisions of Section 5.05; provided, if any right to store water in, or use water from, an existing exempt reservoir expires or is cancelled after the effective date of the Compact the exemption for such rights provided by this section shall be lost.

(b) A Signatory State may authorize a change in the purpose or place of use of water from a reservoir exempted by subparagraph (a) of this section without losing that exemption, if the quantity of authorized use and storage is not increased.

(c) Additionally, exemptions from the provisions of Section 5.05 shall not apply to direct diversions from Red River to off-channel reservoirs or lands.

ARTICLE VI

APPORTIONMENT OF WATER - REACH III

ARKANSAS, LOUISIANA, AND TEXAS

Subdivision of Reach III and allocation of water therein.

Reach III of the Red River is divided into topographic subbasins, and the water therein allocated, as follows:

SECTION 6.01. Subbasin 1 - Interstate streams - Arkansas and Texas.

(a) This subbasin includes the Texas portion of those streams crossing the Arkansas-Texas state boundary one or more times and flowing through Arkansas into Cypress Creek-Twelve Mile Bayou watershed in Louisiana.

(b) Texas is apportioned sixty (60) percent of the runoff of this subbasin and shall have unrestricted use thereof; Arkansas is entitled to forty (40) percent of the runoff of this subbasin.

SECTION 6.02. Subbasin 2 - Interstate streams - Arkansas and Louisiana.

(a) This subbasin includes the Arkansas portion of those streams flowing from Subbasin 1 into Arkansas, as well as other streams in Arkansas which cross the Arkansas-Louisiana state boundary one or more times and flow into Cypress Creek-Twelve Mile Bayou watershed in Louisiana.

(b) Arkansas is apportioned sixty (60) percent of the runoff of this subbasin and shall have unrestricted use thereof; Louisiana is entitled to forty (40) percent of the runoff of this subbasin.

SECTION 6.03. Subbasin 3 - Interstate streams - Texas and Louisiana

(a) This subbasin includes the Texas portion of all tributaries crossing the Texas-Louisiana state boundary one or more times and flowing into Caddo Lake, Cypress Creek-Twelve Mile Bayou or Cross Lake, as well as the Louisiana portion of such tributaries.

(b) Texas and Louisiana within their respective boundaries shall each have the unrestricted use

of the water of this subbasin subject to the following allocation:

(1) Texas shall have the unrestricted right to all water above Marshall, Lake O' the Pines, and Black Cypress damsites; however, Texas shall not cause runoff to be depleted to a quantity less than that which would have occurred with the full operation of Franklin County, Titus County, Ellison Creek, Johnson Creek, Lake O' the Pines, Marshall, and Black Cypress Reservoirs constructed, and those other impoundments and diversions existing on the effective date of this Compact. Any depletions of runoff in excess of the depletions described above shall be charged against Texas' apportionment of the water in Caddo Reservoir.

(2) Texas and Louisiana shall each have the unrestricted right to use fifty (50) percent of the conservation storage capacity in the present Caddo Lake for the impoundment of water for state use, subject to the provision that supplies for existing uses of water from Caddo Lake, on date of Compact, are not reduced.

(3) Texas and Louisiana shall each have the unrestricted right to fifty (50) percent of the conservation storage capacity of any future enlargement of Caddo Lake, provided, the two states may negotiate for the release of each state's share of the storage space on terms mutually agreed upon by the two states after the effective date of this Compact.

(4) Inflow to Caddo Lake from its drainage area downstream from Marshall, Lake O' the Pines, and Black Cypress damsites and downstream from other last downstream dams in existence on the date of the signing of the Compact document by the Compact Commissioners, will be allowed to continue flowing into Caddo Lake except that any manmade depletions to this inflow by Texas will be subtracted from the Texas share of the water in Caddo Lake.

(c) In regard to the water of interstate streams which do not contribute to the inflow to Cross Lake or Caddo Lake, Texas shall have the unrestricted right to divert and use this water on the basis of a division of runoff above the state boundary of sixty (60) percent to Texas and forty (40) percent to Louisiana.

(d) Texas and Louisiana will not construct improvements on the Cross Lake watershed in either state that will affect the yield of Cross Lake; provided, however, this subsection shall be subject to the provisions of Section 2.08.

SECTION 6.04. Subbasin 4 - Intrastate streams - Louisiana.

(a) This subbasin includes that area of Louisiana in Reach III not included within any other subbasin.

(b) Louisiana shall have free and unrestricted use of the water of this subbasin.

ARTICLE VII

APPORTIONMENT OF WATER - REACH IV

ARKANSAS AND LOUISIANA

Subdivision of Reach IV and allocation of water therein.

Reach IV of the Red River is divided into topographic subbasins, and the water therein allocated as follows:

SECTION 7.01. Subbasin 1 - Intrastate streams - Arkansas.

(a) This subbasin includes those streams and their tributaries above last downstream major damsites originating in Arkansas and crossing the Arkansas-Louisiana state boundary before flowing into the Red River in Louisiana. Those major last downstream damsites are as follows:

Stream	Site	Ac-ft	Location	
			Latitude	Longitude
Ouachita River	Lake Catherine	19,000	34°26.6'N	93°01.6'W
Caddo River	DeGray Lake	1,377,000	34°13.2'N	93°06.6'W
Little Missouri River	Lake Greeson	600,000	34°08.9'N	93°42.9'W
Alum Fork, Saline River	Lake Winona	63,264	32°47.8'N	92°51.0'W

(b) Arkansas is apportioned the waters of this subbasin and shall have unrestricted use thereof.

SECTION 7.02. Subbasin 2 - Interstate Streams - Arkansas and Louisiana.

(a) This subbasin shall consist of Reach IV less subbasin 1 as defined in Section 7.01 (a) above.

(b) The State of Arkansas shall have free and unrestricted use of the water of this reach subject to the limitation that Arkansas shall allow a quantity of water equal to forty (40) percent of the weekly runoff originating below or flowing from the last downstream major damsite to flow into Louisiana. Where there are no designated last downstream damsites, Arkansas shall allow a quantity of

water equal to forty (40) percent of the total weekly runoff originating above the state boundary to flow into Louisiana. Use of water in this subbasin is subject to low flow provisions of subparagraph 7.02(b).

SECTION 7.03. Special Provisions.

(a) Arkansas may use the beds and banks of segments of Reach IV for the purpose of conveying its share of water to designated downstream diversions.

(b) The State of Arkansas does not guarantee to maintain a minimum low flow for Louisiana in Reach IV. However, on the following streams when the use of water in Arkansas reduces the flow at the Arkansas-Louisiana state boundary to the following amounts:

(1) Ouachita - 780 cfs

(2) Bayou Bartholomew - 80 cfs

(3) Boeuf River - 40 cfs

(4) Bayou Macon - 40 cfs

the State of Arkansas pledges to take affirmative steps to regulate the diversions of runoff originating or flowing into Reach IV in such a manner as to permit an equitable apportionment of the runoff as set out herein to flow into the State of Louisiana. In its control and regulation of the water of Reach IV any adjudication or order rendered by the State of Arkansas or any of its instrumentalities or agencies affecting the terms of this Compact shall not be effective against the State of Louisiana nor any of its citizens or inhabitants until approved by the Commission.

ARTICLE VIII

APPORTIONMENT OF WATER - REACH V

SECTION 8.01. Reach V of the Red River consists of the mainstem Red River and all of its tributaries lying wholly within the State of Louisiana. The State of Louisiana shall have free and unrestricted use of the water of this subbasin.

ARTICLE IX

ADMINISTRATION OF THE COMPACT

SECTION 9.01. There is hereby created an interstate administrative agency to be known as the "Red River Compact Commission," hereinafter called the "Commission." The Commission shall be composed of two representatives from each Signatory State who shall be designated or appointed in accordance with the laws of each state, and one Commissioner representing the United States, who shall be appointed by the President. The Federal Commissioner shall be the Chairman of the Commission but shall not have the right to vote. The failure of the President to appoint a Federal Commissioner will not prevent the operation or effect of this Compact, and the eight representatives from the Signatory States will elect a Chairman for the Commission.

SECTION 9.02. The Commission shall meet and organize within 60 days after the effective date of this Compact. Thereafter, meetings shall be held at such times and places as the Commission shall decide.

SECTION 9.03. Each of the two Commissioners from each state shall have one vote; provided, however, that if only one representative from a state attends he is authorized to vote on behalf of the absent Commissioner from that state. Representatives from three states shall constitute a quorum. Any action concerned with administration of this Compact or any action requiring compliance with specific terms of this Compact shall require six concurring votes. If a proposed action of the Commission affects existing water rights in a state, and that action is not expressly provided for in this Compact, eight concurring votes shall be required.

SECTION 9.04.

(a) The salaries and personal expenses of each state's representative shall be paid by the government that it represents, and the salaries and personal expenses of the Federal Commissioner will be paid for by the United States.

(b) The Commission's expenses for any additional stream flow gauging stations shall be equitably apportioned among the states involved in the reach in which the stream flow gaging stations are located.

(c) All other expenses incurred by the Commission shall be borne equally by the Signatory States and shall be paid by the Commission out of the "Red River

Compact Commission Fund." Such Fund shall be initiated and maintained by equal payments of each state into the fund. Disbursement shall be made from the fund in such manner as may be authorized by the Commission. Such fund shall not be subject to audit and accounting procedures of the state; however, all receipts and disbursements of the fund by the Commission shall be audited by a qualified independent public accountant at regular intervals, and the report of such audits shall be included in and become a part of the annual report of the Commission. Each state shall have the right to make its own audit of the accounts of the Commission at any reasonable time.

ARTICLE X

POWERS AND DUTIES OF THE COMMISSION

SECTION 10.01. The Commission shall have the power to:

(a) Adopt rules and regulations governing its operation and enforcement of the terms of the Compact;

(b) Establish and maintain an office for the conduct of its affairs and, if desirable, from time to time, change its location;

(c) Employ or contract with such engineering, legal, clerical and other personnel as it may determine necessary for the exercise of its functions under this Compact without regard to the Civil Service Laws of any Signatory State; provided that such employees shall be paid by and be responsible to the Commission and shall not be considered employees of any Signatory State;

(d) Acquire, use and dispose of such real and personal property as it may consider necessary;

(e) Enter into contracts with appropriate State or Federal agencies for the collection, correlation and presentation of factual data, for the maintenance of records and for the preparation of reports;

(f) Secure from the head of any department or agency of the Federal or State government such information as it may need or deem to be useful for carrying out its functions and as may be available to or procurable by the department or agency to which the request is addressed; provided such information is not privileged and the department or agency is not precluded by law from releasing same.

(g) Make findings, recommendations or reports in connection with carrying out the purposes of this Compact, including, but not limited to, a finding that a Signatory State is or is not in violation of any of the provisions of this Compact. The Commission is authorized to make

such investigations and studies, and to hold such hearings as it may deem necessary for said purposes. It is authorized to make and file official certified copies of any of its findings, recommendations or reports with such officers or agencies of any Signatory State, or the United States, as may have any interest in or jurisdiction over the subject matter. The making of findings, recommendations, or reports by the Commission shall not be a condition precedent to the instituting or maintaining of any action or proceeding of any kind by a Signatory State in any court or tribunal, or before any agency or officer, for the protection of any right under this Compact or for the enforcement of any of its provisions; and

(h) Print or otherwise reproduce and distribute its proceedings and reports.

SECTION 10.02. The Commission shall:

(a) Cause to be established, maintained, and operated such stream, reservoir and other gaging stations as are necessary for the proper administration of the Compact;

(b) Cause to be collected, analyzed and reported such information on stream flows, water quality, water storage and such other data as are necessary for the proper administration of the Compact;

(c) Perform all other functions required of it by the Compact and do all things necessary, proper and convenient in the performance of its duties thereunder;

(d) Prepare and submit to the governor of each of the Signatory States a budget covering the anticipated expenses of the Commission for the following fiscal biennium;

(e) Prepare and submit an annual report to the governor of each Signatory State and to the President of the United States covering the activities of the Commission for the preceding fiscal year, together with an accounting of all funds received and expended by it in the conduct of its work;

(f) Make available to the governor or to any official agency of a Signatory State or to any authorized representative of the United States, upon request, any information within its possession;

(g) Not incur any obligation in excess of the unencumbered balance of its funds, nor pledge the credit of any of the Signatory States; and

(h) Make available to a Signatory State or the United States in any action arising under this Compact, without subpoena, the testimony of any officer or employee of the Commission having knowledge of any relevant facts.

ARTICLE XI

POLLUTION

SECTION 11.01. The Signatory States recognize that the increase in population and the growth of industrial, agricultural, mining and other activities combined with natural pollution sources may lead to a diminution of the quality of water in the Red River Basin which may render the water harmful or injurious to the health and welfare of the people and impair the usefulness or public enjoyment of the water for beneficial purposes, thereby resulting in adverse social, economic, and environmental impacts.

SECTION 11.02. Although affirming the primary duty and responsibility of each Signatory State to take appropriate action under its own laws to prevent, diminish, and regulate all pollution sources within its boundaries which adversely affect the water of the Red River Basin, the states recognize that the control and abatement of the naturally-occurring salinity sources as well as, under certain circumstances, the maintenance and enhancement of the quality of water in the Red River Basin may require the cooperative action of all states.

SECTION 11.03. The Signatory States agree to cooperate with agencies of the United States to devise and effectuate means of alleviating the natural deterioration of the water of the Red River Basin.

SECTION 11.04. The Commission shall have the power to cooperate with the United States, the Signatory States and other entities in programs for abating and controlling pollution and natural deterioration of the water of the Red River Basin, and to recommend reasonable water quality objectives to the states.

SECTION 11.05. Each Signatory State agrees to maintain current records of waste discharges into the Red River Basin and the type and quality of such discharges, which records shall be furnished to the Commission upon request.

SECTION 11.06. Upon receipt of a complaint from the governor of a Signatory State that the interstate water of the Red River Basin in which it has an interest are being materially and adversely affected by pollution and that the state in which the pollution originates has failed after reasonable notice to take appropriate abatement measures, the Commission shall make such findings as are appropriate and thereafter provide such findings to the governor of the state in which such pollution originates and request appropriate corrective action. The Commission, however, shall not take any action with respect to pollution which adversely affects only the state in which such pollution originates.

SECTION 11.07. In addition to its other powers set forth under this Article, the Commission shall have the authority, upon receipt of six concurring votes, to utilize applicable Federal statutes to institute legal action in its own name against the person or entity responsible for interstate pollution problems; provided, however, sixty (60) days before initiating legal action the Commission shall notify the Governor of the state in which the pollution source is located to allow that state an opportunity to initiate action in its own name.

SECTION 11.08. Without prejudice to any other remedy available to the Commission, or any Signatory State, any state which is materially and adversely affected by the pollution of the water of the Red River Basin by pollution originating in another Signatory State may institute a suit against any individual, corporation, partnership, or association, or against any Signatory State or political or governmental subdivision thereof, or against any officer, agency, department, bureau, district or instrumentality of or in any Signatory State contributing to such pollution in accordance with applicable Federal statutes. Nothing herein shall be construed as depriving any persons of any rights of action relating to pollution which such person would have if this Compact had not been made.

ARTICLE XII

TERMINATION AND AMENDMENT OF COMPACT

SECTION 12.01. This Compact may be terminated at any time by appropriate action of the legislatures of all of the four Signatory States. In the event of such termination, all rights established under it shall continue unimpaired.

SECTION 12.02. This Compact may be amended at any time by appropriate action of the legislatures of all Signatory States that are affected by such amendment. The consent of the United States Congress must be obtained before any such amendment is effective.

ARTICLE XIII

RATIFICATION AND EFFECTIVE DATE OF COMPACT

SECTION 13.01. Notice of ratificaton of this Compact by the legislature of each Signatory State shall be given by the governor thereof to the governors of each of the other Signatory States and to the President of the United States. The President is hereby requested to give notice to the governors of each of the Signatory States of the consent to this Compact by the Congress of the United States.

SECTION 13.02. This Compact shall become effective, binding and obligatory when, and only when:

(a) It has been duly ratified by each of the Signatory States; and

(b) It has been consented to by an Act of the Congress of the United States, which Act provides that:

> Any other statute of the United States to the contrary notwithstanding, in any case or controversy:
>
> > which involves the construction or application of this Compact;
> >
> > in which one or more of the Signatory States to this Compact is a plaintiff or plaintiffs; and
> >
> > which is within the judicial power of the United States as set forth in the Constitution of the United States;
>
> and without any requirement, limitation or regard as to the sum or value of the matter in controversy, or of the place of residence or citizenship of, or of the nature, character or legal status of, any of the other proper parties plaintiff or defendant in such case or controversy:
>
> > The consent of Congress is given to name and join the United States as a party defendant or otherwise in any such case or controversy in the Supreme Court of the United States if the United States is an indispensable party thereto.

SECTION 13.03. The United States District Courts shall have original jurisdiction (concurrent with that of the Supreme Court of the United States, and concurrent with that of any other Federal or state court, in matters in which the Supreme Court, or other court has original jurisdiction) of any case or controversy involving the application or construction of this Compact; that said jurisdiction shall include, but not be limited to, suits between Signatory States; and that the venue of such case or controversy may be brought in any judicial district in which the acts complained of (or any portion thereof) occur.

SIGNED AND APPROVED on the 12th day of May 1978 at Denison Dam.

John P. Saxton, Commissioner
State of Arkansas

Arthur R. Theis, Commissioner
State of Louisiana

Orville B. Saunders, Commissioner
State of Oklahoma

Fred Parkey, Commissioner
State of Texas

R. C. MARSHALL, Major General
Representative
United States of America

RULES FOR THE INTERNAL ORGANIZATION of the RED RIVER COMPACT COMMISSION

(As Amended April 25, 1984, April 30, 1991, May 4, 1993, and March 24, 1994)

ARTICLE I
THE COMMISSION

1.1 The Commission is the "Red River Compact Commission," which is referred to in Article X of the Red River Compact.

1.2 The credentials of each Commissioner shall be filed with both the Chairman and the Secretary of the Commission. When the credentials of a new Commissioner are received, the Secretary shall promptly notify each of the other Commissioners of the name and address of the new Commissioner.

1.3 Each Commissioner shall advise in writing the office of the Commission as to his address at which all official notices and other communications of the Commission shall be sent to him. Any change of address shall be promptly communicated in writing to the office of the Commission.

1.4 Persons designated to substitute for duly appointed Commissioners at meetings of the Compact Commission shall present the Commission with credentials of authority by letter, or other form of appointment acceptable to the Commission, which states the scope or limitations of the appointment, together with a copy of the state or federal law or Attorney General's opinion which authorizes the appointment.

ARTICLE II
OFFICERS

2.1 The officers of the Commission shall be a Chairman, a Vice-Chairman, Secretary and a Treasurer.

2.2 The Commissioner representing the United States shall be the Chairman of the Commission. The Chairman or the designated representative of the Chairman, shall preside at meetings of the Commission. His duties shall be those usually imposed upon such officers and as may be assigned by these rules or by the Commission from time to time.

2.3 The Vice-Chairman shall be elected at the annual meeting from the Commissioners of the host state for the coming year as reflected by the minutes, and shall hold office for a term of one year, beginning on July 1 following the election, or until a successor is elected. The Vice-Chairman shall serve as Chairman in the event the President of the United States fails to appoint a Federal Commissioner, or in the absence of the Federal Commissioner or the designated representative of the Federal Commissioner.

2.4 The Secretary shall be selected at the annual meeting by the Commission from the state designated to host the next annual meeting as reflected in the minutes. The Secretary shall serve

for the term of one year, beginning on July 1 following the selection, and perform the duties as the Commission shall direct. In case of a vacancy in the office of the Secretary, the Commission shall select a new Secretary as expeditiously as possible.

2.5 The Treasurer shall be selected by the Commission for a term of one year, beginning on July 1 following the selection. The Treasurer shall furnish a fidelity bond, the cost of which shall be paid by the Commission. The Treasurer shall receive, hold and disburse all funds which come into the his hands of the Treasurer.

2.6 The Secretary and Treasurer may be members of the Commission, and their offices may be combined by the Commission. Any one person may hold both offices.

2.7 Whenever there is a permanent change in the Commander of the Lower Mississippi Valley Division, Department of the Army Corps of Engineers, or its counterpart in any future reorganization of the Corps, the Vice-Chairman shall immediately request the President to appoint the new Commander as the U.S. Commissioner to the Compact Commission.

ARTICLE III
PRINCIPAL OFFICE

3.1 The principal office of the Commission shall be either the office of the Chairman or the Secretary, as the Commission shall direct.

3.2 Official books and records of the Commission shall be kept at the principal office.

ARTICLE IV
MEETINGS

4.1 The annual meeting of the Commission shall be held on the last Tuesday of April of each year.

4.2 Special meetings of the Commission may be called by the Chairman at any time. Upon the written request of each of the Commissioners of two states setting forth the matters to be considered at such meeting, the chairman shall call a special meeting.

4.3 Reasonable notice of all special meetings of the Commission shall be sent by the Chairman, to all members of the Commission by ordinary mail at least ten days in advance of each meeting and notice shall state the purpose thereof.

4.4 Emergency meetings of the Commission may be called by the Chairman at any time upon the concurrence of at least two states and such meetings may be conducted by long-distance telephone conference call or other electronic means. Any such long-distance telephone conference call or other electronic communication shall be recorded and made available for public inspection in accordance with the laws of the respective signatory states. Each of the signatory states shall be represented by at least one Commissioner during such an

emergency conference and concur in the action.

An emergency is defined as a situation involving an eminent threat of injury to persons or damage to property or eminent financial loss when the time requirements for public notice and travel to a special meeting would make such procedure and travel impractical and increase the likelihood of injury or damage or eminent financial loss.

4.5 Notice to the public shall be given of all Commission meetings. Except as otherwise provided, the Chairman shall furnish notice of all meetings to the Commissioners of each signatory state, whose responsibility it shall be to give said notice to the public in accordance with the laws of their respective states. In the event of an emergency meeting held by telephone or other electronic communication, no advance notice is required.

All meetings of the Commission shall be held at the principal office unless another place shall be agreed upon by the Commissioners.

4.6 Minutes of the Commission shall be preserved in suitable manner. Minutes, until approved, shall not be official and shall be furnished only to members of the Commission, its employees and committees.

4.7 Commissioners from three of the signatory states shall constitute a quorum. However, if an emergency meeting is conducted as provided for in rule 4.4, or if a proposed action of the Commission affects existing water rights in a state, and that actions is not expressly provided for in the Compact, eight concurring votes shall be required. Any other actions concerned with the administration of the Compact or requiring compliance with specific terms of the Compact shall require six concurring votes.

4.8 At each regular or annual meeting of the Commission, the order of business, unless agreed otherwise, shall be as follows:

Call to order;
Approval of Agenda;
Approval of the minutes;
Report of Chairman;
Report of Secretary;
Report of the Treasurer;
Report of the Commissioners;
Report of Committees;
Unfinished business;
New business;
Adjournment;

4.9 All meetings of the Commission, except executive sessions and except as otherwise provided, shall be open to the public. Executive sessions shall be open only to members of the Commission and such advisers as may be designated by each member and employees as permitted by the Commission; provided, however, that the Commission may call witnesses before it when in such sessions.
The Commission may hold executive sessions only for the purposes of discussing;

(n) The employment, appointment, promotion, demotion, disciplining or resignation of a Commission employee or employees, members, advisers, or committee members.

(o) Pending or contemplated litigation, settlement offers, and matters where the duty of the Commission's counsel to his client, pursuant to the Code of Professional Responsibility, clearly conflicts with the public's right to know.

(p) The report, development, or course of action regarding security, personnel, plans, or devices.

No executive session may be held except on a vote, taken in public by a majority of a quorum of the members present. At least one Commissioner from each of the signatory states must agree to the holding of an executive session.

Any motion or other decision considered or arrived at in executive session shall be voidable unless, following the executive session, the Commission reconvenes in public session and presents and votes on such motion or other decision.

4.10 In the absence of a Chairman and Vice-Chairman, all of the Commissioners from any two (2) states may call an emergency or a special meeting of the Compact Commission.

ARTICLE V
COMMITTEES

5.1 There may be the following standing committees:

(a) Budget Committee;
(b) Engineering Committee;
(c) Environmental and Natural Resources Committee;
(d) Legal Committee.

5.2 The committees shall have the following duties:

(a) The Budget Committee shall prepare the annual budget and shall advise the Commission on all fiscal matters that may be referred to it.

(b) The Engineering Committee shall advise the Commission all engineering matters that may be referred to it.

(c) The Environmental and Natural Resources Committee shall advise the Commission on all environmental and natural resource matters that may be referred to it.

(d) The Legal Committee shall advise the Commission on all legal matters that may be referred to it.

5.3 Commissioners may be members of committees. The number of members of each committee shall be determined from time to time by the Commission. The Commissioners of each state shall designate the member or members on each committee representing the State, and each State shall have one vote.

5.4 The Chairman may appoint a non-voting member of each committee.

5.5 The Chairman of each committee shall be designated by the Commission from members of the committee; however, in the event a Chairman is unable to perform his duties, the committee shall appoint an Interim Chairman.

5.6 The Commission may from time to time create special committees and assign it tasks. The Commission may also determine the composition of the special committees.

5.7 Formal committee reports shall be made in writing and filed with the Commission.

ARTICLE VI
RULES AND REGULATIONS

6.1 So far as is consistent with the Compact, the Commission may adopt rules and regulations and amend them from time to time. Rules and regulations to be adopted shall be presented by resolution and approved by a quorum as set out in Rule 4.7. Copies of proposed resolutions for rule adoption shall be presented in writing to each of the Commissioners at least thirty days before the meeting upon which they are to be voted. However, at its meeting, by unanimous vote, the Commission may waive this notice requirement.

6.2 Rules and regulations of the Commission may be compiled and copies may be prepared for distribution to the public under such terms and conditions as the Commission may prescribe.

ARTICLE VII
FISCAL

7.1 All funds of the Commission shall be deposited in a depository or depositories designated by the Commission under the name of the "Red River Compact Commission Fund".

7.2 Disbursement of funds in the hands of the Treasurer, for items included in the approved budget, shall be made by check signed by him and the Vice-Chairman or by such person as may be designated by the Commission. Disbursement of funds for non-budgeted items shall be made by check signed by the Treasurer and Vice-Chairman upon voucher approved by at least six of the Commissioners, four of whom shall be from different signatory states.

7.3 At the annual meeting of each year, the Commission shall adopt a budget covering an estimate of its expenses for the following two fiscal years.

7.4 The payment of expenses of the Commission and of its employees shall not be subject to the audit and accounting procedures of the states.

7.5 All receipts and disbursements of the Commission shall be audited periodically as determined by the Commission by a qualified independent public accountant to be selected by the Commission and the report of the audit shall be included in and

become a part of the annual report of the Commission.

7.6 The fiscal year of Commission shall begin July 1, of each year and end June 30 of the next succeeding year.

ARTICLE VIII
ANNUAL REPORT

8.1 The Commission shall make an annual report and transmit it on or before the last day of May to the governors of the signatory states to the Red River Compact and to the President of the United States.

8.2 The annual report shall contain:

(a) Minutes of all regular, special or emergency meetings held during the year;

(b) All findings of facts made by the Commission during the preceding year;

(c) Recommendations for actions by the signatory states;

(d) Statements as to any cooperative studies made during the preceding year;

(e) All data which the Commission deems pertinent;

(f) The budget for current and future years;

(g) The most recent audit report or current financial statement of the Red River Compact Fund;

(h) Name, address and phone number of each Commissioner and each member of all standing committees;

(I) Such other pertinent matters as the Commission may require.

RED RIVER COMPACT INTERIM RULES AND REGULATIONS
To Compute and Enforce Compact Compliance
REACH II, SUBBASIN 5

(Adopted 4/30/87)

1. These rules and regulations to be used to compute and enforce Compact compliance within Subbasin 5 of Reach II, Red River Compact, are adopted subject to the following conditions and assumptions.
   a. It is fully understood that these rules and regulations should be modified as new or improved gaging stations are constructed, whenever experience or detailed studies demonstrate the need for modification, and if the Commission should modify its interpretation of Compact provisions relating to this Subbasin.
   b. Definitions:
      (1) "Diversion" as used in these rules and regulations, is the net loss to a water source from use by a diverter, and is computed as the diversion from the water source minus the part of the diversion which is returned to the water source. Normally, return flows must be measured to be considered; however, the EAC may consider and recommend exceptions. As used herein, "diversion" is equivalent to "net diversion" from a water source and to "depletion" or "consumptive use" of a water source.

2. **Management of Compact Compliance Computations.**
   a. **Management Using State Centers:**
      (1) State EAC representatives will establish State Computation Control Centers
         (a) State representatives will gather data, exchange data and meet via conference call to check on computation results, if necessary.
         (b) EAC will determine compliance with Compact.

   b. **Management Period for Weekly Flow and Diversions:**
      (1) Next week's State diversions will be allocated based on last week's compliance computations.
      (2) It is each State's responsibility to limit its total State diversion allocation among its State diverters.
      (3) The weekly period for use and flow data will start and end at 8:00 a.m. on Tuesday of each week.
      (4) Data collection and dissemination will be completed on Tuesday of each week.
      (5) Computation of Compliance will be completed on Wednesday of each week.
      (6) Each State can request an update at any time.

   c. **Management Improvement Studies:** The EAC will monitor the effect on accounting management of the following factors and will report thereon to the Commission whenever procedure changes appears desirable.
      (1) Errors caused by travel time.

(2) Future restrictions computed from past week's data.
(3) Failure to consider channel loss.
(4) Failure to consider ungaged return flows.
(5) Failure to consider flow trends.
(6) Addition of needed gages.

3. Enforcement of Compact Compliance Requirements. Each State will be responsible for insuring that the sum of the diversions by State users does not exceed the total State diversion authorized by the Red River Compact. In this regard, each State will be responsible for establishing clear legal authority within its State for enforcing the restrictions imposed by the Red River Compact.

4. Data Reporting Procedures.

a. Streamflow Gaging Station Records: The EAC will make arrangements with the Corps of Engineers, the U.S. Geological Survey and with States as required to collect daily and/or weekly data, as needed, and forward to the State Computation and Control Centers.

b. Diversion Records: Each State will be responsible to collect daily and/or weekly data, as needed, and forward to the State Computation and Control Centers.

c. Archived Records: Records will be archived by Commission Chairman.

5. General Compliance Requirements of Section 5.05, Red River Compact.

a. Section 5.05 (b)(1):

(1) Compact prescribes: "The Signatory States shall have equal rights to the use of the runoff originating in subbasin 5 and undesignated water flowing into subbasin 5, so long as the flow of the Red River at the Arkansas-Louisiana state boundary is 3,000 cubic feet per second or more, provided no state is entitled to more than 25 percent of the water in excess of 3,000 cubic feet per second."

(2) In computing the Subbasin 5 water allocation, when the flow of the Red River at the Arkansas-Louisiana State Boundary is 3,000 cfs or more and the total runoff and undesignated flow of Subbasin 5 is greater than or equal to 7,500 cfs but less than or equal to 12,000 cfs, Louisiana's allocation shall be 3,000 cfs and each of the three upstream states will equally share the runoff and undesignated flow in excess of 3,000 cfs.

(3) When the total runoff and undesignated flow of Subbasin 5 is 12,000 cfs or more, each of the signatory states shall be entitled to 25% of the total runoff and undesignated flow.

(4) State compliance with Section 5.05 (b)(1) does not need to be determined except when specifically requested by a Compact State.

b. Section 5.05 (b)(2):

(1) The Compact states: "Whenever the flow of the Red River at the Arkansas-Louisiana state

boundary is less than 3,000 cubic feet per second, but more than 1,000 cubic feet per second, the States of Arkansas, Oklahoma, and Texas shall allow to flow into the Red River for delivery to the State of Louisiana a quantity of water equal to 40 percent of the total weekly runoff originating in subbasin 5 and 40 percent of undesignated water flowing into subbasin 5; provided, however, that this requirement shall not be interpreted to require any state to release stored water."

(2) In computing the Subbasin 5 water allocation to Louisiana when flow of Red River at the Arkansas-Louisiana State boundary is less than 3,000 cfs but more than 1,000 cfs, the Subbasin 5 runoff for each of the three upstream States and the undesignated water flowing into Subbasin 5 from each upstream State totalled, and the three upstream States should allow to pass to Louisiana 40 percent of the total, or 1,000 cfs, whichever is greater.

(3) When the Subbasin 5 runoff plus undesignated water totals at least 2,500 cfs and not more than 7,500 cfs, each of the three upstream States are allocated 60 percent of its runoff plus undesignated inflow and the other 40 percent is to be allowed to flow into the Red River for delivery to Louisiana.

(4) When the Subbasin 5 runoff plus undesignated water totals at least 1,000 cfs but less than 2,500 cfs, the allocation to Louisiana is 1,000 cfs because of Compact Section 5.05 (b)(3). The total Subbasin 5 runoff plus undesignated water is compared to the Louisiana allocation of 1,000 cfs and a percentage is established. Each of the three upstream States will be entitled to divert and use a quantity computed using (100 percent minus the established percentage) times (the total of runoff from its Subbasin 5 areas plus undesignated water flowing into its Subbasin 5 areas).

(5) This Compact compliance determination should be made whenever the flow of the Red River at the Arkansas-Louisiana State boundary falls below 3,000 cfs and is more than 1,000 cfs.

c. **Section 5.05 (b)(3):**

(1) **The Compact states:** "Whenever the flow of the Red River at the Arkansas-Louisiana state boundary falls below 1,000 cubic feet per second, the States of Arkansas, Oklahoma, and Texas shall allow a quantity of water equal to all the weekly runoff originating in subbasin 5 and all undesignated water flowing into subbasin 5 within their respective states to flow into the Red River as required to maintain a 1,000 cubic foot per second flow at the Arkansas-Louisiana state boundary."

(2) In computing the Subbasin 5 allocation when the flow of the Red River at the Arkansas-Louisiana

State boundary falls below 1,000 cfs, and when the Subbasin 5 runoff and undesignated water flowing into Subbasin 5 total 1,000 cfs or less, all flow must be passed to Louisiana.

(3) When the Subbasin 5 runoff and undesignated water flowing into Subbasin 5 total more than 1,000 cfs but less than 2,500 cfs, Louisiana is allocated 1,000 cfs. This 1,000 cfs Louisiana entitlement is compared to the total runoff plus undesignated water and a percentage is established. Each of the three upstream States will be entitled to divert and use a quantity computed using (100 percent minus the established percentage) times (its total State runoff and undesignated water inflow).

(4) See rules for Compact Section 5.05 (b)(2) when the Subbasin 5 runoff and undesignated water flowing into Subbasin 5 total 2,500 cfs or more up to 7,500 cfs.

(5) This Compact compliance determination should be made whenever the flow of the Red River at the Arkansas-Louisiana State boundary falls below 1,000 cfs.

d. Section 5.05 (c):

(1) **The Compact states:** "Whenever the flow at Index, Arkansas, is less than 526 c.f.s., the states of Oklahoma and Texas shall each allow a quantity of water equal to 40 percent of the total weekly runoff originating in subbasin 5 within their respective states to flow into the Red River; provided however, this provision shall be invoked only at the request of Arkansas, only after Arkansas has ceased all diversions from the Red River itself in Arkansas above Index, and only if the provisions of Sub-sections 5.05 (b)(2) and (3) have not caused a limitation of diversions in subbasin 5."

(2) In computing the Subbasin 5 allocation when flow of Red River at Index Arkansas is less than 256 cfs, the States of Oklahoma and Texas are to pass 40 percent of weekly runoff from respective Subbasin 5 areas.

(3) This Compact compliance determination will be made only when requested by Arkansas, only after Arkansas has ceased all diversions from the Red River, and only if the provisions of subsections 5.05 (b)(2) and (3) have not caused a limitation of diversions in Subbasin 5.

6. Procedures (Disregarding Designated Flows) to Compute State Runoff, Runoff plus Undesignated Inflows, and Flow of Red River at Arkansas-Louisiana State Boundary.

a. Oklahoma.

(1) Runoff plus Undesignated Inflows of Denison Dam to DeKalb Gage:

(a) Kiamichi River near Hugo, OK, Gage flow, plus Muddy Boggy Creek near Unger, OK, Gage flow plus Blue River near Blue, OK Gage

flow, plus

(b) Fifty percent of (DeKalb Gage flow, plus Texas and Oklahoma diversions, minus gaged flows at Kiamichi River near Hugo, Ok, Muddy Boggy Creek near Unger, OK, Blue River near Blue, OK, and Sanders Creek near Chicota, Texas, streamflow Gages).

(2) Runoff plus Undesignated Inflows, DeKalb Gage to Oklahoma-Arkansas State line: Fifteen and one-half (15.5) percent of (Index Gage flow, minus DeKalb Gage flow, plus Oklahoma, Texas and Arkansas diversions downstream from DeKalb Gage).

(3) Runoff only, Denison Dam to Oklahoma-Arkansas State line.

(a) Fifty percent of (DeKalb Gage flow, minus Red River at Denison Dam Gage flow, plus Texas and Oklahoma diversions upstream from DeKalb Gage, minus Blue River near Blue, OK, Gage flow, minus Muddy Boggy Creek near Unger-Okla. Gage flow, minus Kiamichi River near Hugo-Okla. Gage flow minus Gage flow), plus

(b) Fifteen and one-half (15.5) percent of (Index Gage flow, minus DeKalb Gage flow, plus Oklahoma, Texas and Arkansas diversions between DeKalb and Index Gages).

b. Texas.

(1) Runoff plus Undesignated Inflows, DeKalb Gage to Index Gage:

(a) Sanders Creek near Chicota Gage flow, plus

(b) Fifty percent of: (DeKalb Gage flow, plus Texas and Oklahoma diversions, minus gaged flows at Kiamichi River near Hugo, OK, Muddy Boggy Creek near Unger, OK, Blue River near Blue, OK, and Sanders Creek near Chicota, TX, streamflow Gages).

(2) Runoff plus Undesignated Inflows, DeKalb Gage to Index Gage: Fifty (50) percent of (Index Gage flow, minus DeKalb Gage flow, plus Oklahoma, Texas and Arkansas diversions downstream from DeKalb Gage).

(3) Runoff plus Undesignated Inflows, Sulphur River Gage: One hundred percent of (Sulphur River near Texarkana Gage flow) minus (Texas diversions from river below gage) plus (Texas diversions below Texarkana Dam).

(4) Runoff Only, Denison Dam to Index Gage: Fifty percent of (Index Gage flow, minus Red River at Denison Dam Gage flow, plus Oklahoma and Texas and Arkansas diversions upstream from the Index Gage, minus Blue River near Blue, OK, Gage flow, minus Muddy Boggy Creek near Unger-Okla. Gage flow, minus Kiamichi River near Hugo-Okla. flow, minus Sanders Creek near Chicota-Texas Gage flow).

c. Arkansas Runoff plus Undesignated Inflows.

(1) Oklahoma-Arkansas State Line to Index Gage: Thirty-four and one-half (34.5) percent of (Index Gage flow, minus DeKalb Gage flow, plus Oklahoma

and Texas and Arkansas diversions between DeKalb and Index Gages).

(2) **Index Gage to Hosston Gage:**

(a) Hosston Gage flow, plus Louisiana diversions above Hosston Gage, minus Index Gage flow, minus (Sulphur River near Texarkana Gage flow less Texas diversions from river below gage), plus Arkansas diversions downstream from Index Gage.

d. **Louisiana Streamflow at Arkansas-Louisiana State Boundary.**

(1) **Red River flow at Arkansas-Louisiana State boundary** equals (Gage flow) plus (Louisiana diversions from Red River downstream from the State boundary and upstream from gage).

(2) **Data needed to make interim Louisiana calculations**

(a) **For Red River flows up to 5,000 cfs** - Hosston Gage flow, plus Louisiana diversions from Red River upstream from Hosston Gage.

(b) **For Red River flows of 5,000 cfs or larger** - Shreveport Gage flow, plus Louisiana diversions from Red River upstream from Shreveport Gage, minus Twelvemile Bayou near Dixie-La Gage flow, plus Louisiana diversions from Twelvemile Bayou below Twelvemile Bayou near Dixie-La Gage.

(3) **Effect of Flow Trends, Scheduled Change of Reservoir Releases, and Other Events Certain to Significantly Change Flow at Arkansas-Louisiana State Boundary During Coming Week.**
In addition to the Arkansas-Louisiana State boundary flow estimated based on subparagraph (2) (a) or (b) above, the EAC will also advise the Commission of probable significant changes in State boundary flow which should result from flow trends, scheduled change of reservoir releases, and other such known events.

7. **Procedures (Using Designated Flow Data) to Compute State Runoff plus Undesignated Inflows and Flow of Red River at Arkansas-Louisiana State boundary.** Procedures outlined in paragraph 6 above will be followed except that designated inflows, designated outflows and diversion of designated flows will be accounted for whenever appropriate.

RED RIVER COMPACT RULES AND REGULATIONS
To Compute and Enforce Compact Compliance
REACH I, SUBBASIN 1

(Adopted 4/30/87)

1. **General.** These rules and regulations to be used to compute and enforce Compact compliance within Subbasin I of Reach 1, Red River Compact, are adopted subject to the following conditions and assumptions.
   a. It is fully understood that these rules and regulations should be modified as new or improved gaging stations are constructed, whenever experience or detailed studies demonstrate the need for modification, and if the Commission should modify its interpretation of Compact provisions relating to this Subbasin.

2. **Management of Compact Compliance Computations.**
   a. **Management Using State Centers:**
      (1) Texas and Oklahoma representatives will establish State Computation and Control Centers.
         (a) State representatives will gather data, exchange data and meet prior to the annual Commission meeting to check on computation results.
         (b) The EAC will determine compliance with Compact.
   b. **Management Period for Compact Compliance Computations:**
      (1) Computation will be on the calendar year basis.
      (2) Water data for a calendar year should be exchanged prior to March 15 of the following year.
      (3) Compact Compliance Computation for a calendar year should be completed by April 15 of the following year.

3. **Enforcement of Compact Compliance Requirements.** Texas will be responsible for insuring that the sum of Texas uses does not exceed the total Texas water use authorized by the Red River Compact, and Texas will be responsible for establishing clear legal authority within Texas for enforcing the restrictions imposed by the Red River Compact.

4. **Data Reporting Procedures.**
   a. **Streamflow Gaging Station Records:** The EAC will make arrangements with federal and State agencies, as required, to collect calendar year data as needed, and forward to the Texas and Oklahoma Computation Control Centers.
   b. **Archived Records:** Records will be archived by the Commission Chairman.

5. **General Compliance Requirements of Section 4.01 Red River Compact.**
   a. **SECTION 4.01. Subbasin 1 - Interstate Streams - Texas:**

(1) **The Compact prescribes:**

"(a) This includes the Texas portion of Buck Creek, Sand (Lebos) Creek, Salt Fork Red River, Elm Creek, North Fork Red River, Sweetwater Creek and Washita River, together with all their tributaries in Texas which lie west of the 100th Meridian."

"(b) The annual flow within this subbasin is hereby apportioned sixty (60) percent to Texas and forty (40) percent to Oklahoma."

SECTION 4.01 is modified in part by SECTION 4.05. Special Provisions, as follows:

"(b) Texas shall not accept for filing, or grant a permit, for the construction of a dam to impound water solely for irrigation, flood control, soil conservation, mining and recovery of minerals, hydroelectric power, navigation, recreation and pleasure, or for any other purpose other than for domestic, municipal, and industrial water supply, on the mainstem of the North Fork Red River or any of its tributaries within Texas about Lugert-Altus Reservoir until the date that imported water, sufficient to meet the municipal and irrigation needs of Western Oklahoma is provided, or until January 1, 2000, which ever occurs first."

(2) Pertinent extracts from the Supplemental Interpretive Comments of Legal Advisory Committee, as approved by the Red River Compact Commission on the 19th day of September 1978, are as follows:

Pages 9 and 10 " * * * * * The flow of interstate tributaries is generally divided 60 percent to the upstream State and 40 percent to the downstream State. Because flows in Reach I are primarily from flood flows, an annual basis of accounting was adopted"

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"Section 4.05(b) reflects the compromise of a long-standing dispute between Oklahoma and Texas over the water of the North Fork of the Red River and Sweetwater Creek. * * * * *"

"Under the Compromise Texas will limit development on North Fork and Sweetwater Creek to projects justified on the basis of municipal, industrial, and domestic needs until the year 2000. However, if sufficient imported water becomes available in Western Oklahoma before 2000, Texas will be free to pursue full development of its 60% of these interstate tributaries. * * * *"

(3) Until January 1, 2000 (assuming that imported

water is not provided prior to that date in sufficient amounts to meet municipal and irrigation needs of Western Oklahoma) special restrictions apply to Texas water use in its North Fork Red River watershed upstream from the Lugert-Altus Reservoir. Therefore, some of the Compact compliance rules for the North Fork Red River watershed upstream from the Lugert-Altus Reservoir (para 5.f.(3) & (4) and g.(3) & (4) below) expire on January 1, 2000, if still in effect at that time.

b. **Buck Creek Watershed in Texas:** Buck Creek watershed covers about 300 square miles in Texas. There are no existing gaging stations on Buck Creek in Texas or in Oklahoma. Since neither the Texas nor Oklahoma use of flow from Buck Creek is significant at this time, it is not required to make an annual accounting of the flow in Buck Creek. It also appears that establishing gaging stations and channel loss values so that future annual accountings could be made is not economically justified at this time. Annual accounting procedures for this watershed should be developed to provide a 60:40 apportionment whenever requested by either Oklahoma or Texas.

c. **Sand (Lebos) Creek Watershed in Texas:** Sand Creek watershed covers about 65 square miles in Texas. There are no gaging stations on Sand Creek in Texas or in Oklahoma. Since neither Texas nor Oklahoma makes significant use of flow from Sand Creek, it is not necessary to make an annual accounting of the flow in Sand Creek, and it does not seem to be economically justified **at this time** to establish gaging stations and determine channel loss values so that future annual accountings could be made. Annual accounting procedures for this watershed should be developed to provide a 60:40 apportionment whenever requested by either Oklahoma or Texas.

d. **Salt Fork Red River Watershed in Texas:** Salt Fork Red River watershed in Texas covers about 1,380 square miles, of which 209 are non-contributing.

The USGS streamflow gage number 07300000, Salt Fork Red River near Wellington, Texas, is about 16 miles upstream from the Oklahoma-Texas State line and measures flow from a 1,222 sq. mi. drainage area, of which 209 is probably non-contributing. The average annual discharge (1953-1966) was 52,600 AF/yr, and the average annual discharge since Greenbelt Reservoir was completed (1967-1977) has been 33,250 AF/yr.

The USGS streamflow gage 07300500, Salt Fork Red River at Mangum, Oklahoma, is about 29 miles downstream from the Oklahoma-Texas State line and measures flow from a 1,566 sq. mile drainage area, of which 209 is probably non-contributing. The average annual discharge (1937-1977) has been 62,450 AF/yr.

(1) The actual annual delivery at the Oklahoma State line is computed as follows:
   (a) The annual flow at the Wellington gage,
   (b) Minus channel losses to Wellington gage flows between gage and State line (until this specific channel loss value is available, the Compact compliance calculations will be made ignoring this channel loss adjustment),
   (c) Plus Texas' flow between Wellington gage and the State line. (This flow will be computed based on intervening drainage area between Wellington and Mangum gages adjusted for both Texas and Oklahoma man-made depletions.), and
   (d) Minus Texas' man-made depletions downstream from the Wellington gage.

(2) The scheduled annual delivery at the Oklahoma State line is 40 percent of the natural flow at State line without diversions or impoundments, and would be computed as 40 percent of the following:
   (a) The actual annual delivery (para 5.d.(1) above),
   (b) Plus all man-made depletions in Texas, and
   (c) Minus the increased channel losses in Texas which would have incurred had Texas depletions not occurred (until this specific channel loss value is available, the Compact compliance calculations will be made ignoring this channel loss adjustment).

(3) Compact compliance is achieved as long as actual delivery exceeds scheduled delivery.

e. **Elm Creek Watershed in Texas:** Elm Creek watershed covers about 360 square miles in Texas which includes the North Elm Creek tributary. There is no streamflow gage on Elm Creek in Texas. The USGS gage number 07303400, Elm Fork of North Fork Red River near Carl, Oklahoma, is about 6 miles downstream from the Oklahoma-Texas State line, and was used to measure flow from a 416 square mile drainage area but discharge measurements at this site were discontinued in 1980. The average annual discharge (20 years) was 30,280 AF/yr. No Compact compliance accounts can be made until the Gage near Carl has been reestablished.

(1) The actual annual delivery at State line is computed as follows:
   (a) Flow at the State line. (This flow will be computed based on the drainage area and on the flow measured at Carl gage, adjusted for both Texas and Oklahoma depletions.), and
   (b) Minus Texas' man-made depletions.

(2) The scheduled annual delivery at State line is 40 percent of the natural flow at State line without diversions or impoundments and would be computed as 40 percent of the following:
   (a) The actual annual delivery (para 5.e.(1) above),
   (b) Plus man-made depletions in Texas, and

(c) Minus the increased channel losses in Texas which would have been incurred if Texas had not depleted the flow (until this specific channel loss value is available, the Compact compliance calculations will be made ignoring this channel loss adjustment).

(3) Compact compliance is achieved as long as the actual delivery exceeds the scheduled delivery.

h. **Washita River Watershed in Texas:** There is no streamflow gage on the Washita River in Texas. The USGS streamflow gage number 07316500, Washita River near Cheyenne, Oklahoma, is over 21 miles downstream from the Oklahoma-Texas State line, and measures flow from a 794 square mile drainage area, of which about 441 square miles are in Texas. The average annual discharge at the Cheyenne gage (44 years) has been 20,720 AF/yr.

(1) The actual annual delivery at Oklahoma State line is computed as follows:

(a) The annual flow at the Cheyenne gage,

(b) Plus channel losses to the State line flow between the State line and the gage (until this specific channel loss value is available, the Compact compliance calculations will be made ignoring this channel loss adjustment),

(c) Minus Oklahoma's flow between the State line and Cheyenne gage. (This flow will be computed based on the drainage area upstream from the Cheyenne gage, adjusted for both Texas and Oklahoma man-made depletions.), and

(d) Minus Texas' man-made depletions.

(2) The annual scheduled delivery at State line is 40 percent of the natural flow at State line without diversions or impoundments, and would be computed as 40 percent of the following:

(a) The actual annual delivery at State line (para 5.h.(1) above),

(b) Plus man-made depletions in Texas, and

(c) Minus the increased channel losses which would have occurred if Texas had not made any diversions (until this specific channel loss value is available, the Compact compliance calculations will be made ignoring this channel loss adjustment).

(3) Compact compliance is achieved as long as the actual delivery exceeds the scheduled delivery.

RED RIVER COMPACT RULES AND REGULATIONS
To Compute and Enforce Compact Compliance
REACH III, SUBBASIN 3

(as amended 4/25/89)

1. These rules and regulations to be used to compute and enforce Compact compliance within Subbasin 3 of Reach III, Red River Compact, are adopted subject to the following conditions and assumptions.
   a. It is fully understood that these rules and regulations should be modified whenever experience or detailed studies demonstrate the need for modification, and if the Commission should modify its interpretation of Compact provisions relating to this Subbasin.
   b. **Definitions:**
      (1) "Diversion", as used in these rules and regulations, is the net loss to a water source from use by a diverter, and is computed as the diversion from the water source minus the part of the diversion which is returned to the water source. Normally, return flows must be measured to be considered; however, the Engineering Committee may consider and recommend exceptions. As used herein, "diversion" is equivalent to "net diversion" from a water source and to "depletion" or "consumptive use" of a water source.
      (2) "Drawdown", as used in these rules and regulations, means that period commencing on the first day water ceases spilling over the existing Caddo Lake spillway (or the raised spillway, if Caddo Lake is enlarged), and continuing so long as the Caddo Lake surface elevation continues to fall, until the day when appreciable inflow reaches Caddo Lake, causing the Caddo Lake surface elevation to rise leading to a spill from Caddo Lake.

2. **Management of Compact Compliance Computations.**
   a. **Management Using State Centers:**
      (1) State Engineering Committee representatives will establish State Computation Control Centers.
         (a) State representatives will gather data, exchange data and meet via conference call to check on computation results, if necessary.
         (b) The Engineering Committee will compute compliance with Compact.
   b. **Management Period for Compact Compliance Computations:**
      (1) Next week's State diversions will be allocated based on last week's compliance computations.
      (2) It is each State's responsibility to limit its total State diversion allocation among its State diverters.
      (3) The weekly period for use and flow data will start and end at 8:00 a.m. on Tuesday of each week.

(4) Data collection and dissemination will be completed on Tuesday of each week.
(5) Computation of Compliance will be completed on Wednesday of each week.
(6) Each State can request an update at any time.

c. **Management Improvements Studies:** The Engineering Committee will monitor the effect on accounting management of the following factors and will report thereon to the Commission whenever procedure changes appear desirable.
(1) Errors caused by travel time.
(2) Future restrictions computed from past week's data.
(3) Failure to consider channel loss.
(4) Failure to consider ungaged return flows.
(5) Failure to consider flow trends.
(6) Addition of needed gages.

3. **Enforcement of Compact Compliance Requirements.** Each State will be responsible for insuring that the sum of the diversions by State users does not exceed the total State diversion authorized by the Red River Compact Commission. In this regard, each State will be responsible for establishing clear legal authority within its State for enforcing the restrictions imposed by the Red River Compact.

4. **Data Reporting Procedures.**
a. **Streamflow Gaging Station Records:** The Engineering Committee will make arrangements with Corps of Engineers, the U.S. Geological Survey and with States as required to collect daily and/or weekly data, as needed, and forward to the State Computation and Control Centers.
b. **Diversion Records:** Each State will be responsible to collect weekly data, as needed, and forward to the State Computation and Control Centers.
c. **Archived Records:** Records will be archived by the Commission Chairman.

5. **General Compliance Requirements of Section 6.03 Red River Compact.**
a. **Section 6.03 (b)(1):**
(1) **The Compact states:** "Texas shall have the unrestricted right to all water above Marshall, Lake O' the Pines, and Black Cypress damsites; however, Texas shall not cause runoff to be depleted to a quantity less than that which would have occurred with the full operation of Franklin County, Titus County, Ellison Creek, Johnson Creek, Lake O' the Pines, Marshall, and Black Cypress Reservoirs constructed, and those other impoundments and diversions existing on the effective date of this Compact. Any depletions of runoff in excess of the depletions described above shall be charged against Texas' apportionment of the water in Caddo Reservoir."
(2) Texas may use the bed and banks of the streams or tributaries available within this Subbasin to convey its developed water downstream from the

aforesaid dam sites to specified authorized users. Such water would retain its identity and would not be subject to the Caddo Lake drawdown provisions of Section 5.b. of these rules until passing the designated point of diversion. Appropriate transportation losses will be approved by the Red River Compact Commission.

(3) Until both Marshall Reservoir (with an estimated capacity of 782,300 acre-feet and yield of 325,000 acre-feet annually) and Black Cypress Reservoir (with estimated capacity of 824,400 acre-feet and yield and 220,000 acre-feed annually) have been constructed, it will be virtually impossible for Texas to deplete runoff in excess of that authorized. In the future, whenever potential Texas depletions above Marshall, Lake O' the Pines, and Black Cypress damsites become a concern to Louisiana, procedures to compute Texas depletion of runoff in excess of that authorized by Section 6.03 (b)(1) of the Compact should be developed by the Engineering Committee and presented for Commission consideration.

b. Section 6.03 (b)(2):

(1) **The Compact states:** "Texas and Louisiana shall each have the unrestricted right to use fifty (50) percent of the conservation storage capacity in the present Caddo Lake for the impoundment of water for state use, subject to the provision that supplies for existing uses of water from Caddo Lake, on date of Compact, are not reduced."

(2) Whenever water is spilling over the existing spillway at 168.5 feet above mean sea level, each state may withdraw or divert water from Caddo Lake without restriction.

(3) Whenever Caddo Lake is not spilling over the existing spillway at 168.5 feet above mean sea level, the total consumptive use by each state shall not exceed 8,400 acre-feet during the drawdown period, provided that neither state shall divert more than 3,600 acre-feet during any one month or 4,800 acre-feet during any two consecutive months.

c. Section 6.03 (b)(3):

(1) **The Compact states:** "Texas and Louisiana shall each have the unrestricted right to fifty (50) percent of the conservation storage capacity of any future enlargement of Caddo Lake, provided the two states may negotiate for the release of each state's share of the storage space on terms mutually agreed upon by the two states after the effective date of this Compact."

(2) This Compact provision requires no separate computation procedures but other rules may be changed if enlargement of Caddo Lake occurs. If enlargement of Caddo Lake is authorized in the future, the Engineering Committee should review

and modify as necessary Rule 5 (b) and Rule 6.

d. Section 6.03 (b)(4):

(1) **The Compact states:** "Inflow to Caddo Lake from its drainage area downstream from Marshall, Lake O' the Pines, and Black Cypress damsites and downstream from other last downstream dams in existence on the date of the signing of the Compact document by the Compact Commissioners, will be allowed to continue flowing into Caddo Lake except that any manmade depletions to this inflow by Texas will be subtracted from the Texas share of the water in Caddo Lake."

(2) As indicated in paragraph 5 a. (2) above, it is virtually impossible for Texas at the present time to reduce inflow to Caddo Lake below that which would occur with both Marshall and Black Cypress Reservoirs constructed and operating. However potential Texas depletions become a concern to Louisiana, procedures to compute excess depletion by Texas of inflow to Caddo Lake should be develop by the Engineering Committee and presented for Commission Consideration.

e. Section 6.03 (c):

(1) **The Compact states:** "In regard to the water of interstate streams which do not contribute to the inflow to Cross Lake or Caddo Lake, Texas shall have the unrestricted right to Divert and use this water on the basis of a division of runoff above the state boundary of sixty (60) percent to Texas and forty (40) percent to Louisiana."

(2) The Engineering Committee will review known Texas diversion data for the previous year and report to the Commission any Texas non-compliance with Compact Section 6.03 (c).

f. Section 6.03 (d):

(1) **The Compact states:** "Texas and Louisiana will not construct improvements on the Cross Lake watershed in either state that will affect the yield of Cross Lake; provided, however, this subsection shall be subject to the provisions of Section 2.08."

(2) The Engineering Committee will renew any known improvements on the Cross Lake watershed and report to the Commission any non-compliance with Compact Section 6.03 (d).

6. Caddo Lake Content Accounting Procedure During Drawdown Periods.

a. Whenever water is spilled from Caddo Lake, both state's accounts are full and no accounting is necessary. Accounting shall start the first day of no-spill following each period of spilling and shall continue until the first day of spill in the next period of spilling. The accounting procedure for computing the quantity of water in Caddo Lake during periods of drawdown belonging to the States of Louisiana and Texas shall be as follows:

(1) At the beginning of the drawdown, the Caddo Lake contents belong 50 percent to each state. Otherwise, begin with water ownership on Caddo Lake as shown in the most recent previous report.
(2) Each State shall be credited with one-half of the inflow to Caddo Lake since the previous report.
(3) Each State's account shall be reduced by its share of Caddo Lake evaporation losses during the period since the previous report.
(4) Each State's account shall be reduced by its diversions from Caddo Lake since the previous report.
(5) A State's account shall not exceed 50 percent of the capacity of Caddo Lake. If these accounting procedures result in a greater State content than 50 percent of the total capacity of Caddo Lake, the excess computed quantity shall be "spilled" into the other State's account as needed to bring the other State's account up, but in no case shall either State's account exceed 50 percent of the total capacity of Caddo Lake.

b. Using a stage-area-capacity relationship concurred in by both States, the content of Caddo Lake at the end of each accounting period shall be determined and inflow for that period shall be computed as follows:
(1) From the present content, as determined above, subtract the content determined at the end of the previous period.
(2) Add to the figure resulting from Step (1) the total Texas and Louisiana diversions since the end of the previous period.
(3) Add to the figure resulting from Step (2) the computed gross evaporation since the end of the previous period as determined in c. (2) below. This results in total inflow.

c. **Evaporation will be computed as follows:**
(1) The Weather Bureau's pan evaporation data shall be used to compute gross lake evaporation using a standard conversion coefficient agreed to by the engineer advisors of each State.
(2) The average lake surface area for the accounting period shall be determined from the stage-area-capacity relationship concurred in by both States and multiplied by the gross lake evaporation as determined in Step (1) to determine the volume of evaporation for the period.

7. **Availability of Diversion Records.** Arrangements shall be made for all Texas and Louisiana diverters, during "drawdown" of Caddo Lake, to maintain daily diversion records open for inspection, and to provide weekly use data as required by Rule 2 b. (3).