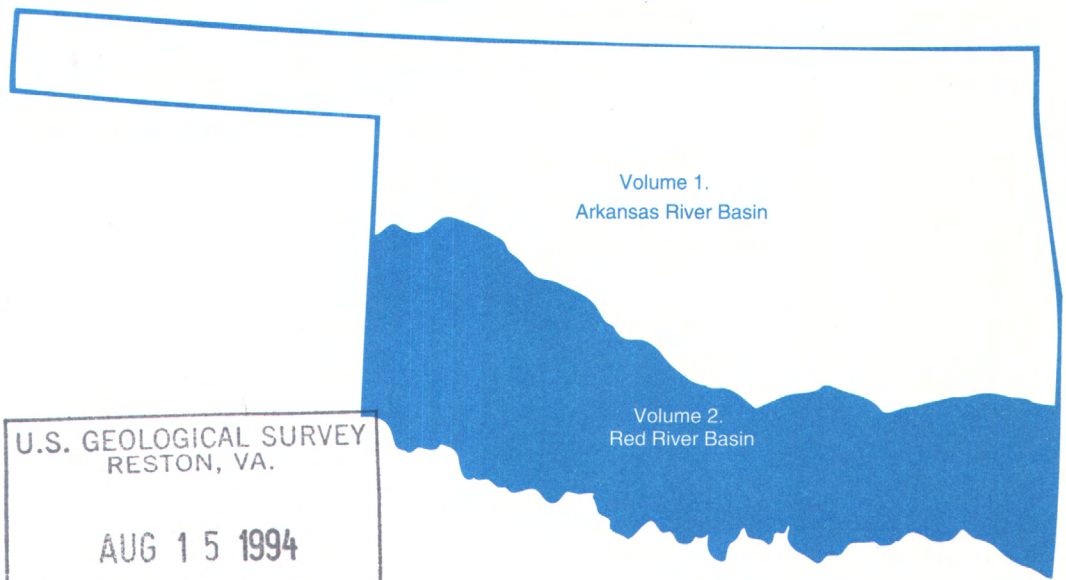
Water Resources Data Oklahoma Water Year 1993

Volume 2. Red River Basin



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OK-93-2
Prepared in cooperation with the State of Oklahoma and with other agencies

CALENDAR FOR WATER YEAR 1993

1992

OCTOBER

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1993

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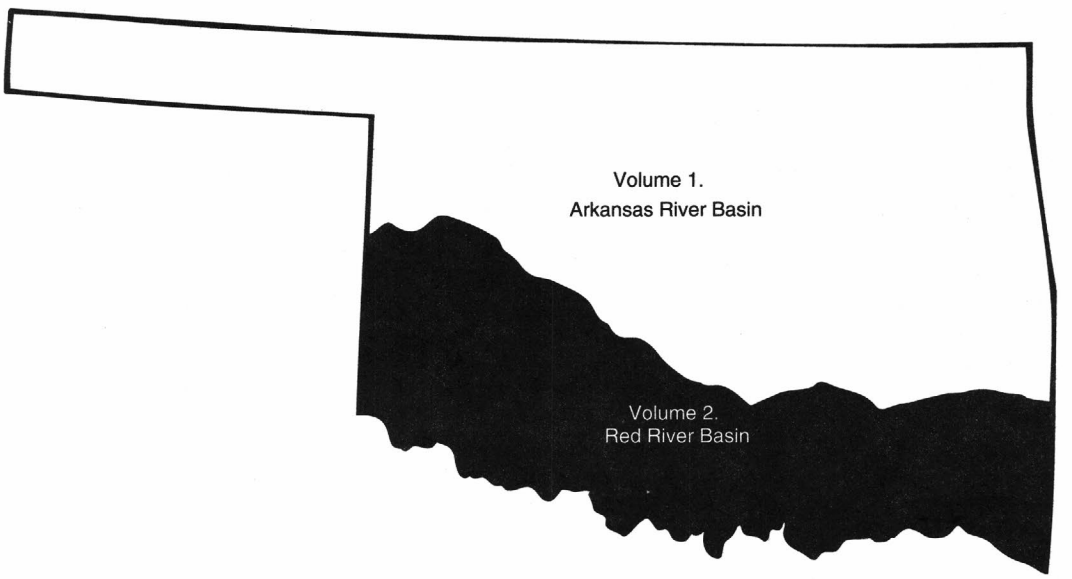
Water Resources Data Oklahoma Water Year 1993

Volume 2. Red River Basin

by R.L. Blazs, D.M. Walters, T.E. Coffey, D.K. White, D.L. Boyle, and J.F. Kerestes



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OK-93-2
Prepared in cooperation with the State of Oklahoma and with other agencies

U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, *Secretary*

U.S. GEOLOGICAL SURVEY

Gordon P. Eaton, Director

For information on the water program in Oklahoma write to
District Chief, Water Resources Division
U.S. Geological Survey
202 N.W. 66 St., Building 7
Oklahoma City, Oklahoma 73116

1994

PREFACE

This hydrologic-data report for Oklahoma is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's surface-water and ground-water data-collection networks in each state, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by state, local, and federal agencies, and the private sector for developing and managing our Nation's land and water resources.

This report is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines.

The data were collected, computed, and processed by the following personnel:

D.L. Adams	R.D. Gist	J.E. May	M.L. Schneider
L.A. Alf	G.H. Haff	L.D. Mize	E.W. Smith
D.L. Boyle	J.R. Hanlon	T.V. Nevitt	S.D. Smith
C.R. Bullock	R.E. Johnson	J.E. Norvell	R.L. Tortorelli
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T.E. Coffey	J.F. Kerestes	M.L. Phillips	D.M. Walters
R.A. Funkhouser	J.K. Kurklin	R.D. Ross	D.K. White

L.K. Osburn typed the text of the report.

This report was prepared in cooperation with the State of Oklahoma and with other agencies under the general supervision of Robert L. Blazs, Hydrologic Records Section Chief, and Kathy D. Peter, District Chief.

Data for Oklahoma are in three volumes as follows:

Volume 1. Arkansas River Basin
Volume 2. Red River Basin and Ground-Water Records
Volume 3. Statewide Miscellaneous Water-Quality Data Water Years 1991-1993

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5. Report Date
May 1994

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7. Author(s) R.L. Blazs, D.M. Walters, T.E. Coffey, D.K. White, D.L. Boyle, J.K. Kerestes

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Oklahoma City, OK 73116

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Annual - Oct. 1, 1992 to Sept., 30, 1993

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15. Supplementary Notes
Prepared in cooperation with the State of Oklahoma and with other agencies.

16. Abstract (Limit: 200 words)
Volumes 1 and 2 of the water resources data for the 1993 water year for Oklahoma consists of record of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes or reservoirs; and water levels of ground-water well. This report contains discharge records for 135 gaging stations; stage and contents for 30 lakes or reservoirs; water quality for 58 gaging stations; 23 partial-record or miscellaneous streamflow stations and 28 ground-water sites. Also included are lists of discontinued surface-water discharge and water-quality sites. Volume 3 contains statewide water-quality data. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Oklahoma.

17. Document Analysis a. Descriptors
*Oklahoma, *Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperature, Sampling sites, Water analyses, Ground water.

b. Identifiers/Open-Ended Terms

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(Formerly NTIS-35)
Department of Commerce

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ILLUSTRATIONS

SURFACE WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

[Letters after station name designate type of data: (d) discharge, (c) chemical, (b) biological, (e) contents, (m) microbiological, (t) water temperature, (s) sediment]

SURFACE WATER STATIONS, IN DOWNSTREAM ORDER, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

GROUND-WATER WELLS, BY COUNTIES, FOR WHICH RECORDS ARE PUBLISHED IN THIS VOLUME

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

The following continuous-record surface-water discharge stations (gaging stations) in Oklahoma have been discontinued. Daily streamflow records were collected and published for the period of record, expressed in water years, shown for each station. Discontinued project stations with less than 2 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the back side of the title page of this report.

Discontinued surface-water discharge stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Sandy Creek near Eldorado, OK	07299710	280	1960-63
Turkey Creek at Olustee, OK	07301100	317	1960-63
North Fork Red River near Sayre, OK	07301481	2,159	1978-87
North Fork Red River near Granite, OK	07302000	2,494	1904-08 1938-44
Elm Fork of North Fork Red River near Carl, OK	07303400	416	1960-79
Elm Fork of North Fork Red River near Reed, OK	07303420	579	1965-67
Elm Fork of North Fork Red River near Mangum, OK	07303500	838	1905-08 1930-31 1938-47 1965-67 1968-76
Otter Creek at Mountain Park, OK	07306500	164	1946-51
East Cache Creek near Elgin, OK	07309000	248	1956-58
Little Medicine Bluff Creek near Lawton, OK	07310000	7.00	1913-19
Medicine Bluff Creek near Lawton, OK	07310500	101	1913-19
Little Beaver Creek near Duncan, OK	07313000	158	1949-64
Cow Creek at Waurika, OK	07313600	193	1966-70
Walnut Bayou near Burneyville, OK	07315900	314	1961-63 1969-71
Sandstone Creek subwater shed 16A near Cheyenne, OK	07317500	8.78	1952-71
Sandstone Creek subwater shed 16 near Cheyenne, OK	07318000	20.3	1953-69
Sandstone Creek subwater shed 14 near Cheyenne, OK	07318500	1.02	1953-70
Sandstone Creek subwater shed 17 near Cheyenne, OK	07319000	10.1	1953-70
Sandstone Creek near Berlin, OK	07319500	44.9	1953-72
Sandstone Creek subwater shed 10A near Elk City, OK	07320000	2.87	1952-70
Sandstone Creek subwater shed 6 near Elk City, OK	07320500	6.46	1953-70
Sandstone Creek subwater shed 5 near Elk City, OK	07321000	3.89	1953-70
Sandstone Creek subwater shed 3 near Elk City, OK	07321500	0.62	1953-70
Sandstone Creek subwater shed 9 near Elk City, OK	07322000	3.50	1952-70
East Branch Sandstone Creek near Elk City, OK	07322500	23.0	1951-72
Sandstone Creek near Cheyenne, OK	07323000	87.1	1952-74
Sandstone Creek subwater shed 1 near Cheyenne, OK	07324000	5.33	1952-70
Barnitz Creek near Arapaho, OK	07324500	243	1946-63
Lake Creek near Eakly, OK	07325850	52.0	1970-78

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS--Continued

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Willow Creek near Albert, OK	07325860	28.0	1971-78
Sugar Creek near Gracemont, OK	07327000	208	1956-74
Chetonia Creek Tributary below Cyril, OK	07327445	3.35	1990-91
Little Washita River near Ninnekah, OK	07327490	208	1964-85
Little Washita River at Ninnekah, OK	07327500	227	1952-63
Washita River near Tabler, OK	07328000	4,706	1940-52
Winter Creek near Alex, OK	07328070	33.0	1965-87
Rush Creek near Maysville, OK	07329500	206	1955-76
Antelope Spring at Sulphur, OK	07329849	0	1986-89
Outflow from Vendome Well at Sulphur, OK	07329851	0	1986-89
Rock Creek at Dougherty, OK	07329900	138	1957-67
Washita River near Berwyn, OK	07330000	6,815	1924-26
Caddo Creek near Ardmore, OK	07330500	298	1937-50
Mill Creek near Ravia, OK	07331250	89.2	1969-71
Red River at Denison Dam near Denison, TX	07331600	39,720	1959-89
Red River near Colbert, OK	07332000	39,777	1924-59
Blue River near Connerville, OK	07332390	162	1977-79
Blue River at Milburn, OK	07332400	203	1966-87
Coal Creek near Lehigh, OK	07332900	8.10	1978-81
Muddy Boggy Creek at Atoka, OK	07332950	445	1979-81
North Boggy Creek near Stringtown, OK	07333000	136	1956-59
Chickasaw Creek near Stringtown, OK	07333500	32.7	1956-68
McGee Creek near Stringtown, OK	07333800	86.6	1956-68
McGee Creek near Farris, OK	07333910	176	1978-82
Clear Boggy Creek near Caney, OK	07335000	720	1943-89
Clear Boggy Creek near Wapanucka, OK	07334500	516	1940-43
Tenmile Creek near Miller, OK	07336000	68	1956-70
Kiamichi River near Belzoni, OK	07336500	1,423	1926-72
Little River near Wright City, OK	07337500	645	1930-31, 1945-89
Little River near Idabel, OK	07338000	1,173	1930-46

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

The following stations are discontinued surface-water-quality discontinued stations. Stations with one year's record or less are not included. information regarding these stations may be obtained from the District Office at address given on back of title page of this report.

Discontinued surface-water-quality stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Prairie Dog Town Fork Red River near Childress, TX	07299540	7725	1987-88
Red River near Hollis, OK	07299565	8154	1986-88
Red River near Quanah, TX	07299570	8321	1986-88
Bitter Creek near Hollis, OK	07299705	10.4	1986-88
Sandy Creek near Eldorado, OK	07299710	280	1986-88
Gypsum Creek at Creta, OK	07299770	34.6	1987-88
Gypsum Creek near Olustee, OK	07299780	99.2	1986-88
Salt Fork Red River near Wellington, TX	07300000	1222	1987-88
Bear Creek near Vinson, OK	07300150	7.24	1987-88
Salt Fork Red River near Vinson, OK	07300400	14.21	1959-63, 1976-78, 1987-88
Salt Fork Red River at Mangum, OK	07300500	1566	1938-51, 1953-56, 1959-70, 1972, 1974-79, 1986-89
Turkey Creek at Olustee, OK	07301100	317	1986-88
North Fork Red River near Texola, OK	07301315	1284	1976-77
Sweetwater Creek near Sweetwater, OK	07301420	424	1986-90
North Fork Red River near Erick, OK	07301450		1960-63
North Fork Red River near Sayre, OK	07301481	2159	1987-90
North Fork Red River near Carter, OK	07301500	2337	1948-53, 1959-63, 1968-80, 1985-90
North Fork Red River near Granite, OK	07302000	2494	1938-44
Altus Canal Blw Lake Altus near Lugert, OK	07302510		1949-50
North Fork Red River Blw Altus Dam near Lugert, OK	07303000	2515	1962-63, 1975-80, 1987-88
Elm Fork North Fork Red R at Salton Crossing, OK	07303395		1959-61, 1973-79
Elm Fork of North Fork Red River near Carl, OK	07303400	416	1959-63, 1968-82
Fish Creek near Vinson, OK	07303402	31.5	1978-79
Salt Creek near Vinson, OK	07303404	5.64	1978-79
Elm Fork N Fork Red Rvr near Vinson, OK	07303406	428	1978-81

Discontinued surface-water-quality stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Elm Fork of North Fork Red River near Reed, OK	07303420	579	1978, 1981-82
Elm Fork of North Fork Red River near Mangum, OK	07303500	838	1938-47, 1951, 1960-65, 1968-80
Elk Creek near Hobart, OK	07304500	549	1949-51, 1955, 1958-63, 1969-90
West Otter Creek at Snyder Lk near Mt. Park, OK	07305500	132	1947, 1960, 1988
Otter Creek near Snyder, OK	07307010	217	1959-63, 1987-89
North Fork Red River near Tipton, OK	07307028	4691	1960, 1985-89
East Cache Creek near Elgin, OK	07309000	248	1975-80
Deep Red Run near Randlett, OK	07311500	617	1987-90
Beaver Creek near Lawton, OK	07312900		1947-48, 1961
Little Beaver Creek near Duncan, OK	07313000	158	1947-51, 1955, 1960, 1962-63
Beaver Creek near Waurika, OK	07313500	563	1986-90
Mud Creek near Courtney, OK	07315700	572	1985-90
Washita River near Reydon, OK	07316350	498	1949, 1977
Washita River near Cheyenne, OK	07316500	794	1938-40, 1942-47, 1950, 1960-61, 1969-73, 1985-90
Sandstone Creek SWS 17 near Cheyenne, OK	07319000	10.1	1968-70
Sandstone Creek SWS 10a near Elk City, OK	07320000	2.87	1975, 1979
Sandstone Creek SWS 1 near Cheyenne, OK	07324000	5.33	1968-70, 1979
Washita River near Moorewood, OK	07324150		1969-71
Quartermaster Creek near Hammon, OK	07324190		1969-71
Washita River near Hammon, OK	07324200	1387	1969-87, 1989-90

Discontinued surface-water-quality stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Washita River near Foss, OK	07324400	1551	1928, 1946-48, 1950-51, 1956-57, 1969-87, 1989-90
Barnitz Creek near Arapaho, OK	07324500	243	1947-49, 1951-52, 1955
Washita River near Clinton, OK	07325000	1977	1938-45, 1947-50, 1959-63, 1975, 1987-90
Washita River at Carnegie, OK	07325500	3129	1942-51, 1955-90
Spring Creek near Eakly, OK	07325753		1960-61
Cobb Creek near Eakly, OK	07325800	132	1987-90
Cobb Creek near Fort Cobb, OK	07326000	313	1943-48, 1950-51, 1959-60, 1962-63, 1986-90
Washita River at Anadarko, OK	07326500	3656	1954, 1962-80, 1987-90
Tonkawa Creek near Anadarko, OK	07326720	26	1967-71
Sugar Creek near Gracemont, OK	07327000	208	1949-50, 1960, 1962-74
Delaware Creek near Anadarko, OK No. 131	07327040	40.1	1962-77
Salt Creek near Chickasha, OK	07327150	23.8	1967-77
Washita River near Chickasha, OK	07327300		1959-61
West Salt Creek near Chickasha, OK	07327320	22	1967-71
West Bitter Creek near Tabler, OK	07327420	59.4	1960-61, 1964-71
Spring Creek near Blanchard, OK	07327432	1	1968-71
Spring Creek near Tabler, OK	07327435	2	1967-71
Spring Creek Trib near Middleberg, OK	07327437		1968-71
East Bitter Creek near Tabler, OK	07327440	35.2	1960-61, 1964-77
Little Washita River near Ninnekah, OK	07327490	208	1948-52, 1954-55, 1963-78
Little Washita River at Ninnekah, OK	07327500	227	1960-63
Washita River near Tabler, OK	07328000	4706	1942-53

Discontinued surface-water-quality stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Winter Creek near Alex, OK	07328070	33	1985-87
Washita River at Alex, OK	07328100	4787	1962-80, 1986, 1989-90
Finn Creek near Payne, OK	07328250		1960-61
Rush Creek at Purdy, OK	07329000	145	1938-53, 1985-90
Rush Creek near Maysville, OK	07329500	206	1938-39, 1944, 1953-75, 1977
Wildhorse Creek near Hennepin, OK	07329660		1949-50
Wildhorse Creek near Hoover, OK	07329700	604	1954-55, 1962-63, 1969-71, 1985-90
Honey Creek near Turner Falls, OK	07329790		1949, 1951
Honey Creek near Davis, OK	07329810	18.7	1953, 1955-56
Rock Creek N of Sulphur, OK	07329843		1958-60
Outflow from Vendome Well at Sulphur, OK	07329851		1985-90
Rock Creek S of Platt Natl Pk near Sulphur, OK	07329853		1959-60
Rock Creek at Dougherty, OK	07329900	138	1951-57, 1960-63
Caddo Creek near Ardmore, OK	07330500	298	1936-40, 1942, 1944-50
Mill Creek near Ravia, OK	07331250	89.2	1968-69
Washita River near Tishomingo, OK	07331290		1953-55
Pennington Creek near Reagan, OK	07331300	65.7	1951-55, 1957-59
Butcher Pen Creek near Tishomingo, OK	07331450		1960-61
Red River at Denison Dam near Denison, TX	07331600	39720	1942-43, 1945-49, 1959-85
Red River near Colbert, OK	07332000	39777	1930-31, 1936-62
Blue River at Connerville, OK	07332350		1951-56, 1961-62, 1977-79
Blue River near Connerville, OK	07332390	162	1977-79
Blue River at Armstrong, OK	07332450	224	1976-77

Discontinued surface-water-quality stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Blue River near Blue, OK	07332500	476	1936, 1938-42, 1944-50, 1953-80
Muddy Boggy Creek near Coalgate, OK	07332850		1961-62
Coal Creek near Lehigh, OK	07332900	8.1	1905, 1977-81
Muddy Boggy Creek at Atoka, OK	07332950	445	1978-81
Chickasaw Creek near Stringtown, OK	07333500	32.7	1955-58, 1960
Mcgee Creek near Farris, OK	07333910	176	1908, 1976-82
Muddy Boggy Creek near Farris, OK	07334000	1087	1938-81
Clear Boggy Creek near Tupelo, OK	07334400	248	1957-58, 1960-62, 1983
Leader Creek at Tupelo, OK	07334420	64.3	1958, 1960
Clear Boggy Creek near Wapanucka, OK	07334500	516	1940-42
Clear Boggy Creek Abv Caney Creek near Caney, OK	07334800		1976-77
Clear Boggy Creek near Caney, OK	07335000	720	1943-80
Muddy Boggy Creek near Unger, OK	07335300	2273	1961-62, 1985-90
Red River at Arthur City, TX	07335500	44531	1938-80, 1982
Kiamichi River near Clayton, OK	07335790	708	1976-77
Kiamichi River near Antlers, OK	07336200	1138	1962, 1972-81
Kiamichi River near Belzoni, OK	07336500	1423	1938-40, 1943-72
Kiamichi River near Sawyer, OK	07336700		1961-62, 1975, 1977-80
Red River near Valliant, OK	07336730		1921, 1923, 1970-76
Red River near Millerton, OK	07336760		1970-76
Little River near Cloudy, OK	07337100	324	1976-80
Little River near Ringold, OK	07337200		1961-62
Little River near Wright City, OK	07337500	645	1945-47, 1949, 1961-73, 1975-77
Glover River near Glover, OK	07337900	315	1961-80

Discontinued surface-water-quality stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Little River Blw Lukfata Creek, near Idabel, OK	07338500	1226	1930-31, 1938-40, 1944-54, 1960-80
Mountain Fork near Smithville, OK	07338840		1976-80
Mountain Fork near Eagletown, OK	07339000	787	1938-40, 1944-45, 1947-48, 1960-70, 1973, 1975-80
Mountain Fork Blw Eagletown, OK	07339010		1960-63
Little River near Cerrogordo, Ar	07339100		1976, 1978
Blue R at Pexton Ranch near Milburn, OK	341835096342901		1976, 1978
Wanderers Creek near Odell, TX	341837099262801	156	1986, 1988
Groesbeck Creek near Quanah,tx	342036099384301	322	1986-88
Sandy Creek near OKlahoma-Texas State-line	342436099371701	320	1986-88
Sandy Creek in Eldorado Township, OK	342535099381801	312	1987-88
Red River near Elmer, OK	342555099203001	16459	1986-88
Coal Ck Trib near Lehigh	342652096152202		1977-81
Sandy Creek at Eldorado, OK	342710099392101	297	1987-88
Coal Ck Tributary	342743096154701		1977-81
Little Blue Creek at Pontotoc, OK	342914096370701	11.6	1977-78
Sandy Creek near Lincoln, OK	342932099433301	255	1987-88
Sandy Creek at Lincoln, OK	343030099453501		1986-88
Gypsum Creek near Creta, OK	343056099302801	56.1	1987-88
Tributary to Salt Fork Red River near Elmer, OK	343135099220301		1986-88
Gypsum Creek near Prairie Hill, OK	343208099343201	28.1	1987-88
Tributary to Gypsum Creek near Eldorado, OK	343221099364601	4.53	1986-88
Tributary to Sandy Creek near Lincoln, OK	343227099451101	6.32	1987-88
Sandy Creek near Louis, OK	343307099455101	224	1987-88
Gypsum Creek near Duke, OK	343313099364601	14	1986-88
Tributary to Gypsum Creek near Jackson Co Line, OK	343313099375001	2.12	1986-88
Prairie Dog Town Fork Red River near Lakeview, TX	343412100444701	6794	1987-88
Prairie Dog Town Fork Red River at Estelline, TX	343421100260901	7293	1987-88
Bitter Creek near Altus, OK	343537099230601		1986-88
Blue River at Ford, OK	343554096250801		1976-77
Jonah Creek near Estelline, TX	343604100223401	57.1	1987-88
Buck Creek near Childress, TX	343642100063801	222	1987-88
Salt Creek near Childress, TX	343651100164501	113	1987-88

Discontinued surface-water-quality stations

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Sandy Creek near Gould, OK	343715099493201	169	1987-88
Tributary to Turkey Creek near Prairie Hill, OK	343721099310701	13.7	1987-88
Turkey Creek near Altus, OK	343735099271801	309	1986-88
Turkey Creek near Prairie Hill, OK	343814099305901	238	1987-88
Jonah Creek near Newlin, TX	343824100235801	46.3	1987-88
Tributary to Horse Branch at Victory, OK	343906099275001	0.23	1986,1988
Cottonwood Creek near Duke, OK	343906099355101	54.5	1986-88
Spring Branch at Duke, OK	343926099330601	14	1986-88
Turkey Creek at U.S. Highway 62 near Duke, OK	344005099360701	148	1986-88
Buck Creek near Loco, TX	344009100092401	205	1987-88
Horse Branch near Victory, OK	344050099273401	25.3	1986-88
Trib to Horse Branch in Duke Twnp near Victory, OK	344050099282101	8.39	1986-88
Turkey Creek near Duke, OK	344104099375001	84.8	1986-88
Turkey Creek at Jackson-Harmon County-line, OK	344104099395601	76.9	1987-88
Tributary to Turkey Creek near Duke, OK	344123099365401	56.5	1987-88
Buck Creek at Loco, TX	344208100110701	175	1987-88
Turkey Creek near McQueen, OK	344215099421001	51.5	1987-88
Mulberry Creek near Mangum, OK	345032099374201	9.3	1986-88
Tributary to Salt Fork Red River near Madge, OK	345051099585201	4.79	1986-88
Salt Fork Red River near Madge, OK	345145099582601	1388	1986-88
Cave Creek near Reed, OK	345158099425101	46.7	1986-88
Fish Creek near Mangum, OK	345208099342101	5.3	1987-88
Salt Fork Red River near Dodson, TX	345315100030301	1297	1987-88
Panther Creek near Wellington, TX	345833100100901	4.61	1987-88

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Oklahoma each water year (Oct. 1 to Sept. 30). These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Oklahoma."

Volumes 1-3 of this report includes records on both surface water and ground water in the State. Volumes 1 and 2 contain: (1) Discharge records for 135 streamflow-gaging stations, and 23 partial-record or miscellaneous streamflow stations, (2) stage and content records for 30 lakes and reservoirs, (3) water-quality records for 58 streamflow-gaging stations; (4) water-level records for 28 observation wells. Volume 3 contains statewide miscellaneous water-quality.

This series of annual reports for Oklahoma began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to include, in one volume, data on quantity and quality of surface water levels. Data on ground-water levels were added to this format from 1975-79 and 1990 to present.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Oklahoma were published in U.S. Geological Survey Water-Supply Papers. Data on stream discharge and stage and on lake or reservoir contents and stage, through September 1960, were published annually under the title "Surface Water Supply of the United States, Parts 7A and 7B." For the 1961 through 1970 water years, the data were published in two 5-year reports. Data on chemical quality, temperature, and suspended sediment for the 1941 through 1970 water years were published annually under the title "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 under the title "Ground-Water Levels in the United States," and 1980 to 1989 under the title "Ground-Water Levels in Observation Wells in Oklahoma." The above mentioned Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report OK-93-2." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161. Beginning with the 1990 water year, all water-data reports also will be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc.

A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

COOPERATION

The U.S. Geological Survey and organizations of the State of Oklahoma have had cooperative agreements for the systematic collection of streamflow and ground-water records since 1935, and for water-quality records since 1941. Organizations that assisted in collecting the data through cooperative agreement with the Survey are:

Oklahoma Water Resources Board, Patty Eaton, Executive Director.

Oklahoma Geological Survey, Charles J. Mankin, Director.

Oklahoma Department of Environmental Quality, Mark S. Coleman, Executive Director.

Oklahoma City Water and Wastewater Utilities, James D. Couch, Director.

The following Federal agencies assisted in the data collection program by providing funds or services:

Corps of Engineers, U.S. Army

Bureau of Reclamation, U.S. Department of Interior

Bureau of Land Management, U.S. Department of Interior

Assistance in the form of funds or services was rendered by the following organizations through the **Oklahoma Water Resources Board: Grand River Dam Authority; Central Oklahoma Master Conservancy District; Fort Cobb Reservoir Master Conservancy District; Lugert-Altus Irrigation District; Foss Reservoir Master Conservancy District; Mountain Park Master Conservancy District; Oklahoma Gas and Electric Company; the cities of Ada, Lawton, Oklahoma City,** and **Tulsa.**

Organizations that supplied data are acknowledged in the station descriptions.

SUMMARY OF HYDROLOGIC CONDITIONS

Streamflow

Large variations in streamflow characteize hydrologic conditions in Oklahoma. In the extreme southeastern part of the State, mean annual precipitation exceeds 52 inches and mean annual runoff exceeds 20 inches.

In the southeast, stream channels are deeply incised in mountainous terrain, and streamflow generally is perennial. In the extreme northwestern part of the Panhandle, mean annual precipitation is less than 16 inches and mean annual runoff is less than 0.1 inch. In northwestern Oklahoma, streams generally have shallow, poorly-defined channels and ephemeral flow.

Precipitation data from monthly reports of the Oklahoma Climatological Survey, averaged over the State, indicated that monthly precipitation was far below normal during October, and July of the water year. Monthly totals were above normal in November through February, April, May, and September.

In the last 100 years, the 1992-1993 winter total (December-February) was the second wettest and the spring total (March-May) was the 13th wettest due to an extremely wet May. March, June, and August totals were about average.

However, precipitation was not spread uniformly across the State. Oklahoma had very dry conditions during October; the Panhandle of the State averaged less than 0.10 inch of precipitation. In November through February, heavy rain fell almost continuously across the state, with totals over 200 percent of normal, except the northwest and southeast.

In the northern part of the state precipitation fell as snow and sleet, Laverne received 56 inches of snow to set a new seasonal record during the 1992-1993 winter. The entire State had a very wet May with the heaviest rainfall in the southwest, central, north-central, and northeast parts of the state. Local heavy rains caused flooding that took the lives of five people, four in Oklahoma City. September was above-average month for the eastern half of the state with heavy rains producing flooding in northeast Oklahoma.

A comparison of daily, monthly, and annual streamflow for the 1993 water year with the period of record at eight selected stations (fig. 1-8) reflected about average conditions in western Oklahoma; and above-average streamflow for the year over the rest of the State caused by high flows in winter and spring, and in September in the eastern two-thirds of the State. These stations were selected at representative locations within Oklahoma. Three locations are affected to some degree by regulation: Arkansas River at Ralston, the Washita River near Dickson, and North Canadian River at Woodward.

Drought effects during the 1993 water year were minimal for the State. Streamflow was below normal in streams during October and November in northwestern Oklahoma (fig. 1) and about normal the rest of the water year. For the rest of the State, streamflow was far above average from November through February and May. In north-central and northeastern Oklahoma, it was a record water year for high mean-annual flows (fig. 2-4). In north-central Oklahoma flows also were high from June through August; and in the northeast flows also were high in September. In central Oklahoma, streamflow also was high during September with record high mean-monthly flows during November and December(fig. 5). In southwestern Oklahoma, streamflow also was far above normal during April, with record high mean-monthly flows occurring from November through January and in May (fig. 6). Record high mean-monthly flows occurred in February and May in the south-central part of the State (fig. 7) and just medium-high flows in the southeast (fig. 8). Overall the streamflow was normal in the northwest; and far above normal in the rest of the State, with all annual peak flows in the medium to high flow range.

The worst flooding occurred during May across the eastern three-quarters of the State and during September in the northeastern part of the State. A slow moving storm moved through the State May 5-10. Several creeks in southern Oklahoma City flooded on May 8 in response to almost 7 inches of rain forcing evacuation of over 1,000 homes and four deaths on Twin, Brock, and Lightning Creeks. Flooding was reported along the Cimarron, Deep Fork, Neosho, Illinois, Arkansas, Poteau, Caney, North Canadian, Chickaskia, Salt Fork of the Arkansas, North Fork of the Red and Washita Rivers. Over 2,700 residences were damaged and a total of 43 counties were declared eligible for emergency assistance from the federal government. Heavy rains on September 24 and 25 produced serious flooding along the Spring and Neosho Rivers in Ottawa County. About 500 structures had to be evacuated, including 300 in Miami, Oklahoma.

The following table presents a comparison of streamflow for the 1993 water year with streamflow for the period of record at the eight selected stations:

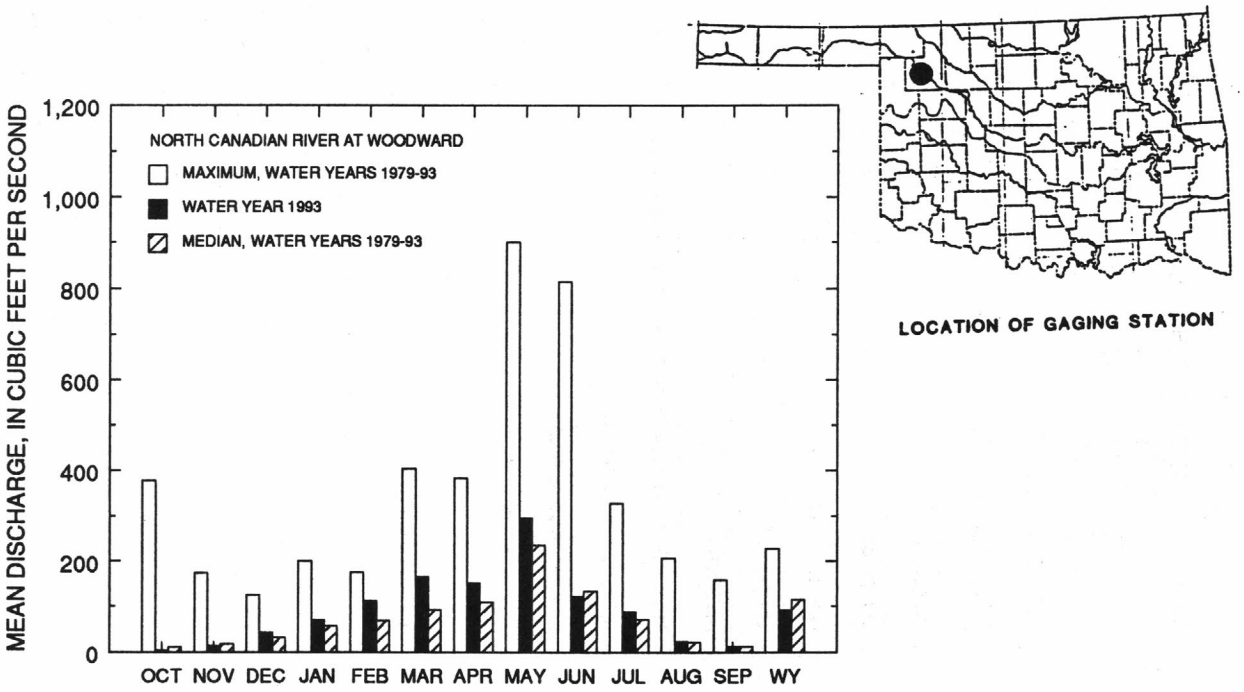
STATION IDENTIFICATION		Statistics of discharge during 1993 water year (cubic feet per second) Maximum instantaneous	Minimum mean daily	Average	Statistics of discharge during period of record (cubic feet per second) Maximum instantaneous	Minimum mean daily	Average
		ARKANSAS RIVER BASIN					
07152500	Arkansas River at Ralston	139,000	597	16,160	211,000	14	4,826
				(Prior to regulation 1926-75)			
					174,000	52	5,747
				(Since regulation by Kaw Lake 1977-93)			
07185000	Neosho River near Commerce	75,600	81	11,140	267,000	0	3,748
						(1940-93)	
07197000	Baron Fork at Eldon	19,700	41	734	50,600	1.8	323
						(1949-93)	
07231500	Canadian River at Calvin	93,400	106	4,694	174,000	0	1,788
					(1906, 1939-42, 1945-1993)		
07237500	North Canadian River at Woodward	550	3.4	91.6	42,000	0	194
				(Prior to regulation 1939-78)			
					3,090	0	102
				(Since regulation by Optima Lake 1979-93)			
		RED RIVER BASIN					
07304500	Elk Creek near Hobart	23,600	9.4	329	28,000	0	91.5
						(1950-93)	
07331000	Washita River near Dickson	56,500	387	5,017	98,000	0	1,573
				(Prior to regulation 1929-58)			
					118,000	0.10	1,750
				(Since regulation by Fort Cobb Reservoir 1962-93)			
07332500	Blue River near Blue	34,100	27	617	65,200	0	323
						(1937-93)	

The average discharge streamflow statistic for the 1993 water year also illustrates normal runoff conditions in northwestern Oklahoma, above-normal runoff conditions for the rest of the State.

Conservation storage in six selected reservoirs in the State, with a combined conservation storage capacity of 8,014,000 acre-feet, remained about the same. Conservation storage increased slightly from 98 percent at the start of the water year to 105 percent at the end of the water year.

The following table presents a comparison of conservation storage capacity for the start and end of the 1993 water year for the six selected reservoirs:

STATION IDENTIFICATION		Conservation Storage Capacity			
		Start of 1993 WY		End of 1993 WY	
		(acre-feet)	(percent)	(acre-feet)	(percent)
		ARKANSAS RIVER BASIN			
07164200	Keystone Lake near Sand Springs	553,200	84	577,800	87
07190000	Lake O' the Cherokees at Langely	1,639,000	110	2,035,000	136
07197500	Tenkiller Ferry Lake near Gore	647,600	103	660,500	105
07244800	Eufaula Lake near Brooken	2,337,000	101	2,374,000	103
		RED RIVER BASIN			
07302500	Lake Altus at Lugert	105,200	79	79,590	60
07331500	Lake Texoma near Denison	2,569,000	94	2,652,000	97
	Total/Average	7,851,000	98	8,378,890	105



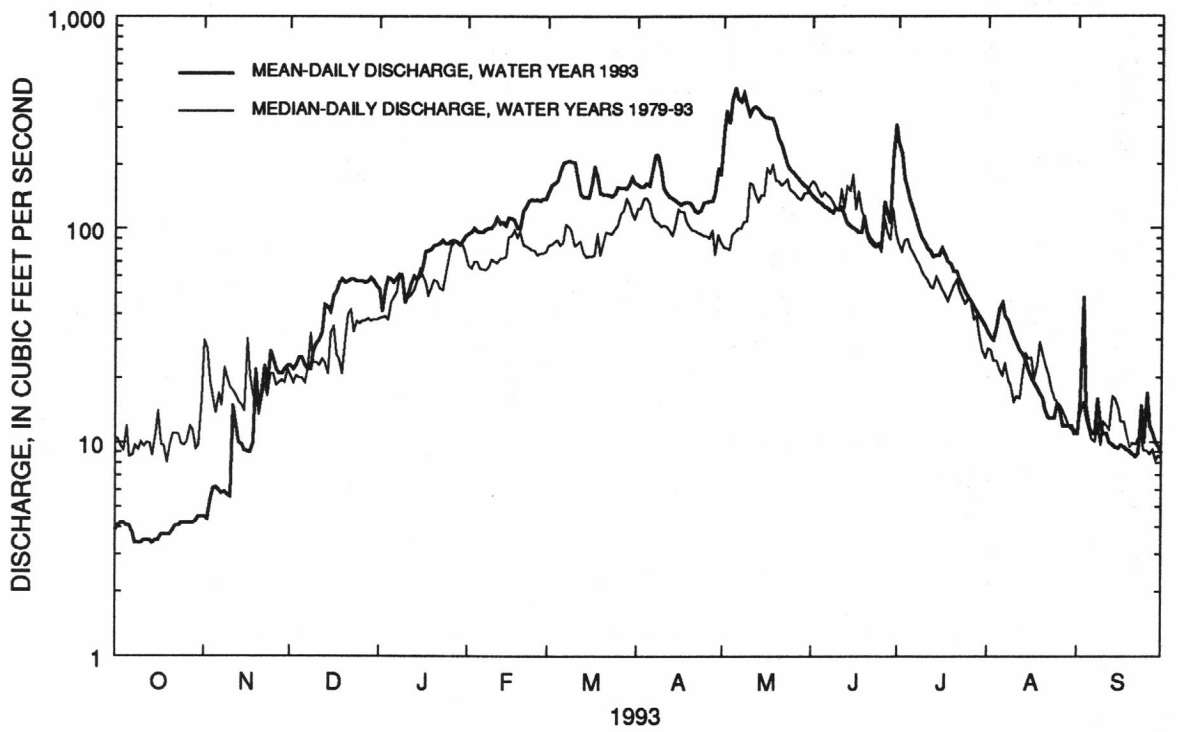
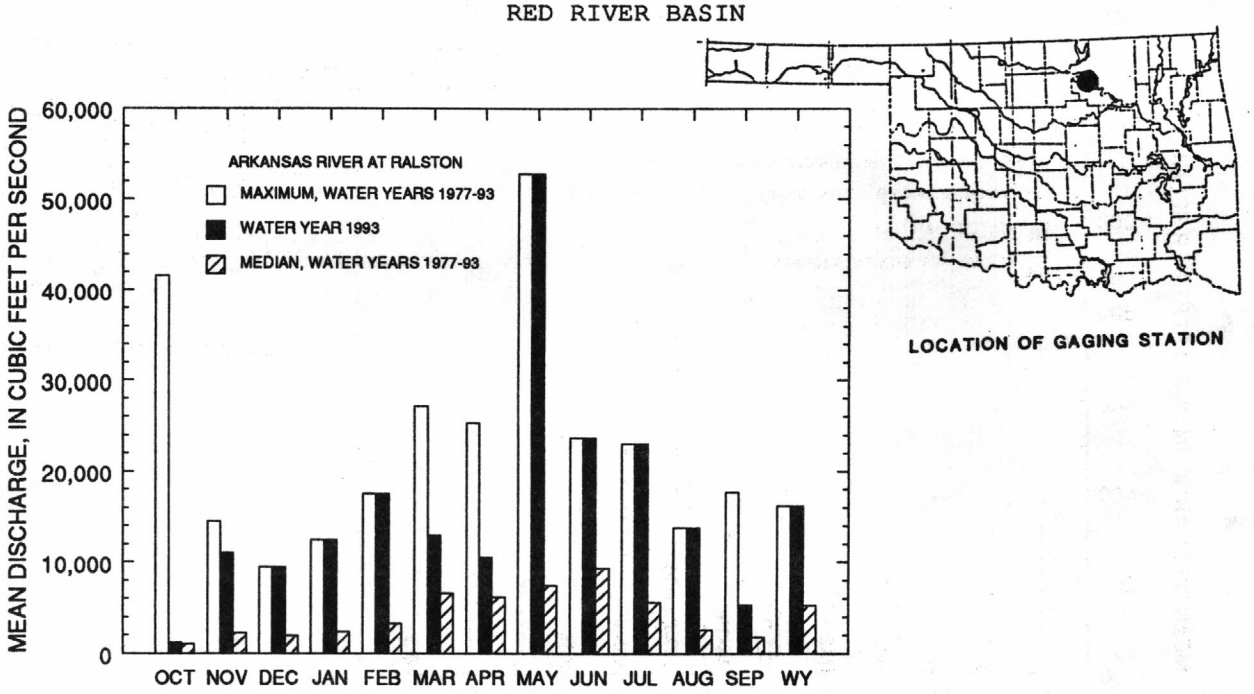


Figure 1.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for North Canadian River at Woodward, Oklahoma.



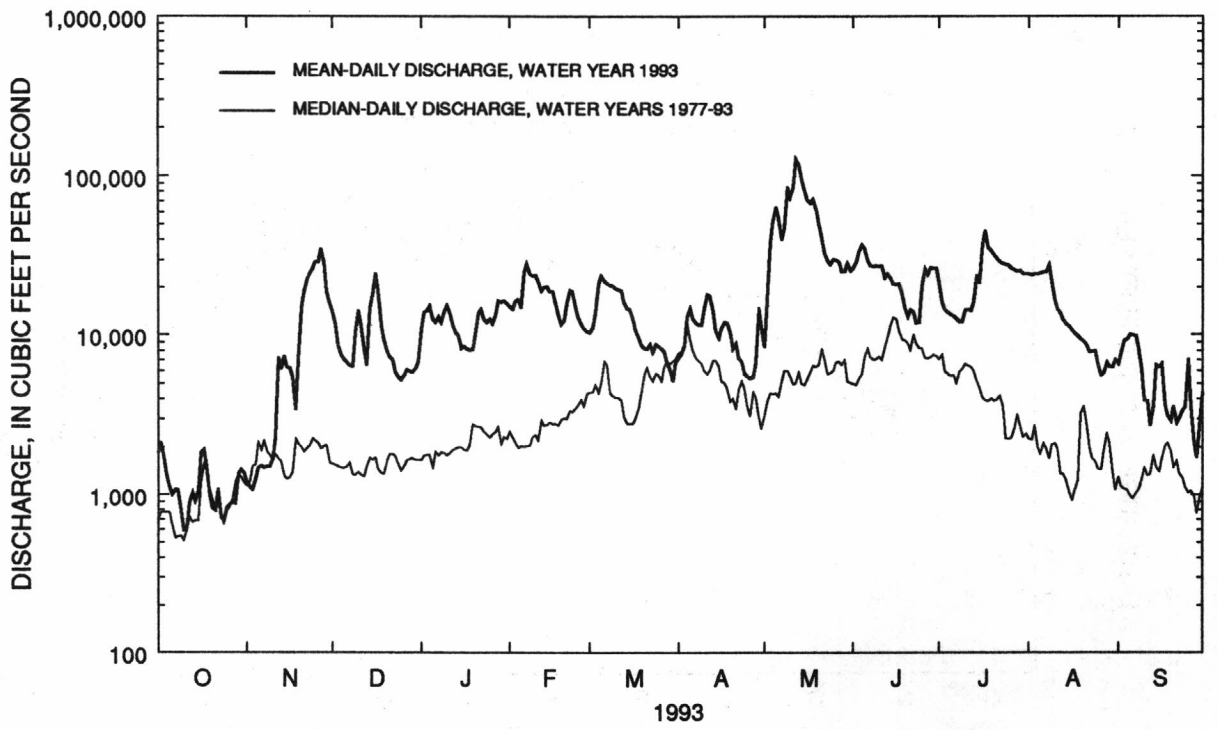


Figure 2.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for Arkansas River at Ralston, Oklahoma.

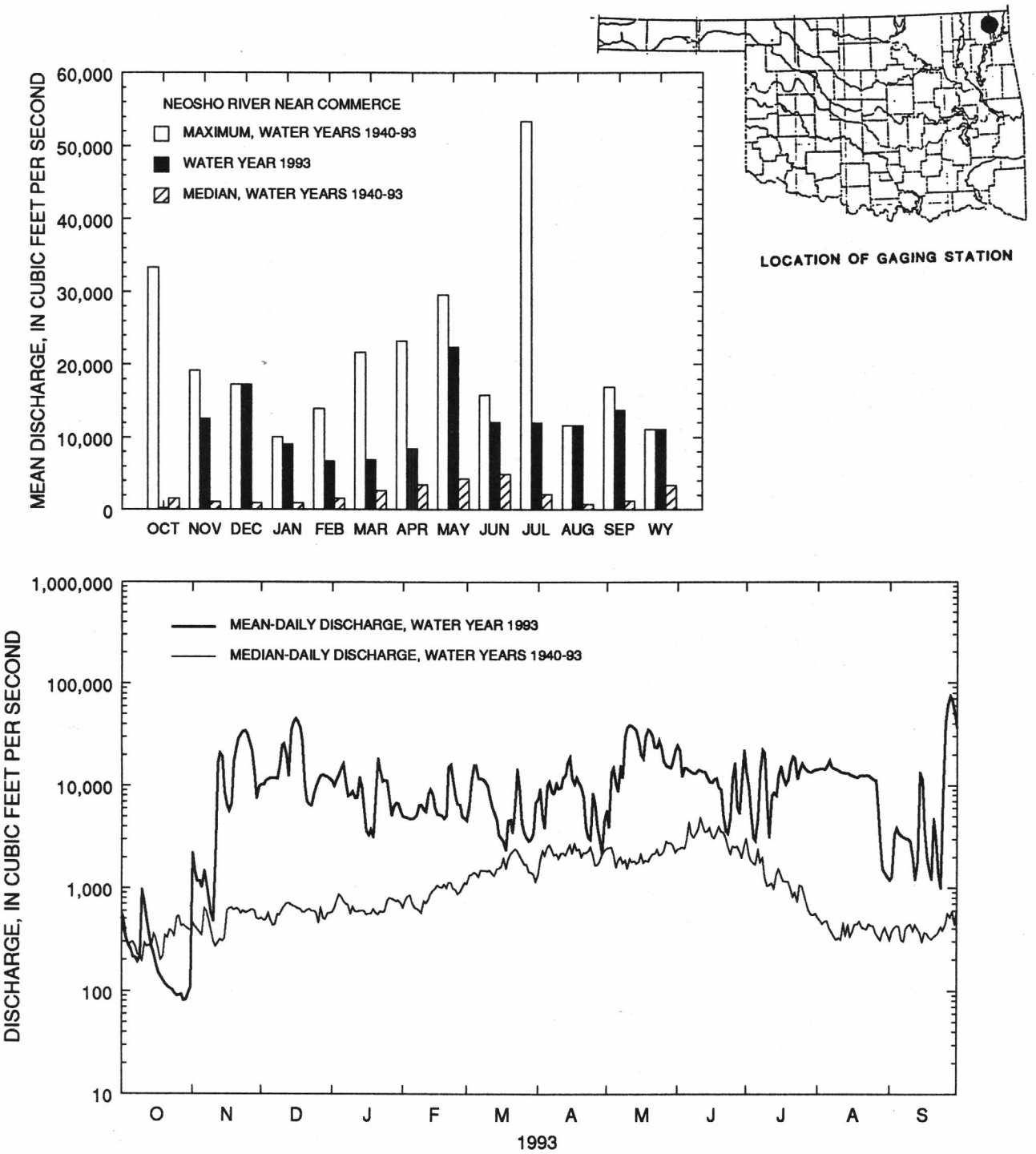
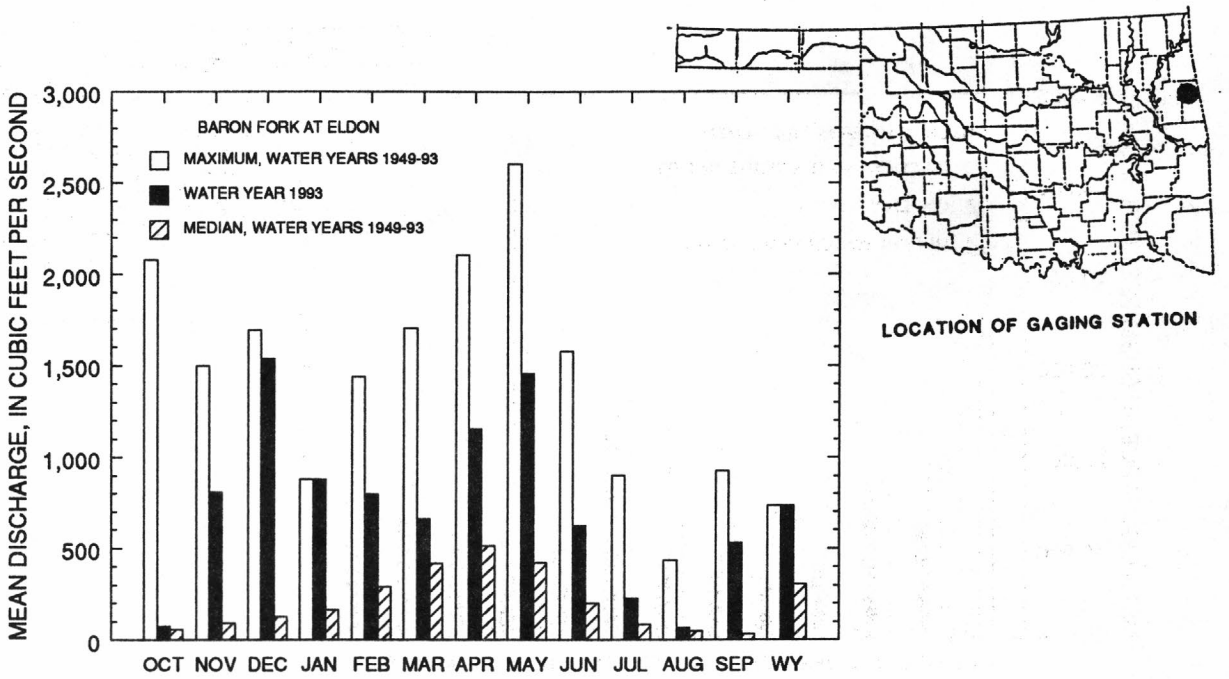


Figure 3.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for Neosho River near Commerce, Oklahoma.



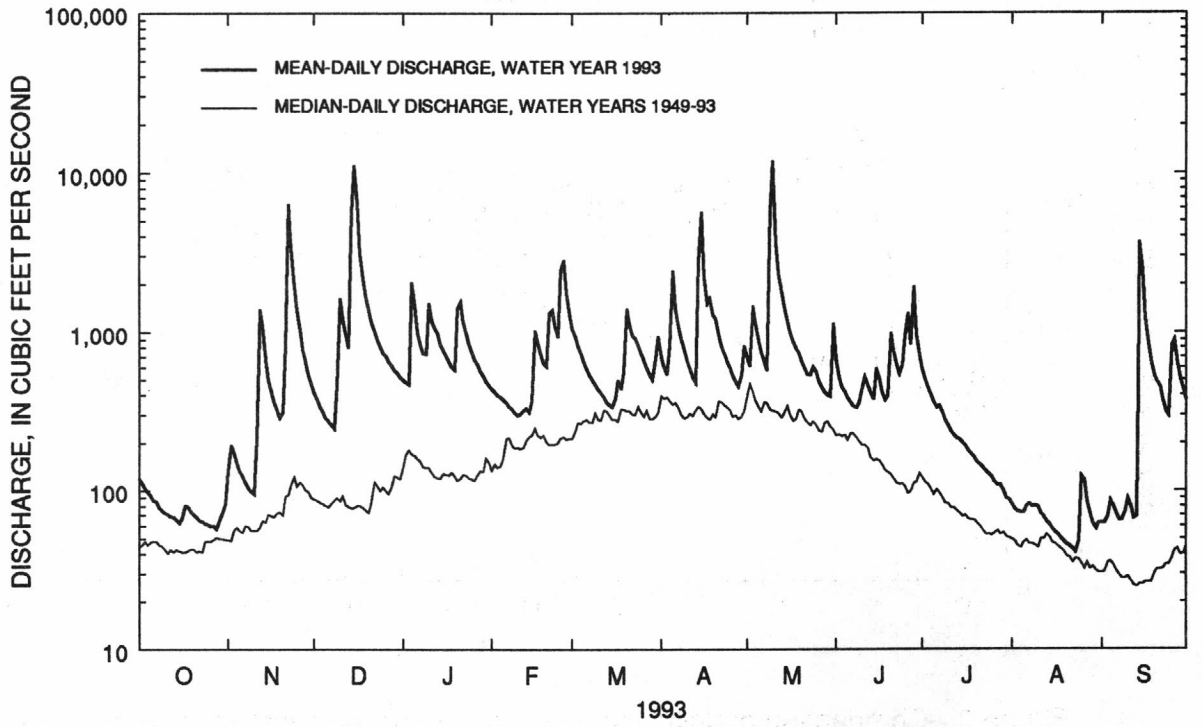


Figure 4.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for Baron Fork at Eldon, Oklahoma.

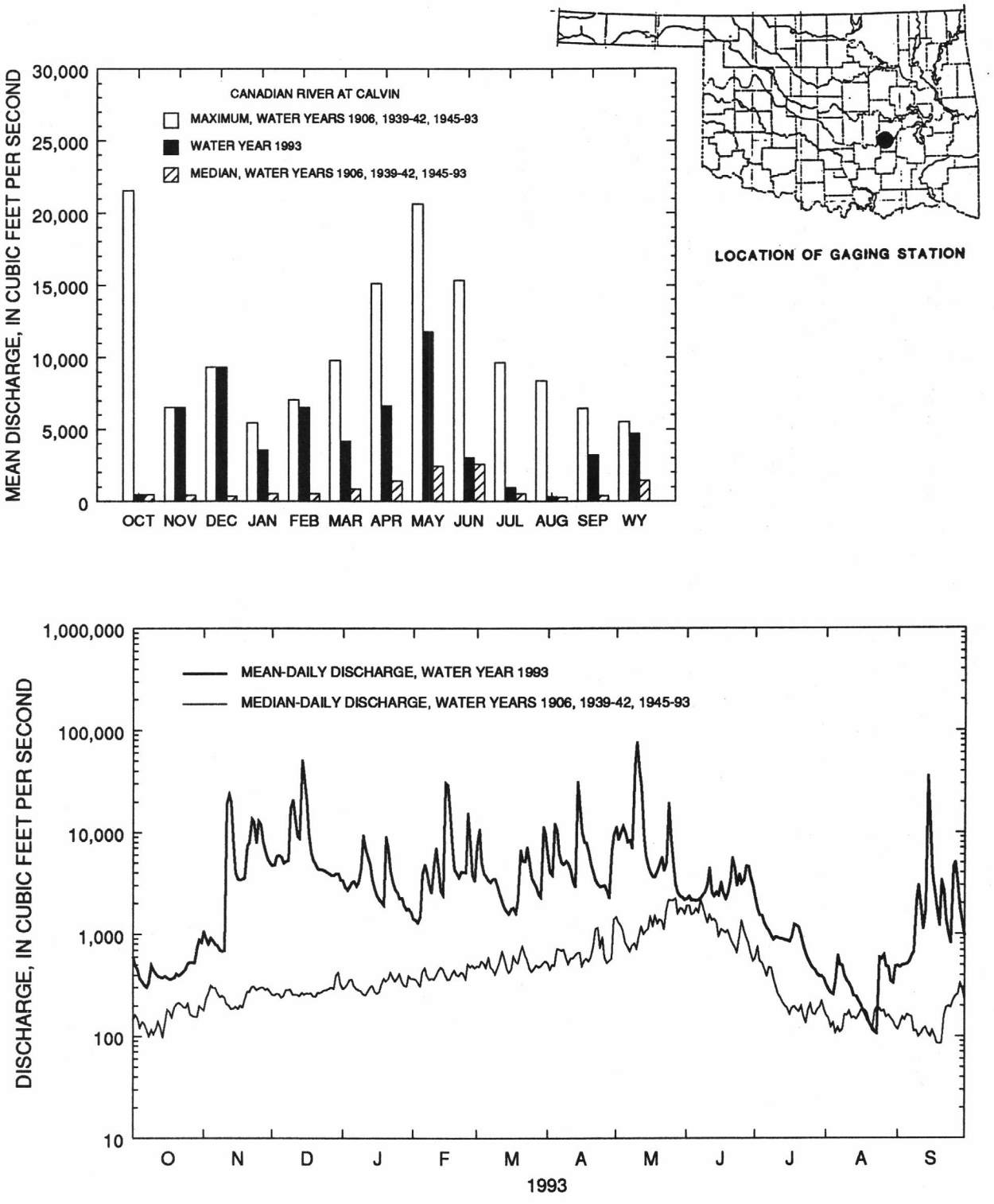
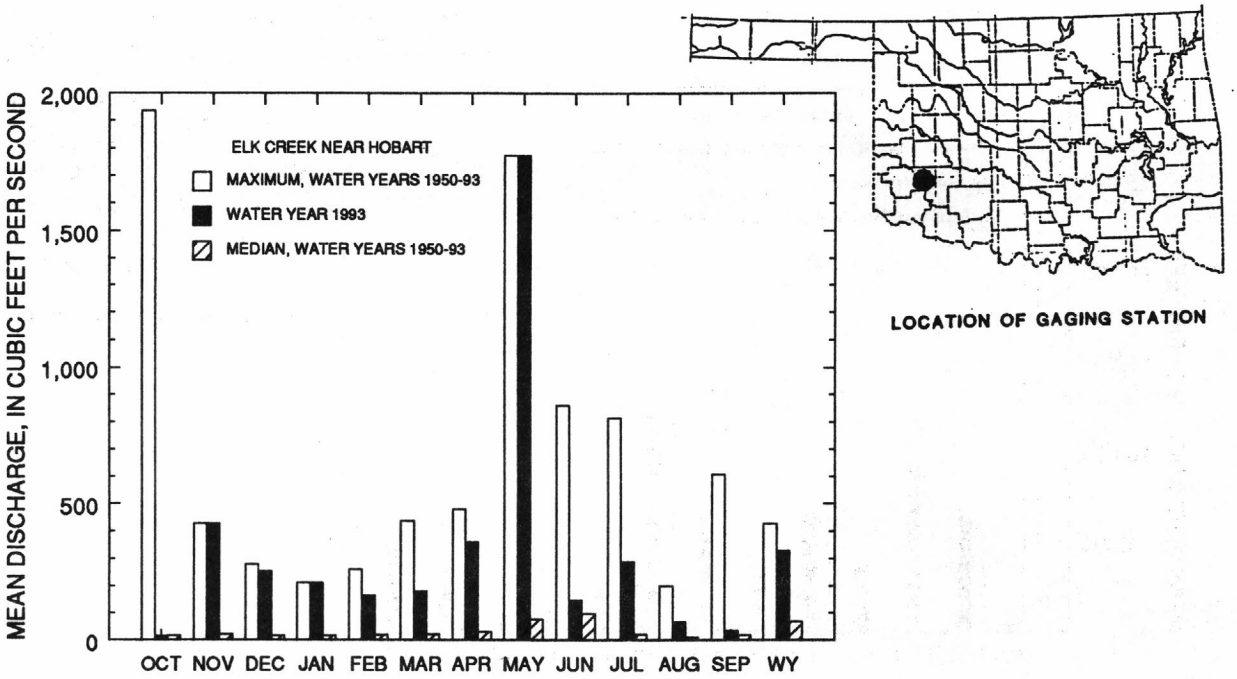


Figure 5.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for Canadian River at Calvin, Oklahoma.



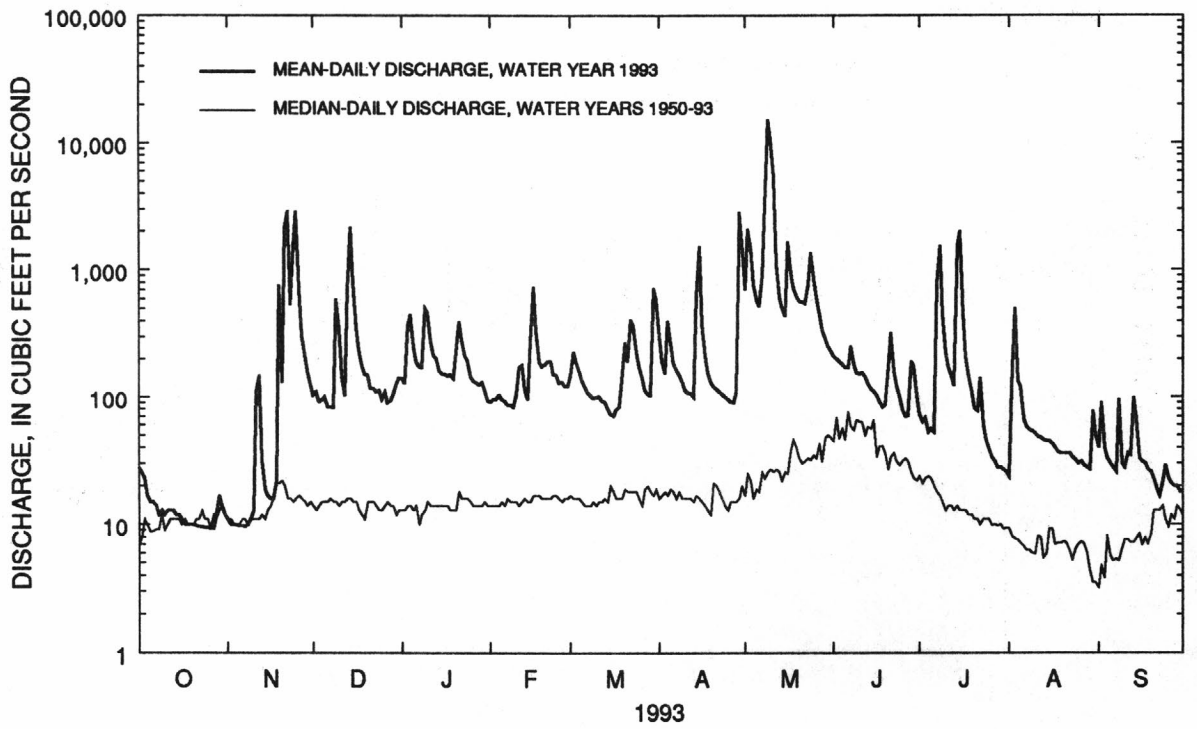
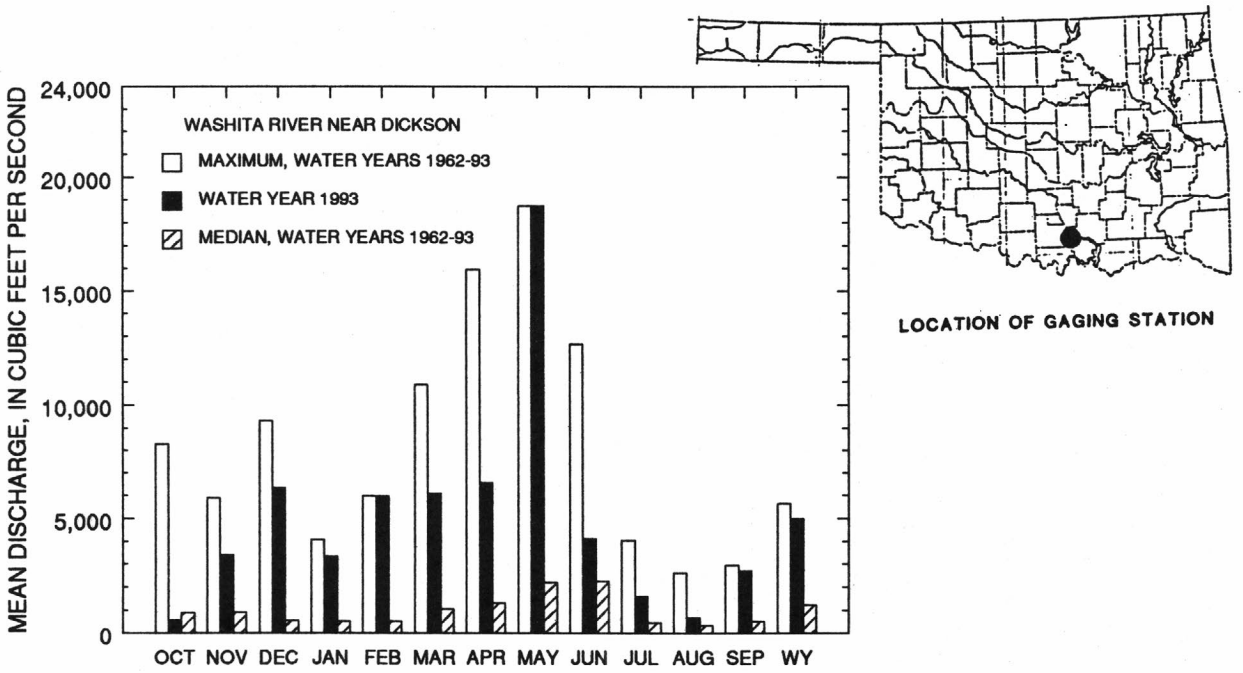


Figure 6.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for Elk Creek near Hobart, Oklahoma.



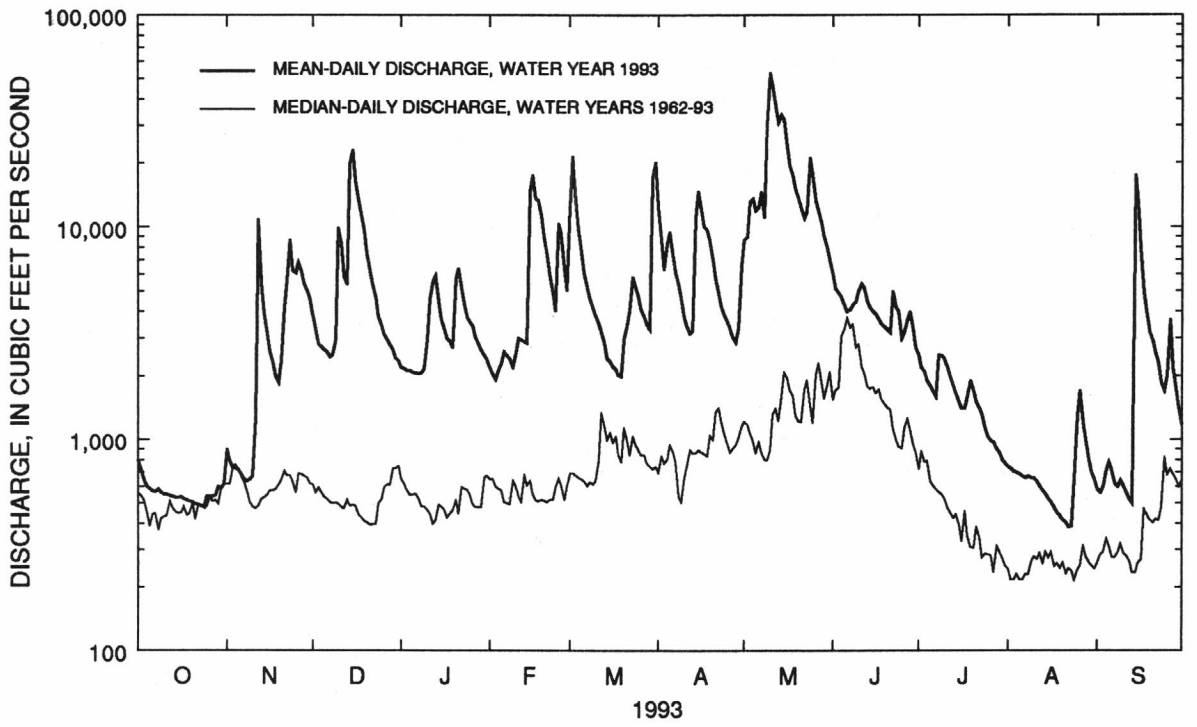
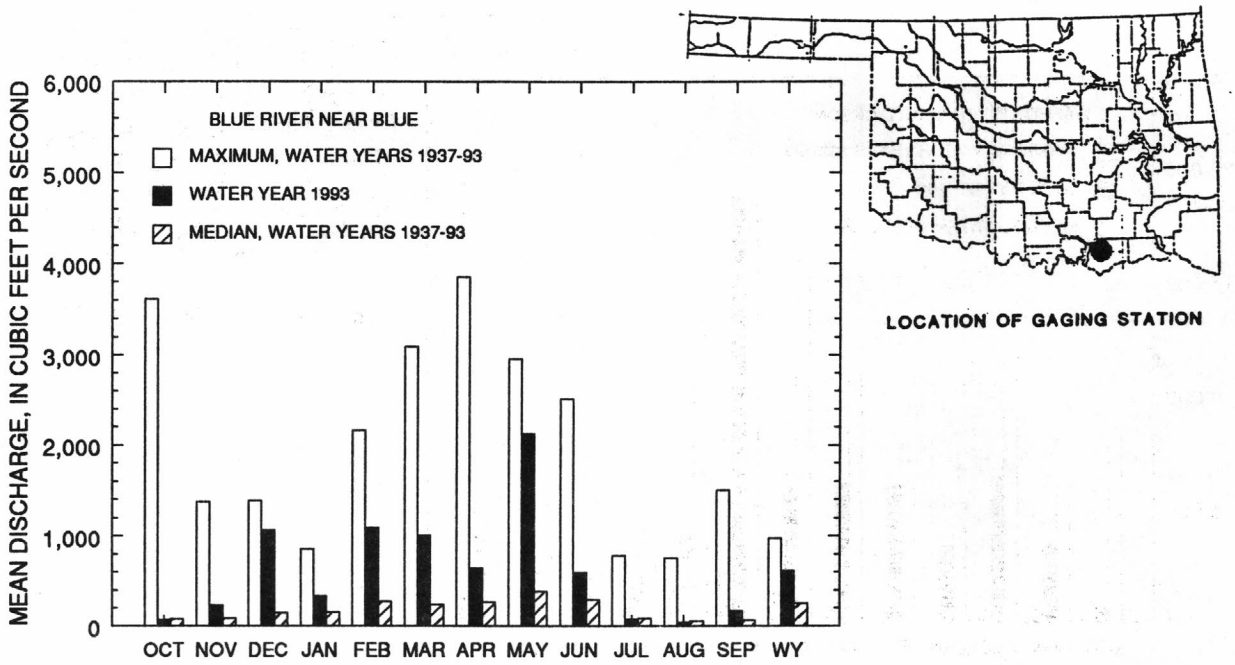


Figure 7.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for Washita River near Dickson, Oklahoma.



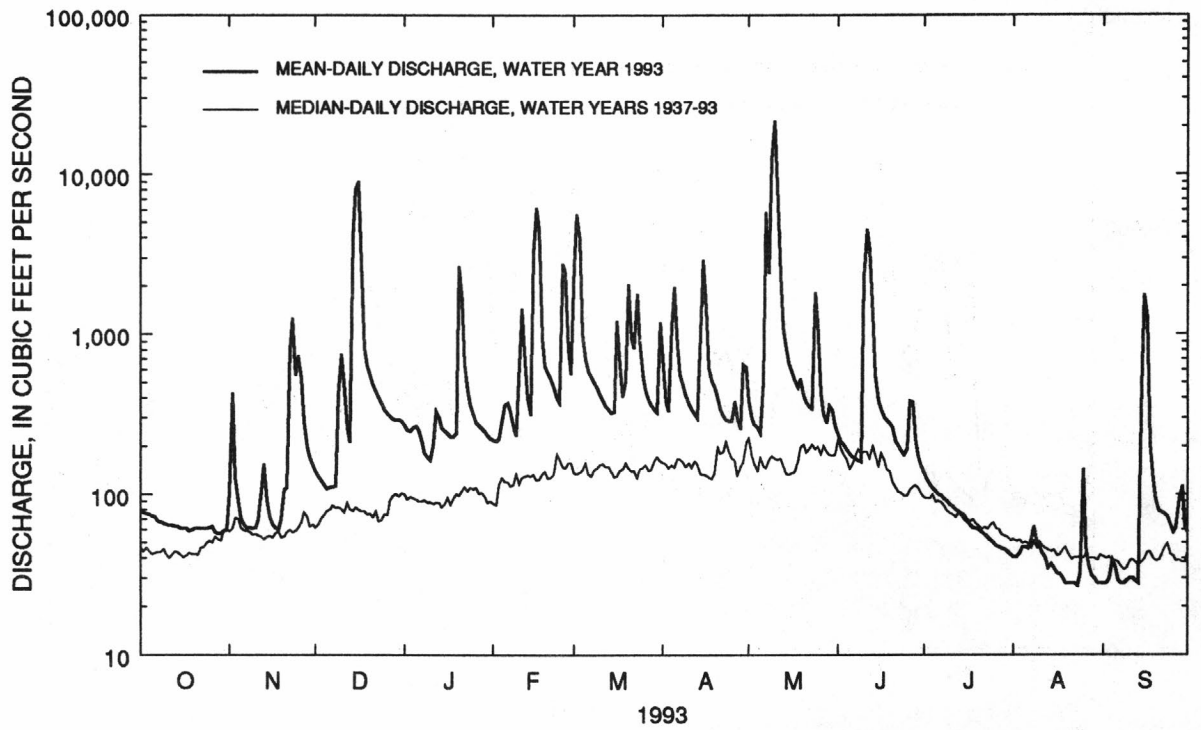


Figure 8.--Comparison of daily, monthly, and annual discharges for water year 1993 and period of record for Blue River near Blue, Oklahoma.

Chemical Quality of Streamflow

The concentrations of selected dissolved chemical constituents measured at surface-water sampling stations in the State during the 1993 water year were generally within the ranges measured during previous years. The minimum values for the selected constituents for most stations were larger for the 1993 water year than the minimum values for the 1970 through 1990 water years. The maximum values for these same constituents were smaller for most stations for the 1993 water year than the maximum values for the 1970 through 1990 water years. Concentrations of dissolved solids, chloride, sulfate, and suspended sediment are shown in the following graphs for sampling sites on selected principal streams (fig. 9) in the State. Maximum and minimum concentrations of these constituents for the 1993 water year are compared to maximum and minimum concentrations for the 1970 through 1990 water years.

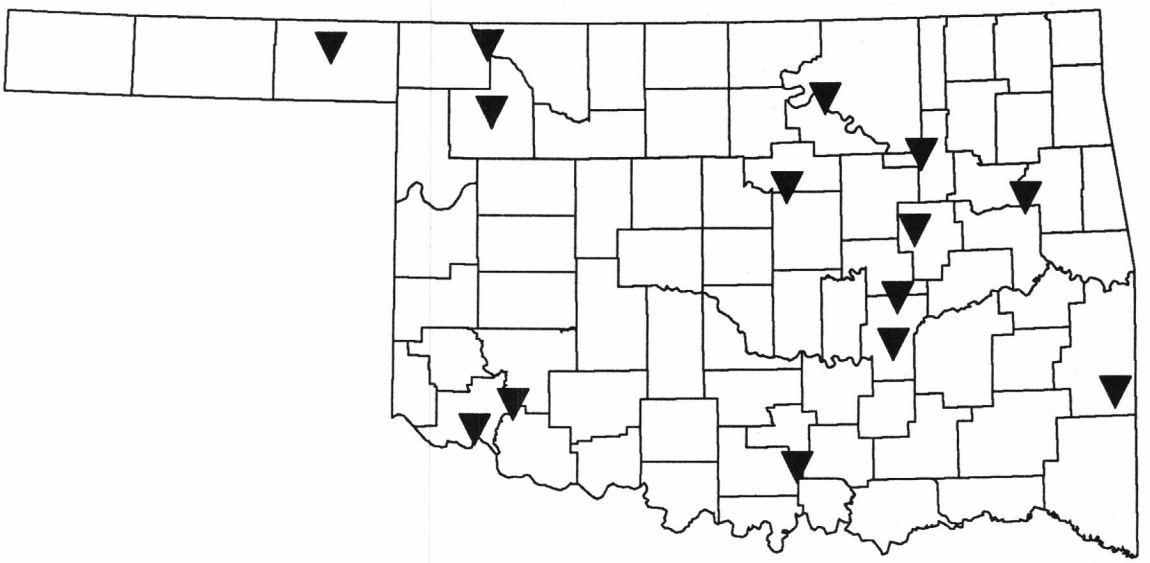
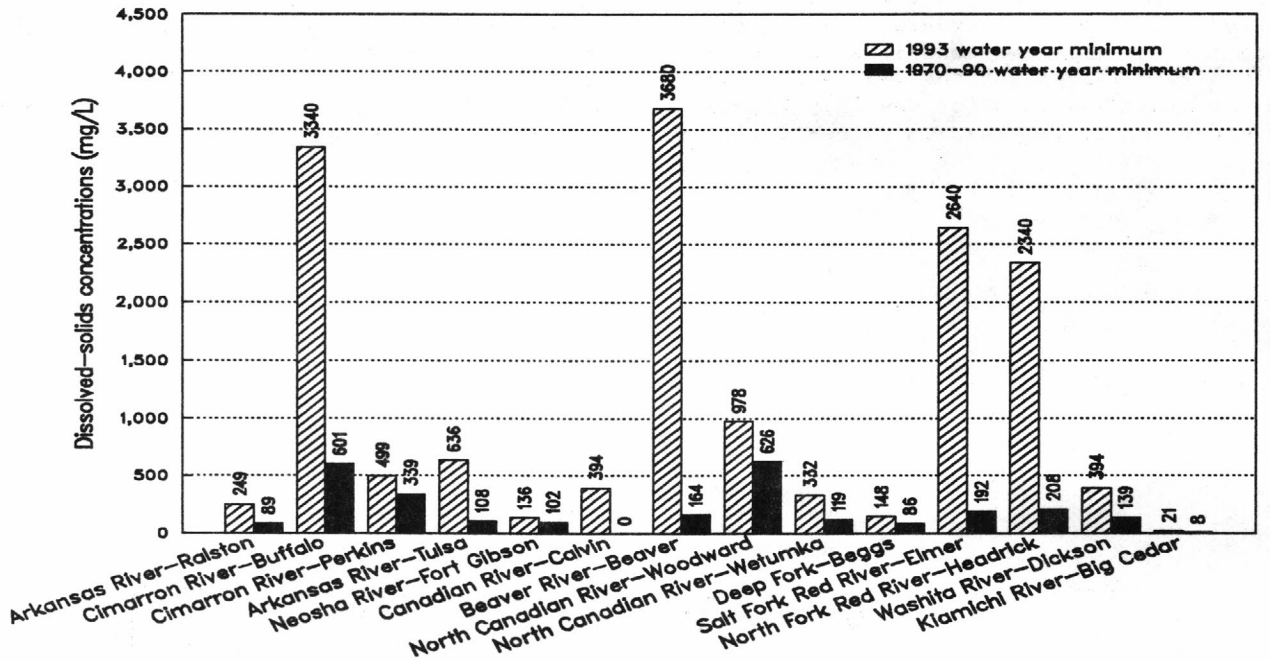


Figure 9.—Location of water-quality stations on selected principal streams.

The maximum dissolved-solids concentration measured in these streams in 1993 was 16,500 milligrams per liter (mg/L) in the Cimarron River near Buffalo. Dissolved-solids concentrations, in mg/L, are shown in the following graphs:



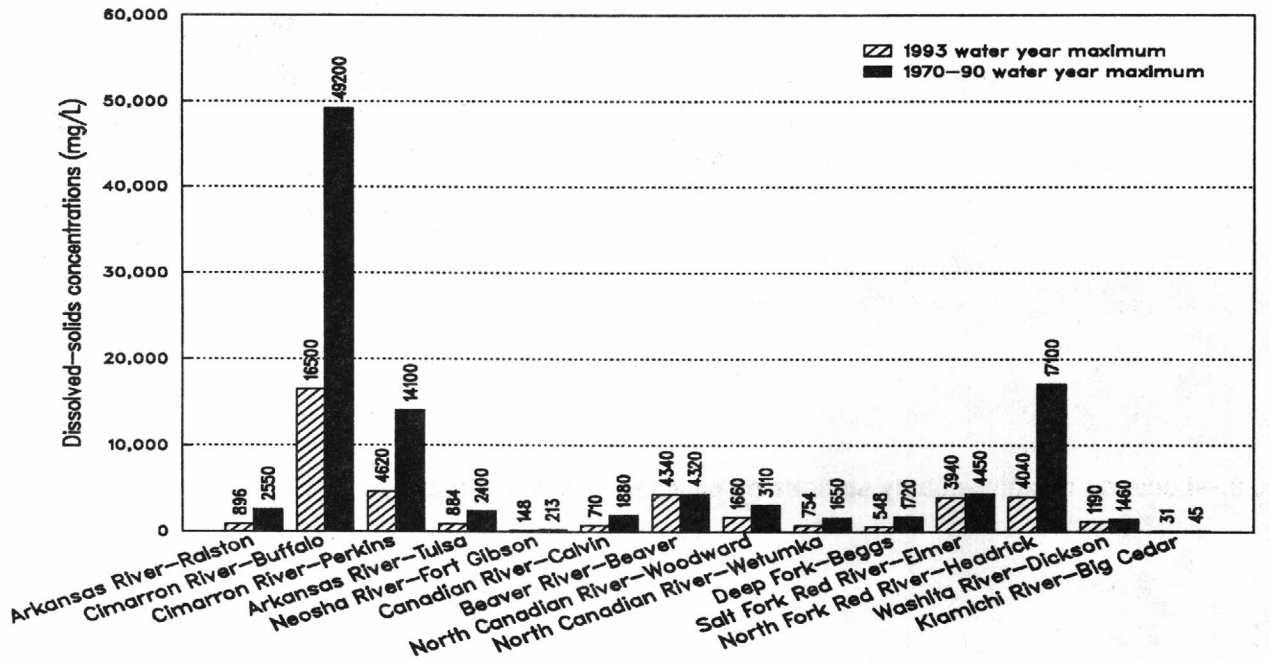


Figure 10.—Comparisons of minimum and maximum dissolved-solids concentrations, in milligrams per liter (mg/L) for water year 1993 and water years 1970-90.

The maximum dissolved-chloride concentration measured at the selected stations in 1993 was 9,900 mg/L in the Cimarron River near Buffalo. Dissolved-chloride concentrations, in mg/L, are shown in the following graphs:

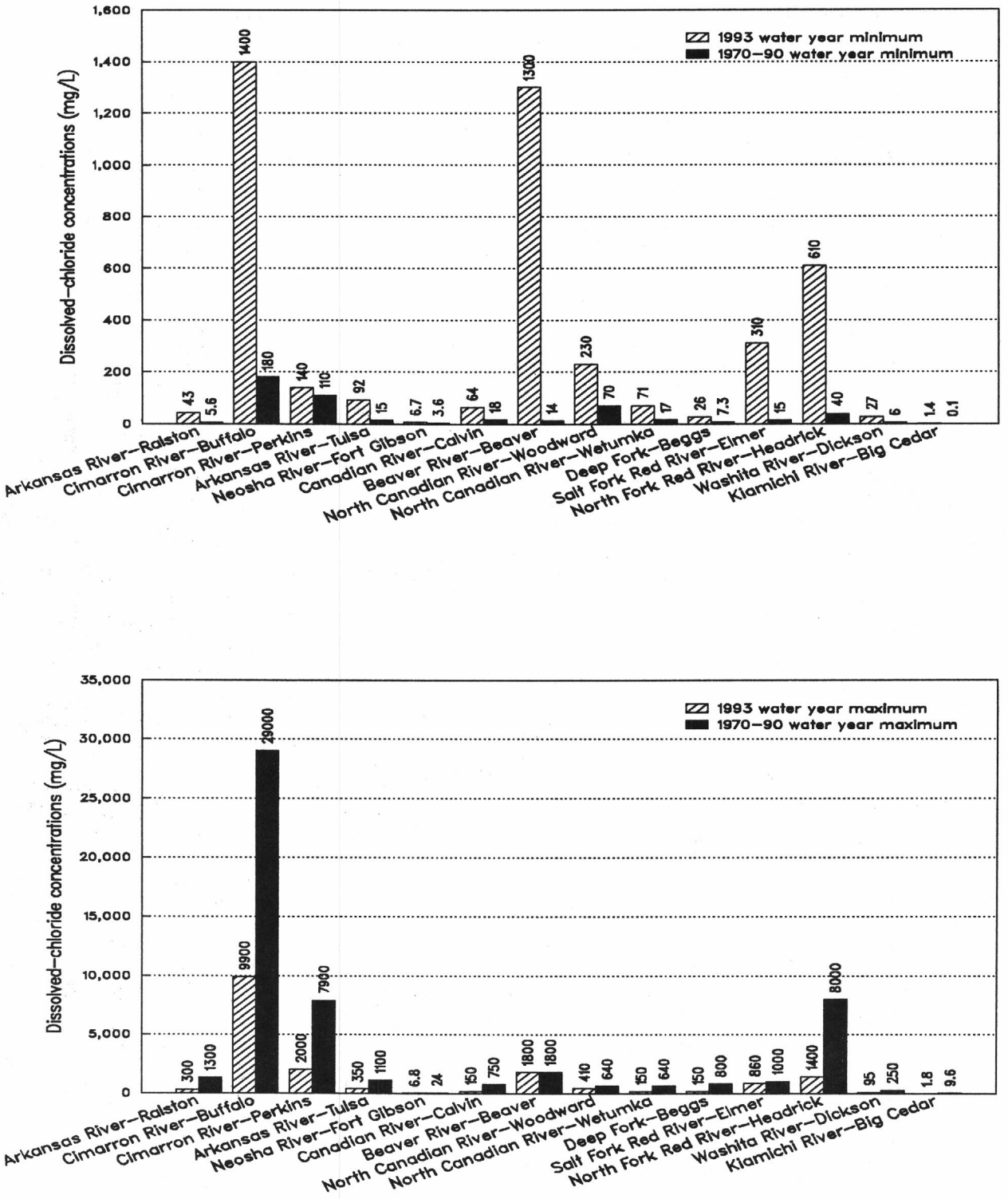


Figure 11.—Comparisons of minimum and maximum dissolved-chloride concentrations, in milligrams per liter (mg/L) for water year 1993 and water years 1970-90.

The maximum dissolved-sulfate concentration measured at the selected stations in 1993 was 1,600 mg/L in the Salt Fork Red River near Elmer. Dissolved-sulfate concentrations, in mg/L, are shown in the following graphs:

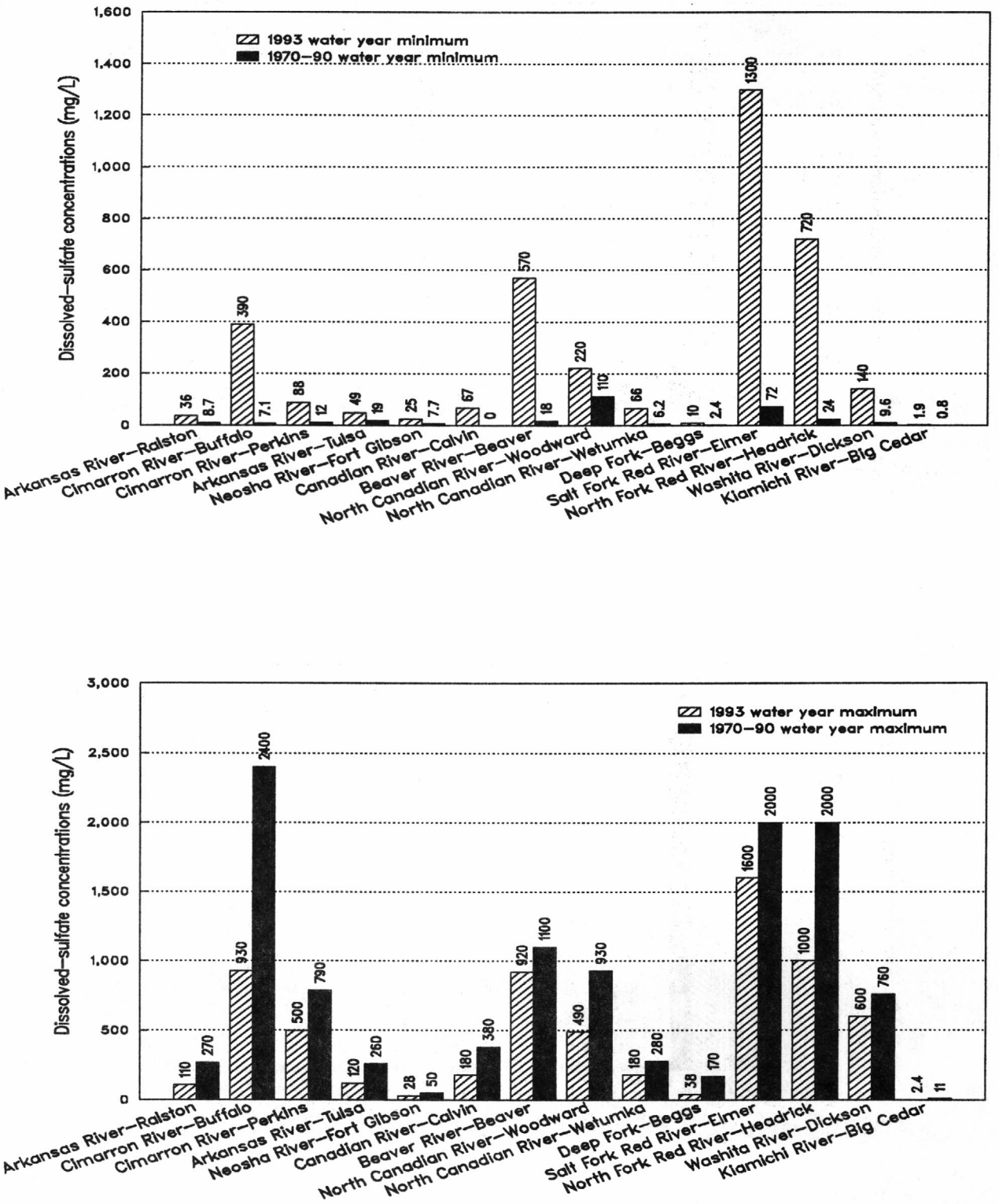


Figure 13.—Comparisons of minimum and maximum suspended-sediment concentrations, in milligrams per liter (mg/L) for water year 1993 and water years 1970-90.

The maximum suspended-sediment concentration measured at the selected stations in 1993 was 7,610 mg/L in the Washita River near Dickson.

Suspended-sediment concentrations, in mg/L, are shown in the following graphs:

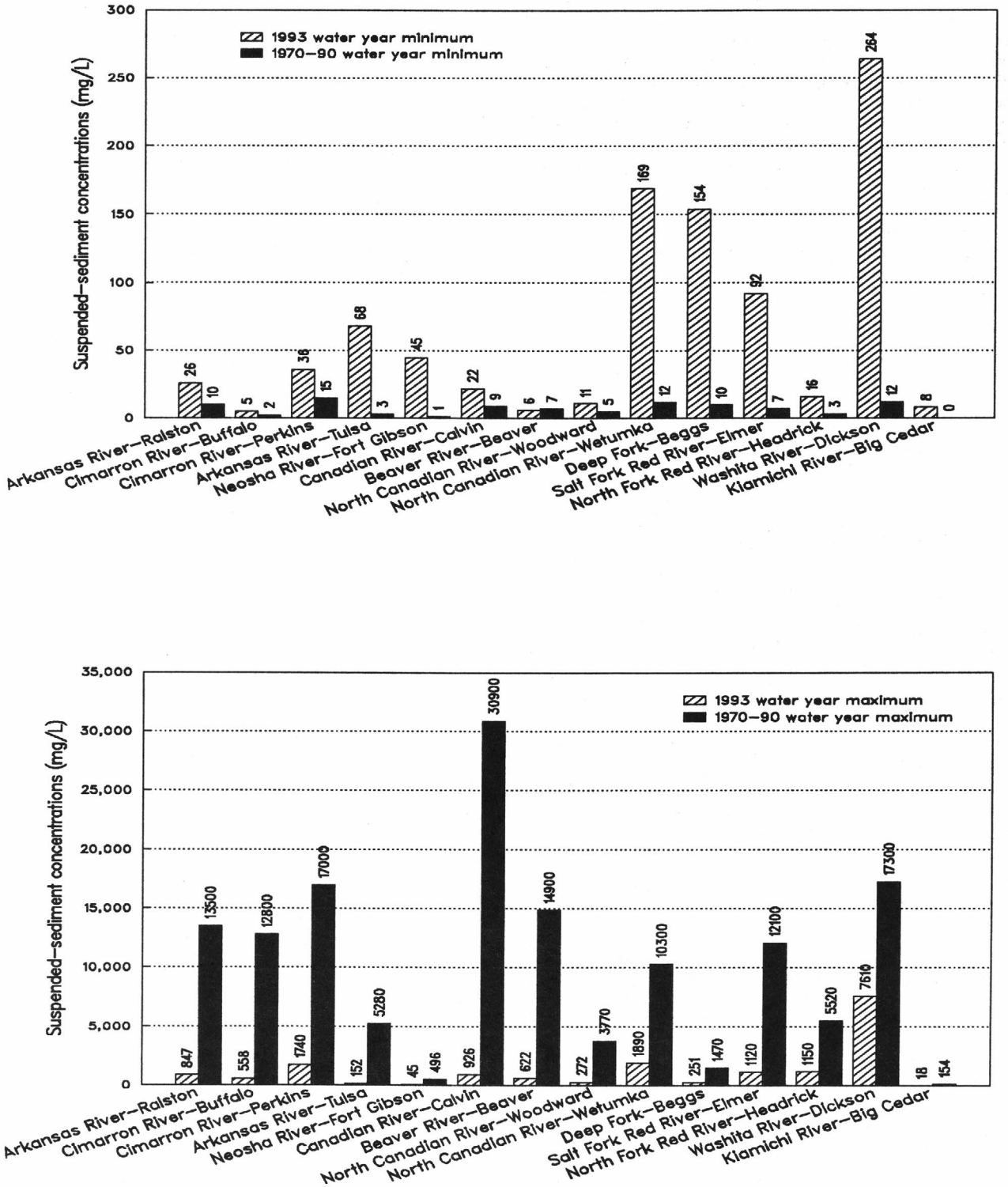


Figure 13.—Comparisons of minimum and maximum suspended-sediment concentrations, in milligrams per liter (mg/L) for water year 1993 and water years 1970-90.

Ground Water

Ground-water levels are measured annually at more than 700 sites statewide during January to March. An additional 28 sites are part of a network of sites visited quarterly, monthly, or that have continuous recorders.

Figures 14-18 show 3-year hydrographs for five of the continuous recorder sites throughout the State. The hydrograph of the Idabel GW Well (McCurtain County) (fig. 14) is representative of seasonal variations in water levels in a shallow well in an irrigated area.

The hydrographs of the Texhoma GW Well (Texas County) (fig. 15) and the Sharon GW well (Woodward County) (fig. 16) are indicative of the long-term decline of water levels in the Ogallala aquifer. The Texhoma well was the only reporting well that recorded a new low water level of record. The Sharon well had averaged a water-level decline of nearly one foot per year for the last five years until a reversal this water year.

Conversely, the Taloga GW well (Dewey County) (fig. 17) hydrograph shows recovering water levels in the Rush Springs aquifer for the last three years. The Taloga well was one of 11 wells that recorded a new highest water level of record.

The hydrograph for the Fittstown GW well (Pontotoc County) (fig. 18) indicates water levels that respond rapidly to precipitation and slowly recede. Water levels are elevated after above-normal precipitation in this area for the past two years

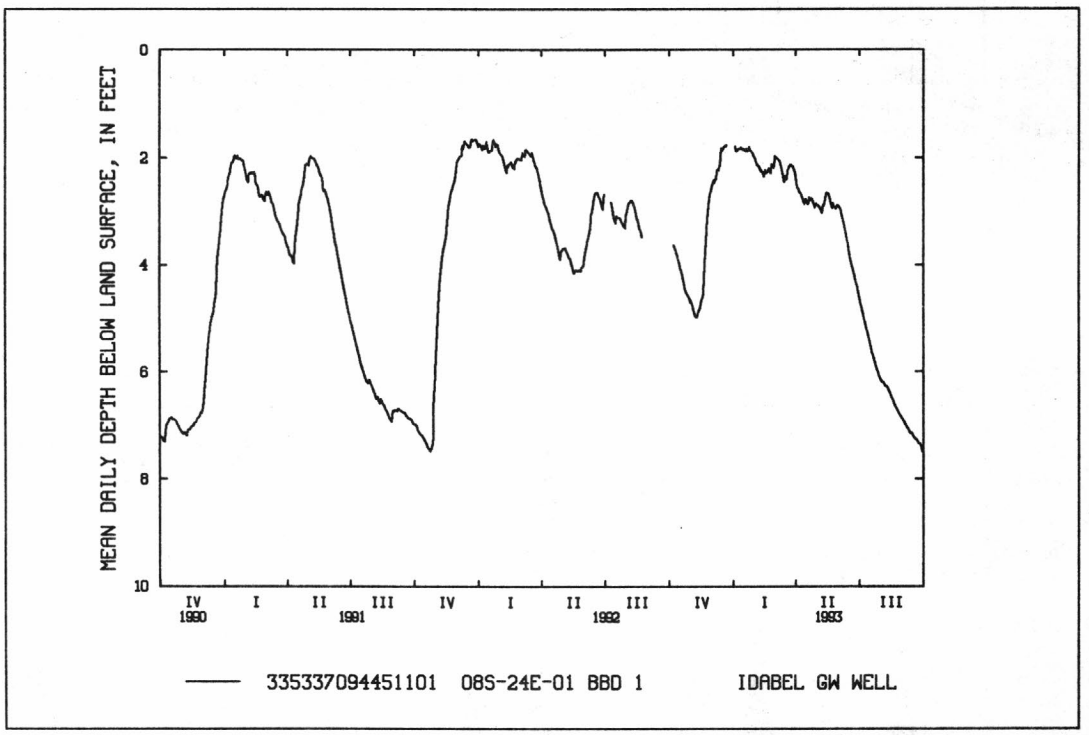


Figure14.—Hydrograph for well 08S-24E-01 BBD 1 (Idabel GW Well, 335337094451101) for water year 1991-93.

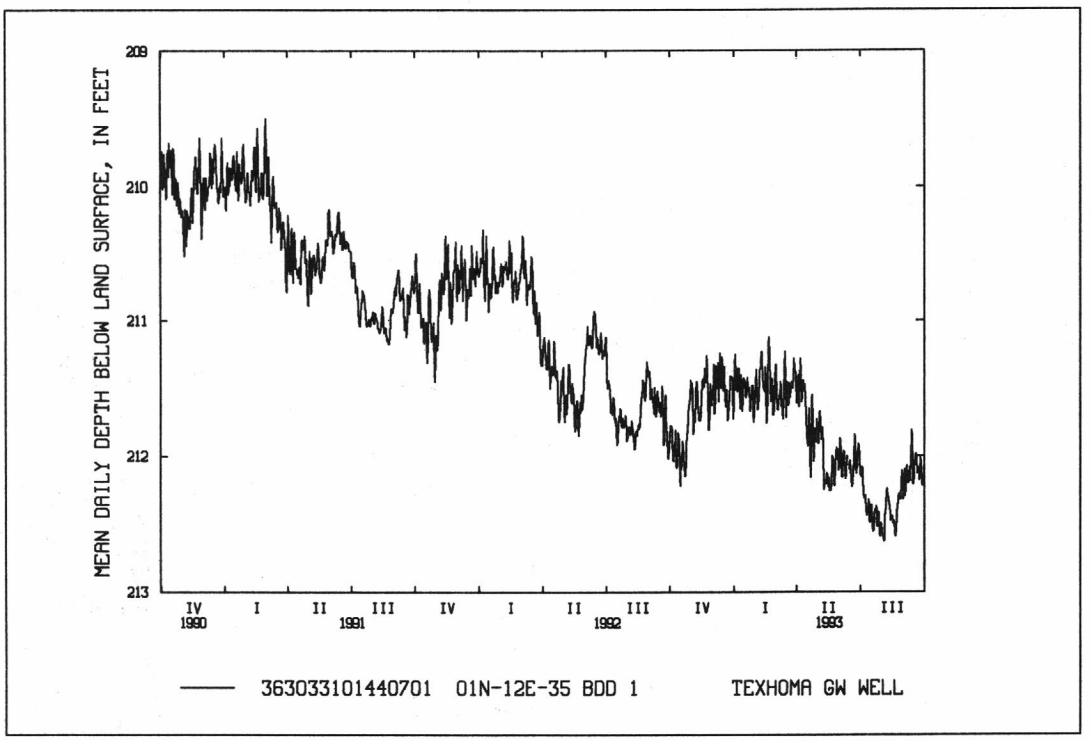


Figure 15.—Hydrograph for well 01N-12E-35 BDD 1 (Texhoma GW Well, 363033101440701) for water years 1991-93.

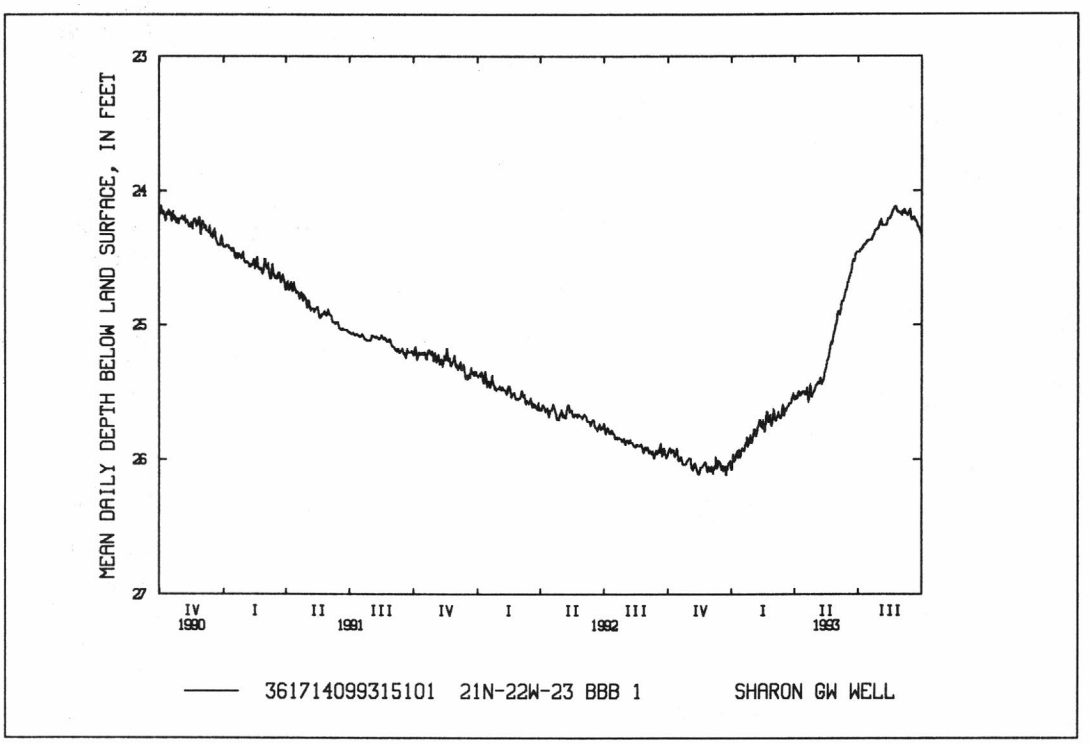


Figure 16.—Hydrograph for well 21N-22W-23 BBB 1 (Sharon GW Well, 361714099315101) for water years 1991-93.

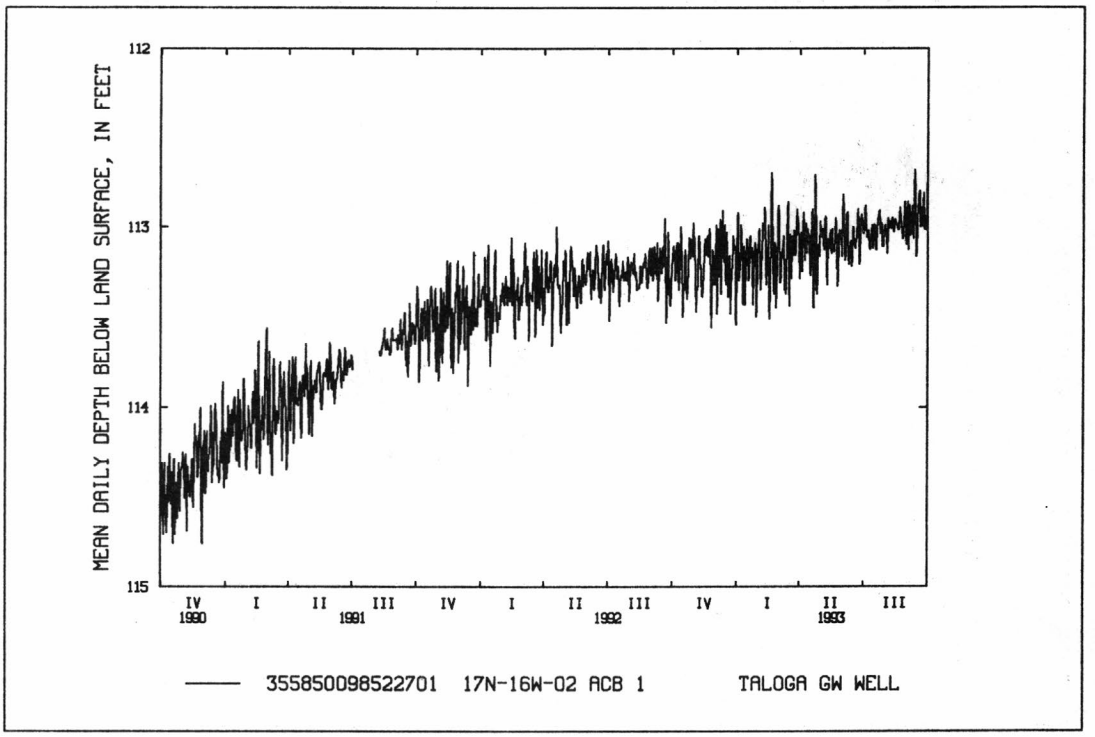


Figure 17.—Hydrograph for well 17N-16W-02 ACB 1 (Taloga GW Well, 355850098522701) for water years 1991-93.

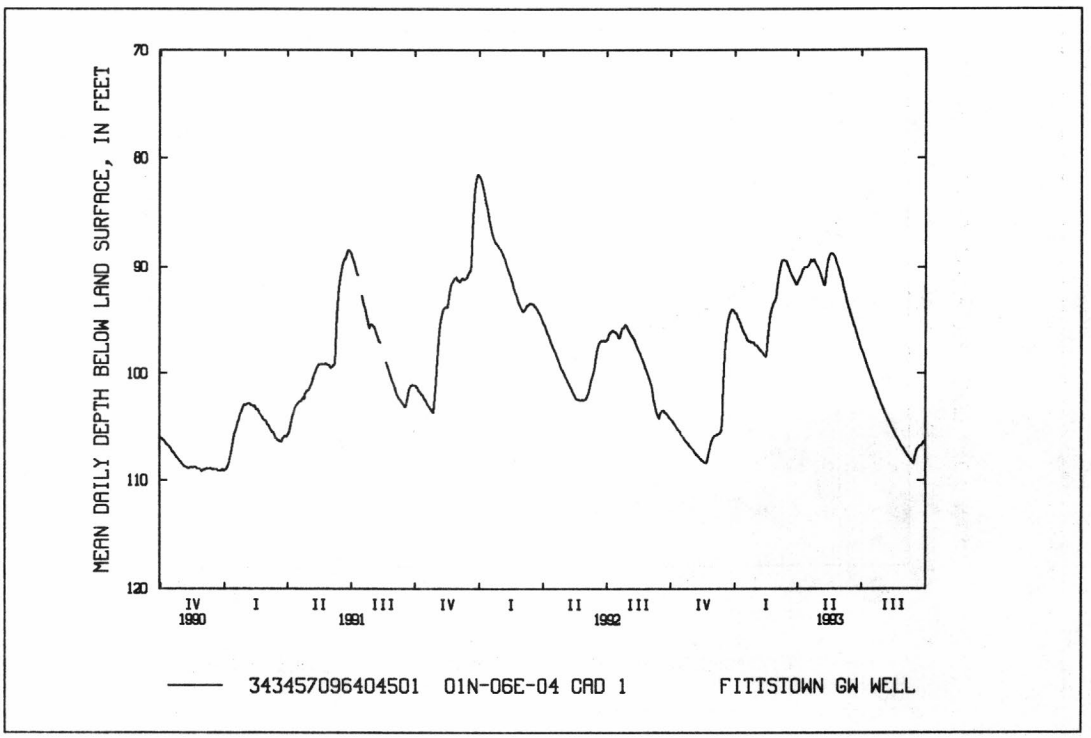


Figure 18.—Hydrograph for well 01N-06E-04 CAD 1 (Fittstown GW Well, 343457096404501) for water years 1991-93.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in respresentative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a network for sampling atmospheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

EXPLANATION OF THE RECORDS

The surface-water and ground-water records published in this report are for the 1993 water year that began Oct. 1, 1992, and ended Sept. 30, 1993. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, water-quality data for surface water and water levels for ground water. The locations of the stations where the data were collected are shown in figures 19-22. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

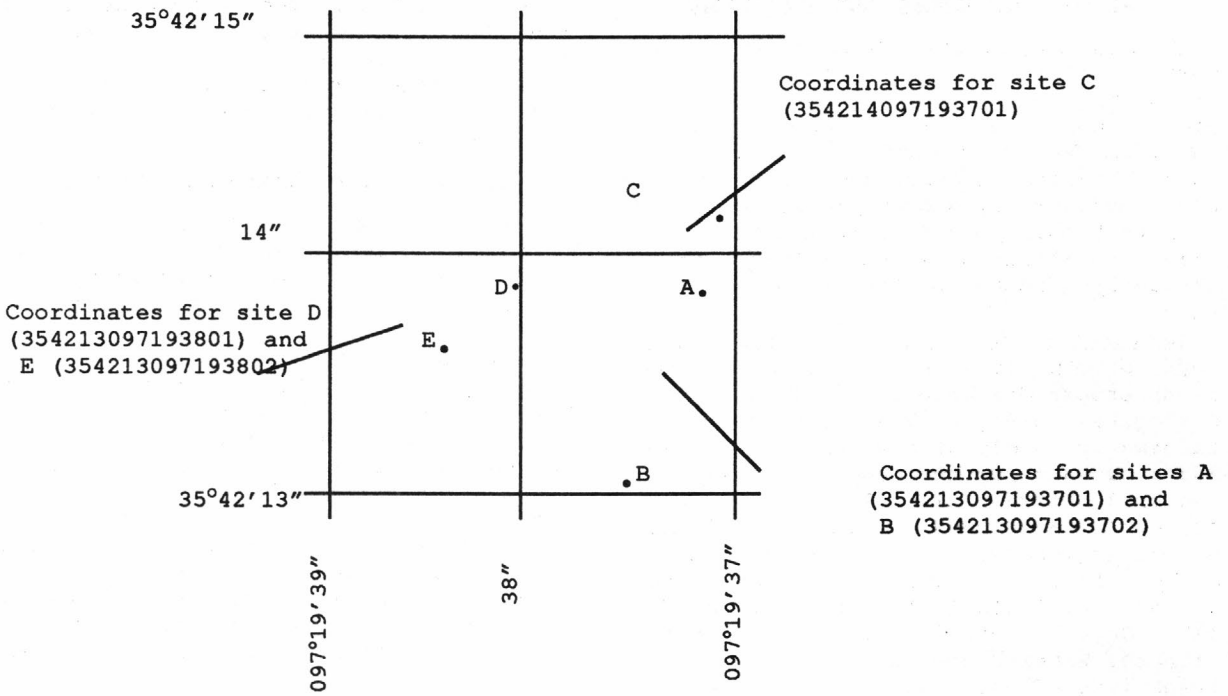
Station Identification Numbers

Each data station in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given station and to no other. The number usually is assigned when a station is first established and is retained for that station indefinitely. The systems used by the U.S. Geological Survey to assign identification numbers for surface-water stations and for ground-water wells sites differ, but both are based on geographic location. The "downstream order" system is used for regular surface-water stations and the "latitude-longitude" system is used for wells and, in Oklahoma, for surface-water stations where only miscellaneous measurements are made.

Downstream Order System

Since Oct. 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

The station-identification number is assigned according to downstream order. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete number for each station, such as 07152500, which appears just to the left of the station name, includes the two-digit Part number "07" plus the up to 13-digit downstream-order number "152500." The Part number designates the major river basin; for example,



System for numbering miscellaneous and ground-water sites (latitude and longitude)

part "07" is the Lower Mississippi River basin.

Latitude-Longitude System

The identification numbers for wells and springs are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the sites within a 1-second grid. This site-identification number, once assigned, is a pure number, and has no locational significance. In instances where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description. (See figure above.)

Records of Stage and Water Discharge

Records of stage and water discharge may be complete or partial. Complete records of discharge are those obtained using a continuous stage-recording device through which either instantaneous or mean daily discharge may be computed for any time, or any period of time, during the period of record. Complete records of lake or reservoir content, similarly, are those for which stage or content may be computed or estimated with reasonable accuracy for any time, or period of time. They may be obtained using a continuous stage-recording device, but need not be. Because daily mean discharges and end-of-day contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements without using a continuous stage-recording device and pertain only to a few flow characteristics, or perhaps only one. The nature of the partial record is indicated by table titles such as "Crest-stage partial records," or "Low-flow partial records." Location of all complete-record, crest-stage partial-record, and low-flow partial-record stations for which data are given in this report are shown in figures 19, 21.

Data Collection and Computation

The data obtained at a complete-record gaging station on a stream or canal consist of a continuous record of stage, individual measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relationships between stage and discharge. These data, together with supplemental information, such as weather records, are used to compute daily discharges. The data obtained at a complete-record gaging station on a lake or reservoir consist of a record of stage and of notations regarding factors that may affect the relationship between stage and lake content. These data

are used with stage-area and stage-capacity curves or tables to compute water-surface areas and lake storage.

Continuous records of stage are obtained with analog recorders that trace continuous graphs of stage or with digital recorders that punch stage values on paper tapes at selected time intervals or with electronic data loggers. Measurements of discharge are made with current meters using methods adapted by the Geological Survey as a result of experience accumulated since 1880. These methods are described in standard textbooks, in Water-Supply Paper 2175, and in U.S. Geological Survey Techniques of Water-Resources Investigations, Book 3, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves are then constructed. From these curves, rating tables indicating the approximate discharge for any stage within the range of the measurements are prepared. It is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves are extended using: (1) logarithmic plotting; (2) velocity-area studies; (3) results of indirect measurements of peak discharge, such as slope-area or contracted-opening measurements, and computations of flow-over-dams or weirs; or (4) step-backwater techniques.

Daily mean discharges are computed by applying the daily mean stages (gage heights) to the stage-discharge curves or tables. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the shifting-control method, in which correction factors based on the individual discharge measurements and notes of the personnel making the measurements are applied to the gage heights before the discharges are determined from the curves or tables. This shifting-control method also is used if the stage-discharge relation is changed temporarily because of aquatic growth or debris on the control. For some stations, formation of ice in the winter may so obscure the stage-discharge relations that daily mean discharges must be estimated from other information such as temperature and precipitation records, notes of observations, and records for other stations in the same or nearby basins for comparable periods.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

In computing records of lake or reservoir contents, it is necessary to have available from surveys, curves or tables defining the relationship of stage and content. The application of stage to the stage-content curves or tables gives the contents from which daily, monthly, or yearly changes then are determined. If the stage-content relationship changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relationship. Even when this is done, the contents computed may become increasingly in error as time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relationships much as other stream discharges are computed.

For some gaging stations there are periods when no gage-height record is obtained, or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily discharges are estimated from the recorded range in stage, previous or following record, discharge measurements, weather records, and comparison with other station records from the same or nearby basins. Likewise, daily contents may be estimated from operator's logs, previous or following record, inflow-outflow studies, and other information.

Data Presentation

Streamflow data in this report are presented in a new format that is considerably different from the format in data reports prior to the 1992 water year. The major changes are that statistical characteristics of discharge now appear in tabular summaries following the water-year data table and less information is provided in the text or station manuscript above the table. These changes represent the results of a program to reformat the annual water-data report to most current user needs and data preferences.

The records published for each continu-

ous-record surface-water discharge station (gaging station) now consist of five parts, the manuscript or station description; the data table of daily mean values of discharge for the current water year with summary data; a tabular statistical summary of monthly mean flow data for a designated period, by water year; a summary statistics table that includes statistical data of annual daily, and instantaneous flows as well as data pertaining to annual runoff, 7-day low-flow minimums, and flow duration; and a hydrograph

Station Manuscript

The manuscript provides, under various headings, descriptive information, such as station location; period of record; historical extremes outside the period of record; record accuracy; and other remarks pertinent to station operation and regulation. The following information as appropriate, is provided with each continuous record of discharge or lake content. Comments to follow clarify information presented under the various headings of the station description.

LOCATION.--Information on locations is obtained from the most accurate maps available. The location of the gage with respect to the cultural and physical features in the vicinity and with respect to the reference place mentioned in the station name is given. River mileages, given for most stations, were determined by methods given in "River Mileage Measurement," Bulletin 14, Revision of October 1968, prepared by the Water Resources Council or were provided by the U.S. Army Corps of Engineers.

DRAINAGE AREA.--Drainage areas are measured using the most accurate maps available. Because the type of maps available varies from one drainage basin to another, the accuracy of drainage areas likewise varies. Drainage areas are updated as better maps become available.

PERIOD OF RECORD.--This indicates the period for which there are published records for the station or for an equivalent station. An equivalent station is one that was in operation at a time that the present station was not, and whose location was such that records from it can reasonably be considered equivalent with records from the present station.

REVISED RECORDS.--Published records, because of new information, occasionally are found to be incorrect, and revisions are printed in later reports. Listed under this heading are all the reports in which revisions have been published for the station and the water years to which the revisions apply. If a revision did not include daily, monthly, or annual figures of discharge, that fact is noted after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the most recently revised figure was first published is given.

GAGE.--The type of gage in current use, the datum of the current gage referred to sea level (see glossary), and a condensed history of the types, locations, and datums of previous gages are given under this heading.

REMARKS.--All periods of estimated daily discharge will either be identified by date in this paragraph of the station description for water-discharge stations or flagged in the daily discharge table. (See next section, "Identifying Estimated Discharge.") If a REMARKS paragraph is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph also is used to present information relative to the accuracy of the records, to special methods of computation, and to conditions that affect natural flow at the station. In addition, information may be presented pertaining to average discharge data for the period of record; to extremes data for the period or record and the current year; and possibly, to other pertinent items. For reservoir stations, information is given on the dam forming the reservoir, the capacity, outlet workds and spillway, and purpose and use of the reservoir.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES OUTSIDE PERIOD OF RECORD.--Included here is information concerning major floods or unusually low flows that occurred outside the stated period of record. The information may or may not have been obtained by the U.S. Geological Survey.

REVISIONS.--If a critical error in published records is discovered, a revision is included in the first report published following discovery of the error.

Although rare, occasionally the records of a discontinued gaging station may need revision. Because, for these stations, there would be no current or, possibly, future station manuscript published to document the revision in a "Revised Records" entry, users of data for these stations who obtained the record from pre-

viously published data reports may wish to contact the District Office to determine if the published records were ever revised after the station was discontinued. Of course, if the data were obtained by computer retrieval, the data would be current and there would be no need to check because any published revision of data is always accompanied by revision of the corresponding data in computer storage.

Manuscript information for lake or reservoir stations differs from that for stream stations in the nature of the "Remarks" and in the inclusion of a skeleton stage-capacity table when daily contents are given.

Headings for AVERAGE DISCHARGE, EXTREMES FOR PERIOD OF RECORD, AND EXTREMES FOR CURRENT YEAR have been deleted and the information contained in these paragraphs, except for the listing of secondary instantaneous peak discharges in the PEAK DISCHARGES FOR CURRENT YEAR paragraph, is now presented in the tabular summaries following the discharge table or in the REMARKS paragraph, as appropriate. No changes have been made to the data presentations of lake contents.

Data Table of Daily Mean Values

The daily table of discharge records for stream-gaging stations gives mean discharge for each day of the water year. In the monthly summary for the table, the line headed "TOTAL" gives the sum of the daily figures for each month; the line headed "MEAN" gives the average flow in cubic feet per second for the month; and the lines headed "MAX" and "MIN" give the maximum and minimum daily mean discharges, respectively, for each month. Discharge for the month also is usually expressed in cubic feet per second per square mile (line headed "CFSM"); or in inches (line headed "IN.") or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches or in acre-feet may be omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversion data or reservoir contents are given. These figures are identified by a symbol and corresponding footnote.

Statistics of Monthly Mean Data

A tabular summary of the mean (line headed "MEAN"), maximum (line headed MAX), and minimum (line headed "MIN") of monthly mean flows for each month for a designated period is provided below the mean values table. The water years of the first occurrence of the maximum and minimum monthly flows are provided immediately below those figures. The designated period will be expressed as "FOR WATER YEARS ____-____, BY WATER YEAR (WY)," and will list the first and last water years of the range of years selected from the PERIOD OF RECORD paragraph in the station manuscript. It will consist of all of the station record within the specified water years, inclusive, including complete months of record for partial water years, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript.

Summary Statistics

A table titled "SUMMARY STATISTICS" follows the statistics of monthly mean data tabulation. This table consists of four columns with the first column containing the line headings of the statistics being reported. The table provides a statistical summary of yearly, daily, and instantaneous flows, not only for the current water year but also for the previous calendar year and for a designated period, as appropriate. The designated period selected, "WATER YEARS ____-____," will consist of all the station record within the specified water years, inclusive, including complete months of record for partial water year, if any, and may coincide with the period of record for the station. The water years for which the statistics are computed will be consecutive, unless a break in the station record is indicated in the manuscript. All of the calculations for the statistical characteristics designated ANNUAL (See line headings below.), except for the "ANNUAL 7-DAY MINIMUM" statistic, are calculated for the designated period using complete water years. The other statistical characteristics may be calculated using partial water years.

The date or water year, as appropriate, of the first occurrence of each statistic reporting extreme values of discharge is provided adjacent to the statistic. Repeated occurrences may be noted in the REMARKS paragraph of the manuscript or in footnotes. Because the designated period may not be the same as the station period of record published in the manuscript, occasionally the dates of occurrence listed for the daily and instantaneous extremes in the designated-period column may not be within the selected water years listed in the heading. When this occurs, it will be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data also

are given. Runoff data may be omitted if there is extensive regulation or diversion of flow in the drainage basin.

The following summary statistics data, as appropriate, are provided with each continuous record of discharge. Comments to follow clarify information presented under the various line headings of the summary statistics table.

ANNUAL TOTAL.--The sum of the daily mean values of discharge for the year. At some stations the annual total discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnote.

ANNUAL MEAN.--The arithmetic mean of the individual daily mean discharges for the year noted or for the designated period. At some stations the yearly mean discharge is adjusted for reservoir storage or diversion. The adjusted figures are identified by a symbol and corresponding footnotes.

HIGHEST ANNUAL MEAN.--The maximum annual mean discharge occurring for the designated period.

LOWEST ANNUAL MEAN.--The minimum annual mean discharge occurring for the designated period.

HIGHEST DAILY MEAN.--The maximum daily mean discharge for the year or for the designated period.

LOWEST DAILY MEAN.--The minimum daily mean discharge for the year or for the designated period.

ANNUAL 7-DAY MINIMUM.--The lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-fow frequency analysis of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

INSTANTANEOUS PEAK FLOW.--The maximum instantaneous discharge occurring for the water year or for the designated period. Note that secondary instantaneous peak discharges above a selected base discharge are stored in District computer files for stations meeting certain criteria. Those discharge values may be obtained by writing to the District Office. (See address on back of title page of this report.)

INSTANTANEOUS PEAK STAGE.--The maximum instantaneous stage occurring for the water year or for the designated period. If the dates of occurrence for the instantaneous peak flow and instantaneous peak stage differ, the REMARKS paragraph in the manuscript or a footnote may be used to provide further information.

INSTANTANEOUS LOW FLOW.--The minimum instantaneous discharge occurring for the water year or for the designated period.

ANNUAL RUNOFF.--Indicates the total quantity of water in runoff for a drainage area for the year. Data reports may use any of the following units of measurement in presenting annual runoff data:

Acre-foot (AC-FT)is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Cubic feet per second per square mile (CFSM) is the number of cubic feet of water flowing per second from each square mile area drained, assuming the runoff is distributed uniformly in time and area.

Inches(INCHES) indicates the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that is exceeded by 10 percent of the flow for the designated period.

50 PERCENT EXCEEDS.--The discharge that is exceeded by 50 percent of the flow for the designated period.

90 PERCENT EXCEEDS.--The discharge that is exceeded by 90 percent of the flow for the designated period.

Hydrograph

A hydrograph for the current year follows the table for most stations. Streamflow hydrographs are semi-log plot of mean daily values with no flow days showing as blanks. Lake hydrographs are retangular plot of 2400-hour readings.

Data collected at partial-record stations follow the information for continuous-record sites. The tables of partial-record stations are followed by a listing of discharge measurements made at sites other than continuous-record or partial-record stations. These measurements are generally made in times of drought or

flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called miscellaneous sites.

Identifying Estimated Discharge

Estimated daily-discharge values published in the water-discharge tables of annual State data reports are identified by flagging individual daily values with the letter symbol "e" and printing a table footnote, "e Estimated."

Accuracy of the Records

The accuracy of streamflow records depends primarily on: (1) The stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements; and (2) the accuracy of measurements of stage, measurements of discharge, and interpretation of records.

The accuracy attributed to the records is indicated under "REMARKS." "Excellent" means that about 95 percent of the daily discharges are within 5 percent of the true; "good," within 10 percent; and "fair," within 15 percent. Records that do not meet the criteria mentioned, are rated "poor." Different accuracies may be attributed to different parts of a given record.

Daily mean discharges in this report are given to the nearest hundredth of a cubic foot per second for values less than 1 ft^3/s; to the nearest tenth between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures for more than 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the discharge value. The same rounding rules apply to discharges listed for partial-record stations and miscellaneous sites.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff, in inches, are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other Records Available

The National Water Data Exchange (NAWDEX), U.S. Geological Survey, Reston, VA 22092, maintains an index of these sites as well as an index of records of discharge collected by other agencies but not published by the Geological Survey. Information on records at specific sites can be obtained from that office upon request.

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables are on file in the Oklahoma District office. Also, most of the daily mean discharges are in computer-readable form.

Records of Surface-Water Quality

Records of surface-water quality ordinarily are obtained at or near stream-gaging stations because interpretation of records of surface-water quality nearly always requires corresponding discharge data. Records of surface-water quality in this report may involve a variety of types of data and measurement frequencies.

Classification of Records

Water-quality data for surface-water sites are grouped into one of three classifications. A continuing-record station is a site where data are collected on a regularly scheduled basis. Frequency may be once or more times daily, weekly, monthly, or quarterly. A partial-record station is a site where limited water-quality data are collected systematically over a period of years. Frequency of sampling is usually less than quarterly. A miscellaneous sampling site is a location other than a continuing or partial-record station, where random samples are collected to give better areal coverage to define water-quality conditions in the river basin.

A careful distinction needs to be made between "continuing records" as used in this report and "continuous recordings," which refers to a continuous graph or a series of discrete values punched at short intervals on a paper tape. Some records of water quality, such as temperature and specific conductance, may be obtained through continuous recordings; however, because of costs, most data are obtained only monthly or less frequently. Locations of stations for which records on the quality of surface water appear in this report are shown in figure 20.

Arrangement of Records

Water-quality records collected at a surface-water daily record station are published immediately following that record, regardless of the frequency of

sample collection. Station number and name are the same for both records. Where a surface-water daily record station is not available or where the water quality differs significantly from that at the nearby surface-water station, the continuing water-quality record is published with its own station number and name in the regular downstream-order sequence. Water-quality data for partial-record stations and for miscellaneous sampling sites appear in separate tables following the table of discharge measurements at miscellaneous sites.

On-site Measurements and Sample Collection

In obtaining water-quality data, a major concern needs to be assuring that the data obtained represent the in situ quality of the water. To assure this, certain measurements, such as water temperature, pH, and dissolved oxygen, need to be made onsite when the samples are taken. To assure that measurements made in the laboratory also represent the in situ water, carefully prescribed procedures need to be followed in collecting the samples, in treating the samples to prevent changes in quality pending analysis, and in shipping the samples to the laboratory. Procedures for onsite measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed in this report. Also, detailed information on collecting, treating, and shipping samples may be obtained from the Geological Survey District Office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (see definitions) are obtained from at least several verticals. Whether samples are obtained from the centroid of flow or from several verticals, depends on flow conditions and other factors which must be evaluated by the collector.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the U.S. Geological Survey District Office whose address is given on the back of the title page of this report.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small diurnal temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

Suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow and in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of suspended-sediment discharge, records of the

periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

Sediment samples, samples for biochemical-oxygen (BOD), samples for indicator bacteria, and daily samples for specific conductance are analyzed locally. All other samples are analyzed in the Geological Survey laboratories in Arvada, Colo. Methods used in analyzing sediment samples and computing sediment records are given in TWRI, Book 5, Chap. C1. Methods used by the Geological Survey laboratories are given in TWRI, Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4.

In March 1989 the National Water-Quality Laboratory discovered a bias in the turbidimetic method for sulfate analysis, indicating that values below 75 mg/L have a median positive bias of 2 mg/L above the true value for the period between 1982 and 1989. Sulfate values in this report have not been corrected for this bias.

Data Presentation

For continuing-record stations, information pertinent to the history of station operation is provided in descriptive headings preceding the tabular data. These descriptive headings give details regarding location, drainage area, period of record, type of data available, instrumentation, general remarks, cooperation, and extremes for parameters currently measured daily. Tables of chemical, physical, biological, radiochemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of "daily values" of specific conductance, and water temperature then follow in sequence.

LOCATION.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

DRAINAGE AREA.--See Data Presentation under "Records of Stage and Water Discharge;" same comments apply.

PERIOD OF RECORD.--This indicates the periods for which there are published water-quality records for the station. The periods are shown separately for records of parameters measured daily or continuously and those measured less than daily. For those measured daily or continuously, periods of record are given for the parameters individually.

INSTRUMENTATION.--Information on instrumentation is given only if a water-quality monitor temperature record, sediment pumping sampler, or other sampling device is in operation at a station.

REMARKS.--Remarks provide added information pertinent to the collection, analysis, or computation of the records.

COOPERATION.--Records provided by a cooperating organization or obtained for the Geological Survey by a cooperating organization are identified here.

EXTREMES.--Maximums and minimums are given only for parameters measured daily or more frequently. None are given for parameters measured weekly or less frequently, because the true maximums or minimums may not have been sampled. Extremes, when given, are provided for both the period of record and for the current water year.

REVISIONS.--If errors in published water-quality records are discovered after publication, appropriate updates are made to the Water-Quality File in the U.S. Geological Survey's computerized data system, WATSTORE, and subsequently by monthly transfer of update transactions to the U.S. Environmental Protection Agency's STORET system. Because the usual volume of updates makes it impractical to document individual changes in the State data-report series or elsewhere, potential users of U.S. Geological Survey water-quality data are encouraged to obtain all required data from the appropriate computer file to ensure the most recent updates.

The surface-water-quality records for partial-record stations and miscellaneous sampling sites are published in separate tables following the table of discharge measurements at miscellaneous sites. No descriptive statements are given for these records. Each station is published with its own station number and name in the regular downstream-order sequence.

Remark Codes

The following remark codes may appear with the water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown

<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (nonideal colony count)
L	Biological organism count less than 0.5 percent (organisms may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant

Dissolved Trace-Element Concentrations

NOTE: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (µg/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's and 100's of nanograms per liter (ngL). Present data above the µg/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey will begin using new trace-element protocols in the near future.

Records of Ground-Water Levels

Only water-level data from a national network of osbervation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in Oklahoma are shown in figure 22.

Although, in this report, records of water levels are presented for fewer than 100 wells, records are obtained through cooperative efforts of many Federal, State, and local agencies for several hundred observation wells throughout Oklahoma and are placed in computer storage. Information about the availability of the data in the water-level file may be obtained from the District chief, Oklahoma District. (See address on back of front page.)

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability. Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the upper left corner of the table. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well.

Water-level records are obtained from direct measurements with a steel tape or punched tape of the water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in each well description.

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given to a tenth of a foot or a larger unit.

Data Presentation

Each well record consists of two parts, the station description and the data table of mean daily water levels observed during the water year. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees,

minutes, and seconds); the hydrologic-unit number; the distance and direction from a geographic point of reference.

AQUIFER.--This entry designates by name the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) sea level; it is reported with a precision depending on the method determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It is used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

An abbreviated table of mean daily water levels follows the station description for each well equipped with a digital recorder. For wells with no recorder, actual measurements are listed. Water levels are reported in feet below land-surface datum. A rectangular hydrograph of mean daily water levels for the last three years follows the table for recorder wells. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by blanks in place of the water level.

ACCESS TO WATSTORE DATA

The U.S. Geological Survey is the principal Federal water-data agency and, as such, collects and disseminates about 70 percent of the water data currently being used by numerous State, local, private, and other Federal agencies to develop and manage our water resources. As part of the Geological Survey's program of releasing water data to the public, a large-scale computerized system has been developed for the storage and retrieval of water data collected through its activities. The National WATer Data STOrage and REtrieval System (WATSTORE) was established in 1972 to provide an effective and efficient means for the processing and maintenance of water data collected through the activities of the U.S. Geological Survey and to facilitate release of the data to the public. A variety of useful products, ranging from data tables to complex statistical analyses such as Log Pearson Type III, can be produced using WATSTORE. The system resides on the central computer facilities of the U.S. Geological Survey at its National Center in Reston, Virginia, and consists of related files and data bases.

* Station Header File - contains descriptive information on more than 440,000 sites throughout the United States and its territories where the U.S. Geological Survey collects or has collected data.
* Daily Values File - Contains more than 220 million daily values of streamflows, stages, reservoir contents, water temperatures, specific conductances, sediment concentrations, sediment discharges, and ground-water levels.
* Peak Flow File - Contains approximately 500,000 maximum (peak) streamflow and gage-height values at surface-water sites.
* Water-Quality File - Contains approximately 2 million analyses of water samples that describe the chemical, physical, biological, and radio-chemical characteristics of of both surface and ground water.
* Ground-Water Site Inventory Data Base - Contains inventory data for more than 900,000 wells, springs, and other sources of ground water. The data include site location, geohydrologic characteristics, well-construction history, and one-time field measurements such as water temperature.

In 1976, the U.S. Geological Survey opened WATSTORE to the public for direct access. The signing of a Memorandum of Agreement with the Survey is required to obtain direct access to WATSTORE. The system can be accessed either synchronously or asynchronously. The requestor will be

expected to pay all computer costs he/she incurs. Direct access may be obtained by contacting:

U.S. Geological Survey
National Water Data Exchange
421 USGS National Center
Reston, Virginia 22092

In addition to providing direct access to WATSTORE, data can be provided in various machine-readable formats on magnetic tape or 5-1/4 inch floppy disc; and as noted in the introduction, on CD-ROM discs. Beginning with the 1990 water year, all water-data reports also will be available on Compact Disc - Read Only Memory (CD-ROM). All data reports published for the current water year for the entire Nation, including Puerto Rico and the Trust Territories, will be reproduced on a single CD-ROM disc. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division's District offices. (See address on the back of the title page.) A limited number of CD-ROM discs will be available for sale by the Books and Open-File Reports Section, U.S Geological Survey, Federal Center, Box 25425, Denver, Colorado 80225.

DEFINITIONS OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equal to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Algae are mostly aquatic single-celled, colonial, or multicelled plants, containing chlorphyll and lacking roots, stems, and leaves.

Aquifer is a geologic formation, group of formations or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Aroclor is the registered trade mark for a group of polychlorinated biphenyls which were manufactured by the Monsanto Company prior to 1976. Aroclors are assigned specific four-digit reference numbers dependent upon molecular type and degree of substitution of the biphenyl ring hydrogen atoms by chlorine atoms. The first two digits of a numbered aroclor represent the molecular type and the last two digits represent the weight percent of the hydrogen substituted chlorine.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35°C + 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on KF-streptococcus medium

(nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area of volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 105°C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and the ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloro-platinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream.

Cubic foot per second (ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Cubic feet per second per square mile [$(ft^3/s)/mi^2$] or CFSM is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment) that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to that material in a representative water sample which passes through a 0.45 m membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported

in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate ($CaCO_3$).

HWM is a high-water mark or flood mark.

Hydrologic Benchmark Network is a network of 57 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by the activities of man.

Hydrologic unit is a geographic area representing part of all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number.

Land-surface datum (lsd) is a datum plane that is approximately at land surface at each ground-water observation well.

Measuring point (MP) is an arbitrary permanent reference point from which the distance to the water surface in a well is measured to obtain the water level.

Micrograms per gram (µg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentrations of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

National Stream Quality Accounting Network (NASQAN) is a nationwide data-collection network designed by the U.S. Geological Survey to meet many of the information needs of government agencies and other groups involved in natural or regional water-quality planning and management. The 500 or so sites in NASQAN are generally located at the downstream ends of hydrologic accounting units designated by the U.S. Geological Survey Office of Water Data Coordination in consultation with the Water Resources Council. The objectives of NASQAN are (1) to obtain information on the quality and quantity of water moving within and from the United States through a systematic and uniform process of data collection, summarization, analysis, and reporting such that the data may be used for, (2) description of the areal variability of water quality in the Nation's rivers through analysis of data from this and other programs, (3) detection of changes or trends with time in the pattern of occurrence of water-quality characteristics, and (4) providing a nationally consistent data base useful for water-quality assessment and hydrologic research.

The National Trends Network (NTN) is a 150-station network for sampling atmo-

spheric deposition in the United States. The purpose of the network is to determine the variability, both in location and in time, of the composition of atmospheric deposition, which includes snow, rain, dust particles, aerosols, and gases. The core from which the NTN was built was the already-existing deposition-monitoring network of the National Atmospheric Deposition Program (NADP).

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per unit area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, WATSTORE, to uniquely identify a specific constituent. The codes used in WATSTORE are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay.....	0.00024 - 0.004	Sedimentation
Silt.....	.004 - .062	Sedimentation
Sand.....	.062 - 2.0	Sedimentation or sieve
Gravel....	2.0 - 64.0	Sieve

The particle-site distribution given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (PC, pCi) is one trillionth (10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly know as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nui-

sance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen release (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m^3.time)] for periphyton and macrophytes and [mg C/(m^3.time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg O/(m^3.time)] for periphyton and macrophytes and [mg O/m^3.time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures are likely to produce different analytical results.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sea Level) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "National Geodetic Vertical Datum of 1929 (NGVD of 1929," "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf or Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is

transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft^3/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total-sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total-sediment discharge.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and the volume of water, per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton.

Surface area of a lake is that area outlined on the latest U.S. Geological Survey topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchial scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata, is the following:

Kingdom	Animal
Phylum	Arthropoda
Class	Insecta
Order	Ephemeroptera
Family	Ephemeridae
Genus	Hexagenia
Species	hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through

a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses, because different digestion procedures are likely to produce different analytical results.

Water year in Geological Survey reports dealing with surface-water supply is the 12-month period, Oct. 1 through Sept. 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending Sept. 30, 1986, is called the "1986 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Books and Open-File Reports Section, Federal Center, Box 25425, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficken, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations, by A. A. R. Zohdy*, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F. P. Haeni: USGS--TWRI Book 2, Chapter D2. 1988. 86 pages.

2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L.M. McCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

2-E2. *Borehole geophysics applied to ground-water investigations*, by W. S. Keys: USGS--TWRI Book 2, Chapter E2. 1990. 150 pages.

2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W. E. Teasdale: USGS--TWRI Book 2, Chapter F1. 1989. 97 pages.

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods,* by H. F. Matthai: USGS-TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods,* by Harry Hulsing: USGS--TWRI Book 3. Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams,* by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations,* by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A9. *Measurement of time of travel in streams by dye tracing,* by F. A. Kilpatrick and J. F. Wilson, Jr.: USGS--TWRI Book 3, Chapter A9. 1989. 27 pages.

3-A10. *Discharge ratings at gaging stations,* by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. *Measurement of discharge by moving-boat method,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-A12. *Fluorometric procedures for dye tracing,* by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS- - TWRI Book 3, Chapter A12. 1986. 41 pages.

3-A13. *Computation of continuous records of streamflow,* by E. J. Kennedy: USGS--TWRI Book 3, Chapter A13. 1983. 53 pages.

3-A14. *Use of flumes in measuring discharge,* by F. A. Kilpatrick and V. R. Schneider: USGS--TWRI Book 3, Chapter A14. 1983. 46 pages.

3-A15. *Computation of water-surface profiles in open channels,* by Jacob Davidian: USGS--TWRI Book 3, Chapter A15. 1984. 48 pages.

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3-A17. *Acoustic velocity meter systems,* by Antonius Laenen: USGS--TWRI Book 3, Chapter A17. 1985. 38 pages.

3-A18. *Determination of stream reaeration coefficients by use of tracers,* by F. A. Kilpatrick, R. E. Rathburn, Nobuhiro Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.

3-A19. *Levels of streamflow gaging stations,* by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 27 pages.

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3-B2. *Introduction to ground-water hydraulics, a programmed text for self-instruction,* by G. D. Bennett: USGS- - TWRI Book 3, Chapter B2. 1976. 172 pages.

3-B3. *Type curves for selected problems of flow to wells in confined aquifers,* by J. E. Reed: USGS--TWRI Book 3, Chapter B3. 1980. 106 pages.

3-B4. *Regression modeling of ground-water flow,* by R. L. Cooley and R. L. Naff: USGS--TWRI Book 3, Chapter B4. 1990. 232 pages.

3-B4. *Supplement 1. Regression modeling of ground-water flow - Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems,* by R. L. Cooley. USGS--TWRI Book 3, Chapter B4. 1993. 8 pages.

3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction,* by O. L. Franke, T. E. Reilly, and G. D. Bennett: USGS-- TWRI Book 3, Chapter B5. 1987. 15 pages.

3-B6. *The principle of superposition and its application in ground-water hydraulics,* by T. E. Reilly, O. L. Franke, and G. D. Bennett: USGS--TWRI Book 3, Chapter B6. 1987. 28 pages.

3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow,* by E. J. Wexler: USGS- -TWRI Book 3, Chapter B7. 1992. 90 pages.

3-C1. *Fluvial sediment concepts,* by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment,* by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. Computation of fluvial-sediment discharge, by George Porterfield: USGS- -TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves,* by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply,* by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics,* by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells,* by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments,* by M.J. Fishman and L. C. Friedman: USGS--TWRI Book 5, Chapter A1. 1989. 545 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy,* by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

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5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples,* by L. J. Britton and P. E. Greeson, editors: USGS--TWRI Book 5, Chapter A4. 1989. 363 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments,* by L.L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments,* by L. C. Friedman and D. E. Erdmann: USGS--TWRI Book 5, Chapter A6. 1982. 181 pages.

5-C1. *Laboratory theory and methods for sediment analysis,* by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

6-A1. *A modular three-dimensional finite-difference ground-water flow model,* by M. G. McDonald and A. W. Harbaugh: USGS--TWRI Book 6, Chapter A1. 1988. 586 pages.

6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model,* by S. A. Leake and D. E. Prudic: USGS--TWRI Book 6, Chapter A2. 1991. 68 pages.

6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual,* by L. J. Torak: USGS--TWRI Book 6, Chapter A3. 1993. 136 pages

6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions,* by R. L. Cooley: USGS--TWRI Book 6, Chapter A4. 1992. 108 pages.

6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water- problems, Part 3: Design philosophy and programming details,* by L. J. Torak. USGS--TWRI Book 6, Chapter A5, 1993. 243 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments,* by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water,* by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

7-C3. *A model for simulation of flow in singular and interconnected channels,* by R. W. Schaffrannek, R. A. Baltzer, and D. E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1981. 110 pages.

8-A1. *Methods of measuring water levels in deep wells,* by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-A2. *Installation and service manual for U.S. Geological Survey manometers,* by J. D. Craig: USGS--TWRI Book 8, Chapter A2. 1983. 57 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters,* by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.

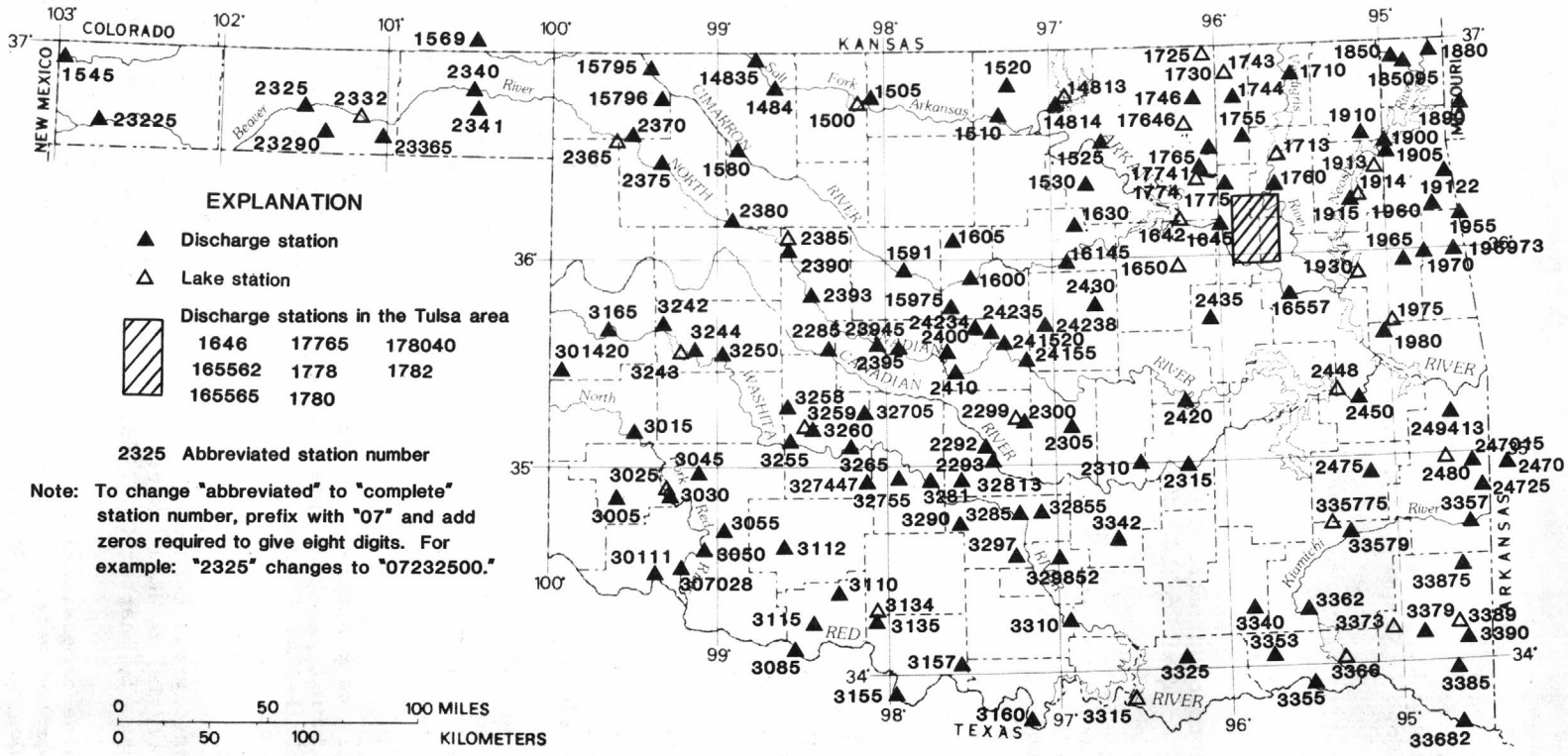


Figure 19.--Locations of continuous-record surface-water stations, water year 1993.

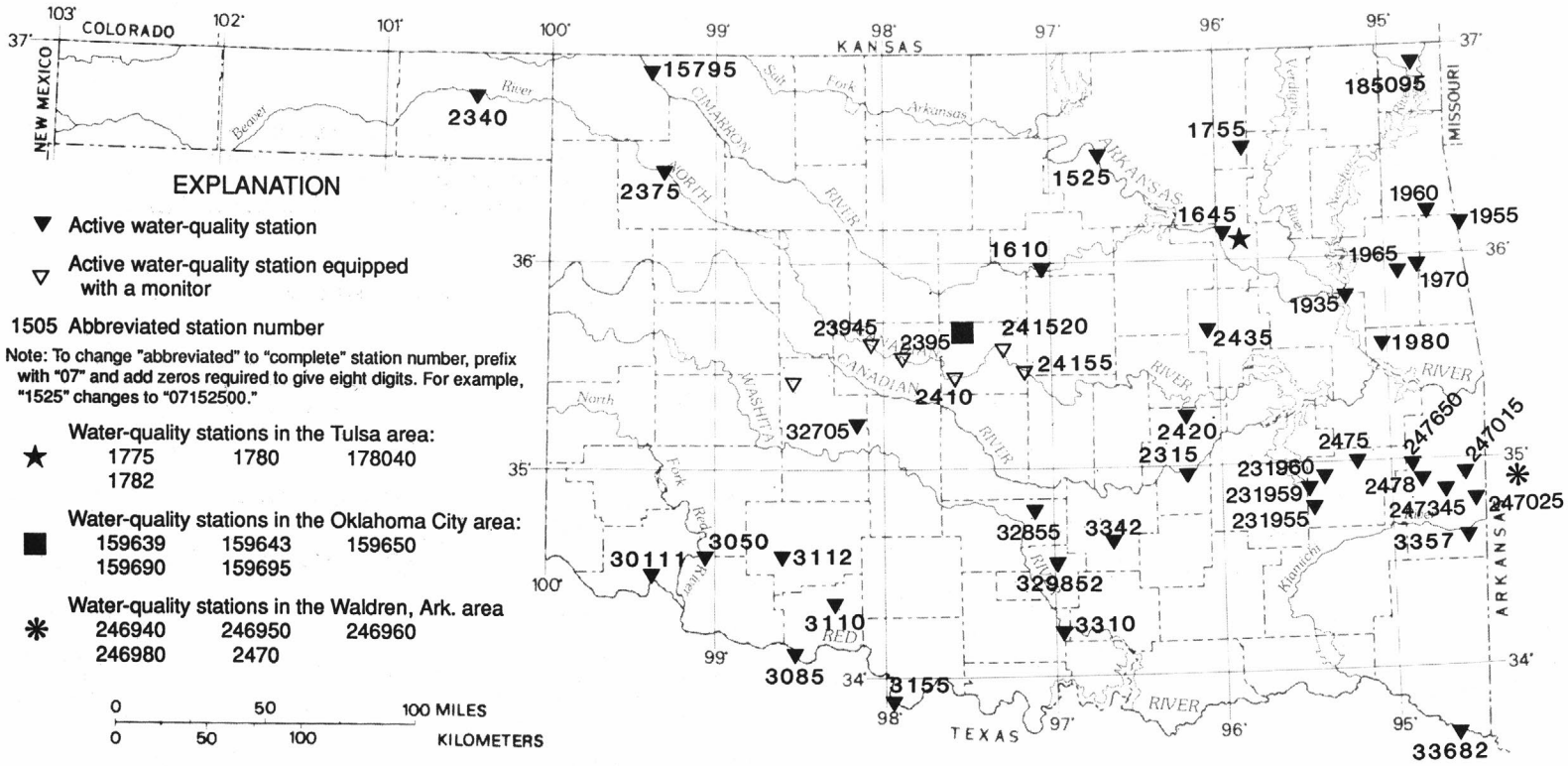


Figure 20.--Locations of water-quality stations, water year 1993.

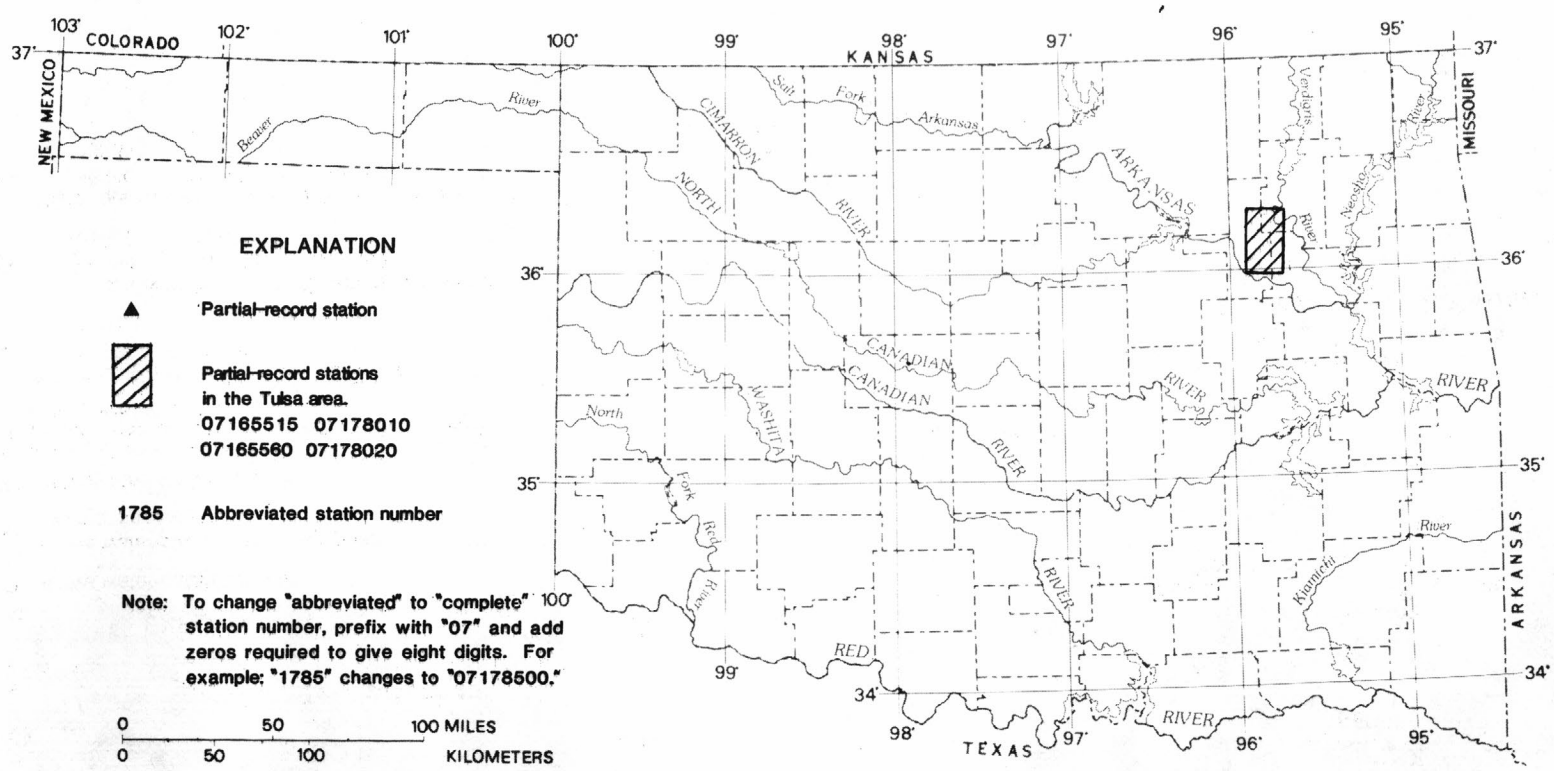


Figure 21.—Locations of partial-record stations, water year 1993.

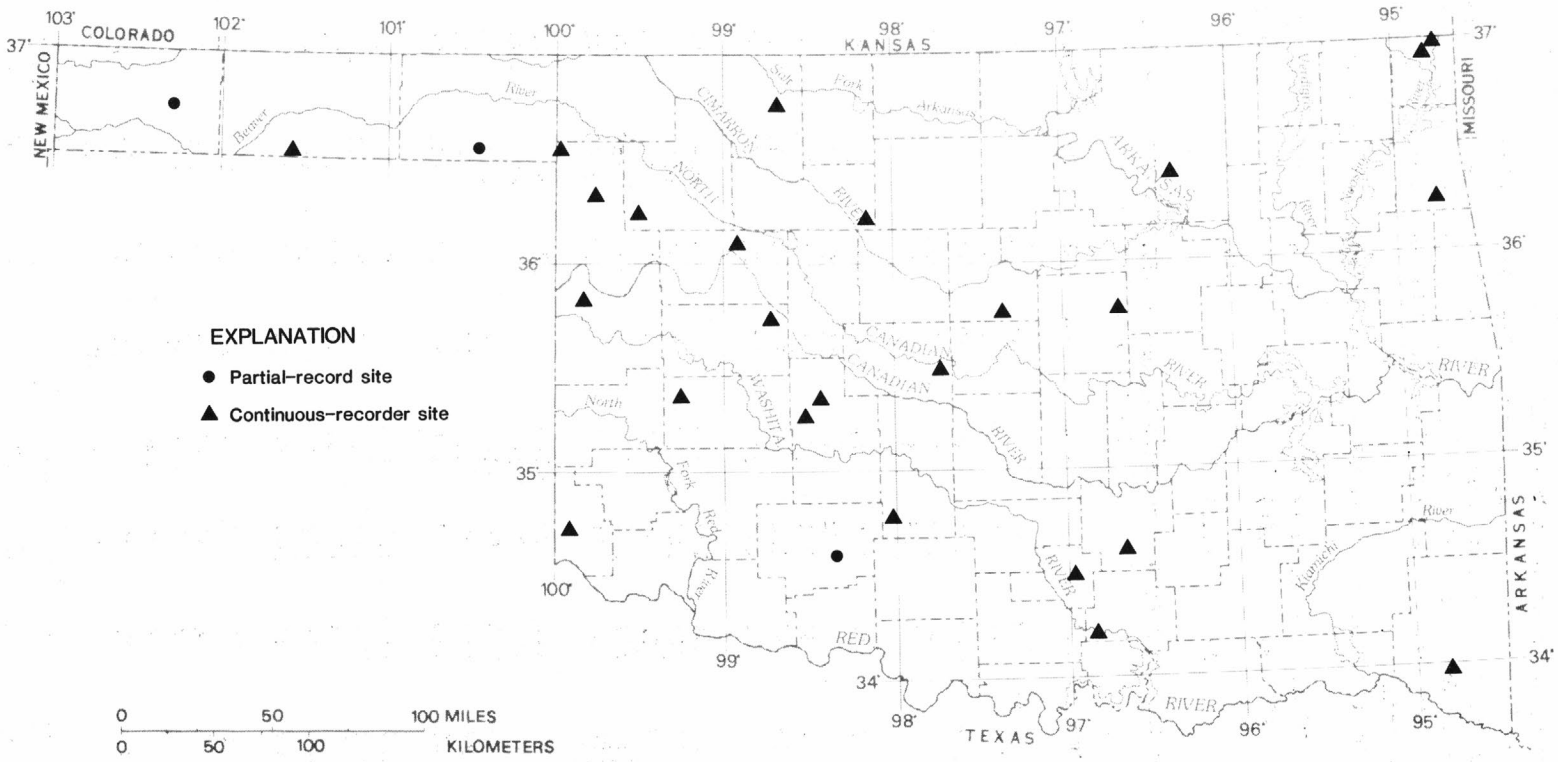


Figure 22.--Locations of network ground-water wells, water year 1993.

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.--Records fair.

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)
Apr. 28	2330	11,700	11.61	July 7	1700	17,300	13.53
May 9	0400	11,500	11.52				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	9.5	64	82	82	92	119	95	94	70	30	47
2	1.1	9.8	60	97	86	108	91	425	84	185	29	43
3	1.2	11	57	134	89	132	83	477	77	131	106	56
4	1.1	11	55	167	90	118	159	366	75	105	87	33
5	1.1	11	58	138	90	101	94	239	70	89	67	27
6	1.1	11	60	110	88	91	73	191	68	77	52	23
7	1.1	11	66	102	87	89	68	169	65	8710	46	23
8	.98	12	69	101	85	86	72	2500	63	1640	45	26
9	1.0	13	93	123	82	84	62	3210	58	419	40	25
10	1.2	13	92	126	112	84	56	e350	56	143	35	23
11	1.2	25	86	132	110	83	52	e240	55	99	31	22
12	1.2	23	81	105	105	78	50	e190	53	77	26	20
13	1.3	17	82	99	99	79	47	e170	51	66	23	23
14	1.2	16	101	101	101	81	129	e150	48	508	20	23
15	1.4	16	103	111	152	83	132	e140	45	679	15	22
16	1.6	16	109	99	166	85	125	e250	43	293	14	19
17	1.8	16	103	100	169	84	119	e200	40	136	16	18
18	2.1	19	109	90	167	82	94	e170	39	86	16	17
19	2.6	39	119	100	146	89	78	148	60	69	13	18
20	3.2	38	119	112	126	84	66	137	94	58	12	16
21	4.1	139	114	115	120	84	61	122	123	57	11	20
22	4.8	188	107	112	116	100	55	111	118	59	8.7	19
23	5.4	180	88	131	94	92	50	116	96	55	7.5	15
24	5.9	201	86	119	84	98	49	415	83	50	7.8	14
25	6.6	185	81	104	84	94	47	302	76	40	8.4	14
26	7.0	108	75	96	83	83	45	190	73	37	8.0	14
27	7.8	82	74	87	83	76	42	140	74	32	7.0	14
28	8.1	76	74	87	86	72	769	122	80	30	6.5	13
29	8.2	73	74	93	---	77	1300	112	71	31	6.3	12
30	8.7	68	77	93	---	111	203	104	67	40	8.3	12
31	9.3	---	76	85	---	105	---	103	---	39	29	---
TOTAL	104.58	1637.3	2612	3351	2982	2805	4390	11654	2099	14110	831.5	671
MEAN	3.37	54.6	84.3	108	106	90.5	146	376	70.0	455	26.8	22.4
MAX	9.3	201	119	167	169	132	1300	3210	123	8710	106	56
MIN	.98	9.5	55	82	82	72	42	95	39	30	6.3	12
AC-FT	207	3250	5180	6650	5910	5560	8710	23120	4160	27990	1650	1330

e Estimated

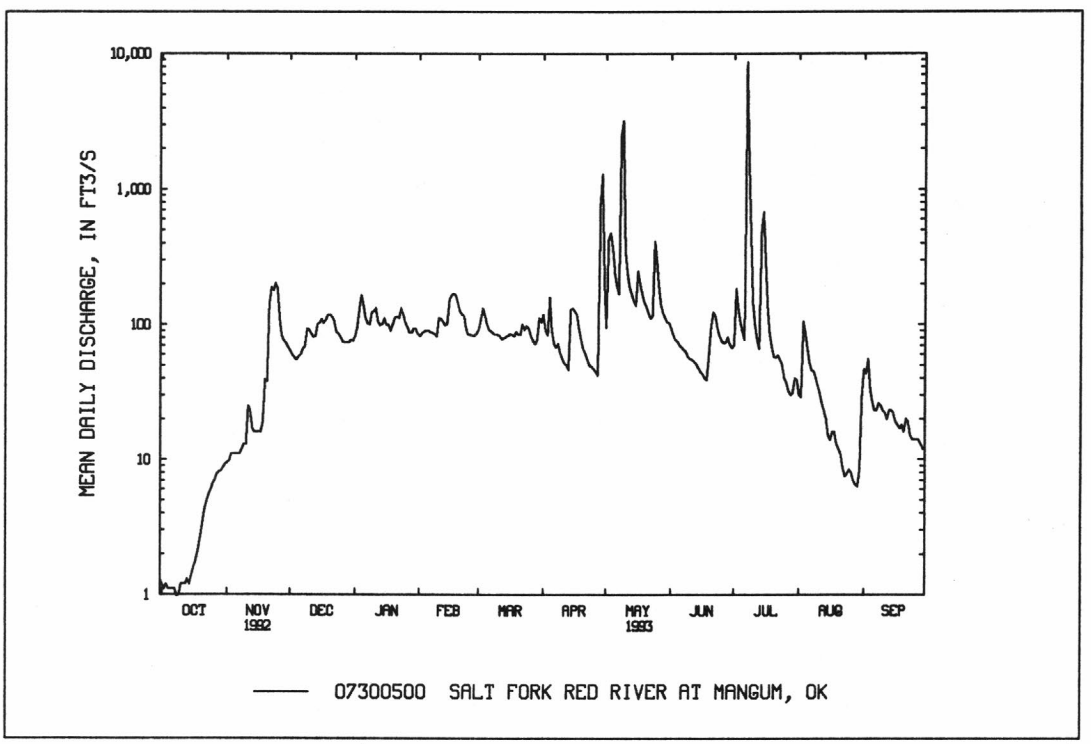
07300500 SALT FORK RED RIVER AT MANGUM, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	80.4	28.2	35.4	45.6	51.9	48.3	86.4	277	238	64.1	31.8	45.2
MAX	919	196	148	199	196	183	490	1389	1602	575	301	315
(WY)	1961	1987	1992	1960	1949	1969	1973	1957	1941	1953	1968	1986
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

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1938-93	
ANNUAL TOTAL	33181.28		47247.38			
ANNUAL MEAN	90.7		129		86.1	
HIGHEST ANNUAL MEAN					277	1941
LOWEST ANNUAL MEAN					12.3	1940
HIGHEST DAILY MEAN	2530	Jun 6	8710	Jul 7	22600	May 28 1978
LOWEST DAILY MEAN	.98	Oct 8	.98	Oct 8	[a].00	Oct 2 1937
ANNUAL SEVEN-DAY MINIMUM	1.1	Oct 3	1.1	Oct 3	.00	Aug 14 1938
INSTANTANEOUS PEAK FLOW			17300	Jul 7	72000	May 16 1957
INSTANTANEOUS PEAK STAGE			13.53	Jul 7	14.70	Jun 16 1938
ANNUAL RUNOFF (AC-FT)	65820		93720		62350	
10 PERCENT EXCEEDS	171		162		120	
50 PERCENT EXCEEDS	63		77		16	
90 PERCENT EXCEEDS	3.6		8.4		.00	

[a]No flow at times in most years.



07301110 SALT FORK RED RIVER NEAR ELMER, OK

LOCATION.--Lat 34°28'44", long 99°22'55", in NW 1/4 NE 1/4 sec.15, T.1 S., R.21 W., Jackson County, Hydrologic Unit 11120202, on right bank at bridge on State Highway 5, 1.7 mi west of Elmer, and at mile 3.5.
DRAINAGE AREA.--1,878 mi^2, of which 209 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1979 to current year.
GAGE.--Water-stage recorder. Datum of gage is 1,258.55 ft above sea level.
REMARKS.--Records fair. Low flows sustained at times by cotton irrigation.
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)
May 10	1030	16,700	11.95				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	40	29	180	153	166	219	202	1050	e118	e182	257	412
2	38	31	152	169	164	292	195	2110	e111	e280	284	262
3	35	32	140	299	161	350	165	1780	e111	e380	1170	e380
4	31	33	134	739	161	328	144	1040	e105	e250	1200	e210
5	32	35	131	640	159	317	473	634	e103	e215	824	e185
6	32	36	127	448	152	237	317	374	e105	e200	346	e175
7	32	37	127	348	146	200	200	244	e100	e2010	266	e165
8	29	42	135	304	146	181	156	2100	e99	e3580	230	e168
9	30	44	614	299	146	168	141	9240	e102	2200	205	e170
10	32	48	710	474	273	153	126	13700	101	e770	171	e180
11	33	53	405	423	461	136	111	3640	106	e519	194	190
12	34	71	300	351	389	124	99	1450	101	e450	190	161
13	31	125	399	310	306	110	93	968	89	e545	216	178
14	30	102	1550	282	273	104	281	652	e88	e761	255	151
15	30	81	1300	275	895	109	1440	465	e92	e1630	281	156
16	28	76	657	301	1420	114	1600	351	e91	e1050	274	110
17	28	76	411	296	803	117	561	303	e92	e572	279	93
18	29	75	338	284	466	114	373	1090	e93	e399	302	86
19	29	119	319	283	276	125	254	677	e150	340	266	e86
20	30	195	316	475	288	147	172	307	e201	304	216	e80
21	32	683	304	915	347	159	130	227	e350	287	e205	e70
22	30	2690	293	770	271	168	120	175	e320	277	e148	e64
23	28	2620	276	472	254	253	110	467	e270	297	e130	e59
24	27	862	248	385	199	254	100	970	e225	326	e110	e53
25	26	1930	223	314	177	191	90	850	e192	317	e102	e48
26	26	1480	203	263	165	178	83	638	e181	297	e91	e45
27	25	589	189	226	161	152	78	380	e200	290	e83	e44
28	25	366	174	196	161	139	294	e183	e180	280	e130	e39
29	25	279	169	190	---	161	3210	e138	e179	292	217	e37
30	25	221	171	177	---	587	2400	e129	e180	298	e350	e34
31	28	---	156	171	---	282	---	e120	---	260	623	---
TOTAL	930	13060	10851	11232	8986	6169	13718	46452	4435	19858	9615	4091
MEAN	30.0	435	350	362	321	199	457	1498	148	641	310	136
MAX	40	2690	1550	915	1420	587	3210	13700	350	3580	1200	412
MIN	25	29	127	153	146	104	78	120	88	182	83	34
AC-FT	1840	25900	21520	22280	17820	12240	27210	92140	8800	39390	19070	8110

e Estimated

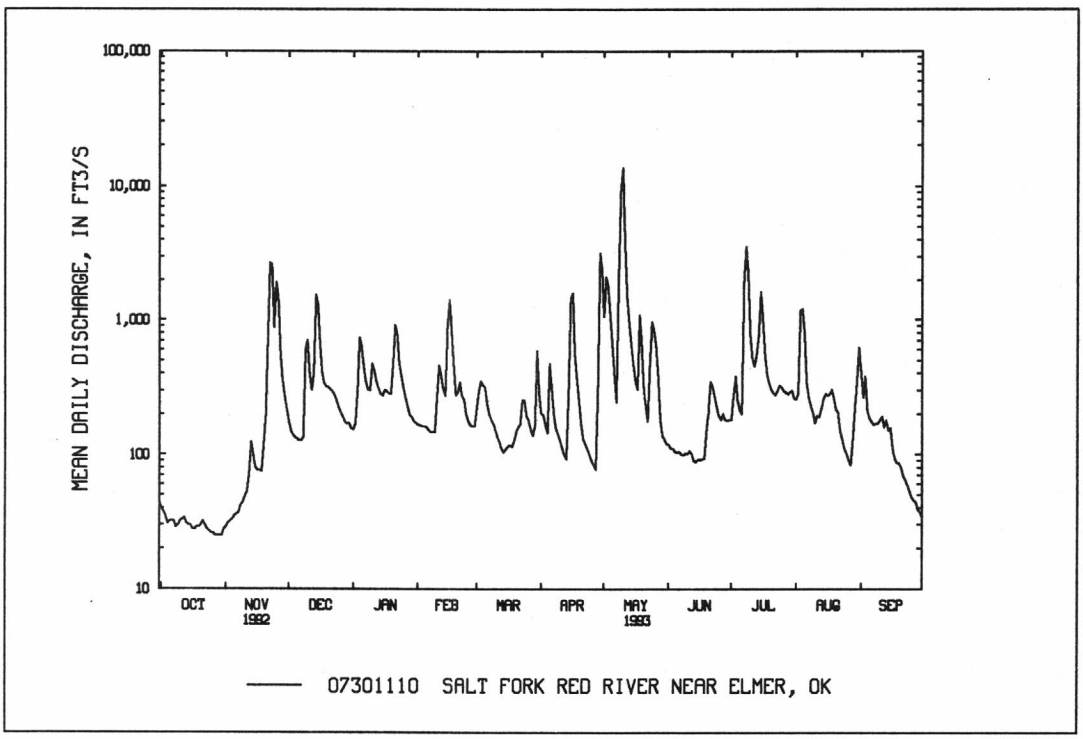
07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	311	140	140	134	139	165	199	670	661	156	144	164
MAX	1828	680	701	362	520	423	457	2566	2391	641	413	950
(WY)	1987	1987	1992	1993	1987	1988	1993	1980	1991	1993	1990	1986
MIN	3.79	4.72	16.5	13.3	13.7	21.1	13.9	7.51	117	9.25	4.19	7.90
(WY)	1985	1985	1983	1981	1981	1982	1982	1984	1988	1981	1981	1981

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1980-93	
ANNUAL TOTAL	114683		149397			
ANNUAL MEAN	313		409		252	
HIGHEST ANNUAL MEAN					591	1987
LOWEST ANNUAL MEAN					71.2	1983
HIGHEST DAILY MEAN	4690	Jun 6	13700	May 10	21100	Oct 20 1983
LOWEST DAILY MEAN	25	Oct 27	25	Oct 27-30	.08	Sep 4 1981
ANNUAL SEVEN-DAY MINIMUM	26	Oct 24	26	Oct 24	.12	Aug 30 1981
INSTANTANEOUS PEAK FLOW			16700	May 10	44900	Oct 20 1983
INSTANTANEOUS PEAK STAGE			11.95	May 10	[a]16.06	May 29 1987
ANNUAL RUNOFF (AC-FT)	227500		296300		182900	
10 PERCENT EXCEEDS	639		783		442	
50 PERCENT EXCEEDS	151		194		76	
90 PERCENT EXCEEDS	38		37		10	

[a]From high water mark.



07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--October 1978 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1978 to January 1982.
WATER TEMPERATURE: October 1978 to January 1982.
REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, alkalinity, and dissolved oxygen were determined in the field.

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
JUN										
02...	1103	5.00	23.5	722	1028	1028	1.80	4190	9.2	8.2
02...	1106	10.0	23.5	722	1028	1028	1.80	4200	9.2	8.3
02...	1109	20.0	23.5	722	1028	1028	1.80	4200	9.3	8.2
02...	1112	30.0	23.5	722	1028	1028	1.80	4200	9.3	8.3
02...	1115	40.0	23.5	722	1028	1028	1.80	4190	9.4	8.3
02...	1118	50.0	23.5	722	1028	1028	1.80	4190	9.4	8.3
02...	1121	60.0	23.5	722	1028	1028	1.80	4190	9.4	8.3
02...	1124	70.0	23.5	722	1028	1028	1.80	4190	9.4	8.2
02...	1127	80.0	23.5	722	1028	1028	1.80	4180	9.4	8.2
02...	1130	90.0	23.5	722	1028	1028	1.80	4160	9.4	8.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT												
06...	1430	1028	80020	34	5220	8.2	26.5	20.0	6.0	740	9.0	104
FEB												
02...	1745	1028	80020	164	4510	8.0	15.5	12.0	17	731	11.2	110
MAR												
31...	1045	1028	80020	282	3840	8.2	17.5	14.5	67	730	10.6	110
JUN												
02...	0940	1028	80020	110	4150	8.1	27.0	21.5	35	722	8.8	107
JUL												
26...	1630	1028	80020	284	3240	8.3	40.0	33.0	27	723	9.7	144

07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)
OCT												
06...	32	41	1800	1600	440	170	510	38	5	1.3	212	0
FEB												
02...	K9	50	1700	1500	440	150	400	34	4	6.3	262	0
MAR												
31...	550	140	1500	1400	400	130	330	32	4	6.4	183	0
JUN												
02...	120	65	1700	1600	450	150	390	33	4	7.7	222	0
JUL												
26...	130	85	1400	1200	360	110	250	29	3	6.7	138	0

DATE	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)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS NO3) (71851)
OCT												
06...	174	1600	860	0.50	7.2	3940	3710	5.36	362	2.54	2.54	11
FEB												
02...	215	1400	620	0.50	11	3430	3170	4.66	1520	2.67	2.67	12
MAR												
31...	150	1300	470	0.50	9.9	3030	2740	4.12	2310	1.38	1.38	6.1
JUN												
02...	182	1500	570	0.70	14	3510	3200	4.77	1040	1.27	1.27	5.6
JUL												
26...	113	1300	310	0.60	14	2640	2430	3.59	2020	0.500	--	--

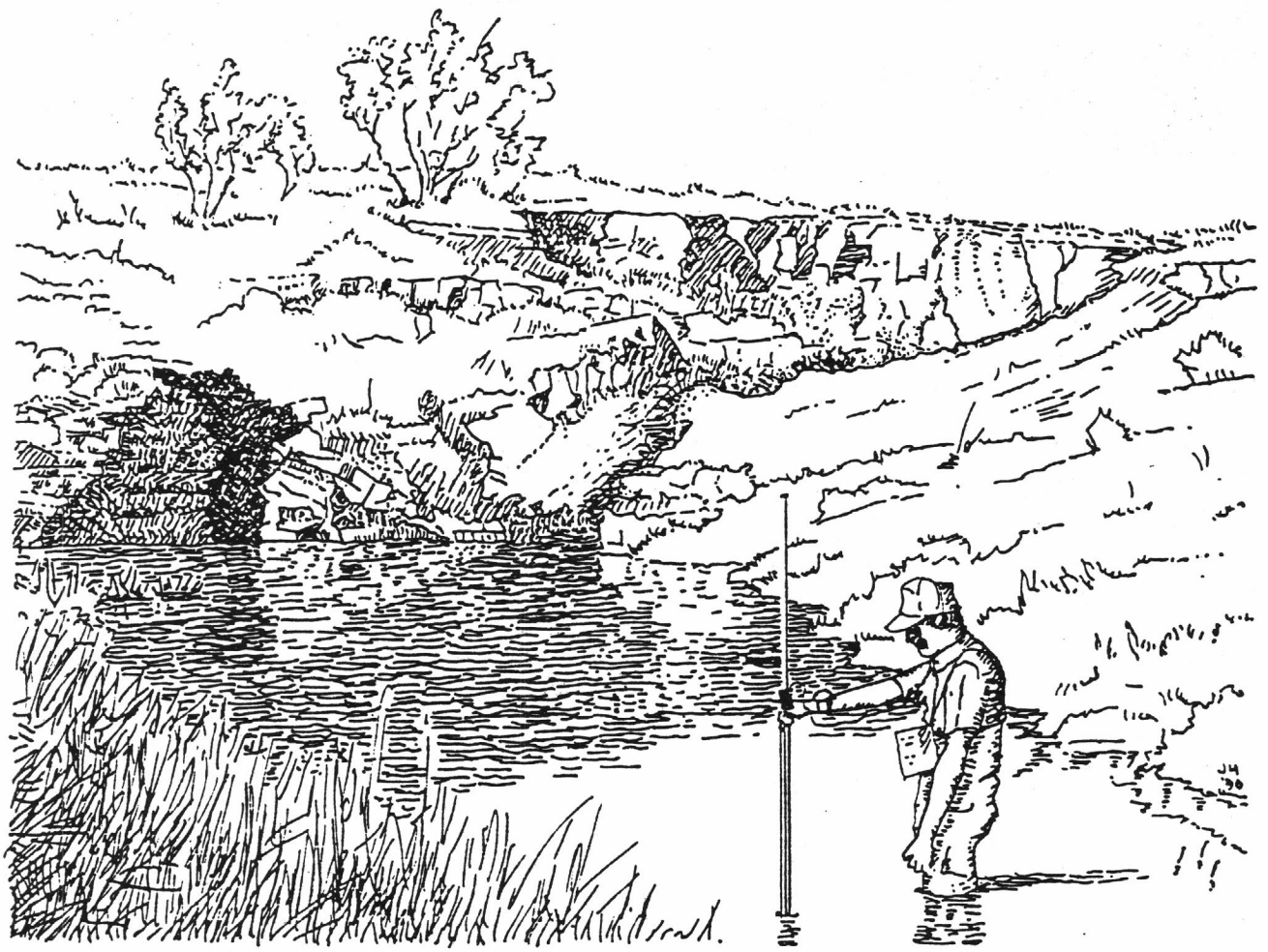
DATE	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS NO2) (71856)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)
OCT												
06...	0.060	0.060	0.20	2.60	2.60	0.050	0.040	0.06	0.05	0.65	0.70	3.3
FEB												
02...	--	0.030	0.10	--	2.70	--	0.040	--	0.05	0.26	0.30	3.0
MAR												
31...	--	0.020	0.07	--	1.40	--	0.060	--	0.08	0.74	0.80	2.2
JUN												
02...	--	0.030	0.10	--	1.30	--	0.050	--	0.06	0.45	0.50	1.8
JUL												
26...	--	<0.010	--	--	0.500	--	0.060	--	0.08	0.94	1.0	1.5

07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS ORGANIC TOTAL (MG/L AS P) (00670)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT												
06...	15	0.030	0.03	<0.010	0.010	<0.010	--	0.02	10	69	<9	26
FEB												
02...	--	0.040	--	0.020	--	0.010	0.03	--	<10	<100	<1	<10
MAR												
31...	--	0.130	--	<0.010	--	0.020	0.06	--	--	--	--	--
JUN												
02...	--	0.040	--	0.030	--	<0.010	--	--	<10	<100	<1	<10
JUL												
26...	--	0.110	--	<0.010	--	<0.010	--	--	20	100	<1	20

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
06...	140	49	<30	<1	12	<1.0	6000	<18	1000	92	100
FEB											
02...	100	30	4	2	9	<1.0	5100	22	92	41	77
MAR											
31...	--	--	--	--	--	--	--	--	869	662	97
JUN											
02...	110	40	3	1	6	<1.0	5000	28	1120	333	77
JUL											
26...	70	10	3	1	5	<1.0	4200	20	502	385	86



Measuring runoff into a sinkhole in the Blaine aquifer

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, except for ice effected winter periods, which are poor. U.S. Bureau of Reclamations' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.24	4.4	18	20	24	31	36	41	18	19	1.3	.57
2	.25	5.4	18	21	24	39	32	62	17	14	1.4	.49
3	.26	5.6	18	24	24	45	30	107	16	12	38	.34
4	.23	6.2	17	28	23	37	33	79	16	11	11	.25
5	.24	6.4	16	25	23	32	37	59	15	9.6	e8.3	.16
6	.30	6.4	19	23	23	30	35	50	15	8.7	e7.0	.12
7	.30	7.2	19	23	23	29	34	43	15	11	e6.0	.34
8	.25	7.3	21	23	23	28	33	48	14	11	e5.2	1.7
9	.29	7.0	21	25	23	27	30	55	13	9.5	e4.7	2.3
10	.45	6.8	22	e21	27	26	29	51	13	8.5	4.0	1.9
11	.67	7.6	20	e25	32	25	27	44	15	7.7	2.9	1.3
12	.84	7.7	19	26	29	24	26	41	14	8.2	2.0	1.1
13	.89	8.0	20	e23	31	25	25	39	13	7.7	1.5	.86
14	.89	8.5	23	e27	33	25	29	35	12	7.9	1.2	.73
15	.97	8.4	22	27	36	26	42	32	12	9.0	.99	.75
16	1.0	8.4	24	25	e35	25	39	29	12	9.1	.77	.71
17	1.1	8.5	23	26	e27	24	33	31	11	8.3	.59	.65
18	1.2	9.1	23	26	e31	24	30	72	10	7.0	.48	.59
19	1.6	11	23	25	e35	34	28	64	20	6.1	.40	1.2
20	2.0	13	23	26	44	49	26	46	39	5.7	.31	.68
21	2.2	14	22	27	51	41	24	38	33	5.7	.26	.64
22	2.3	18	21	32	40	46	24	34	24	6.0	.20	.57
23	2.3	19	21	32	33	62	24	34	20	5.5	.21	.46
24	2.4	18	20	29	30	51	23	31	17	5.0	.25	.54
25	2.5	e17	20	27	30	43	23	28	15	4.0	.19	.69
26	2.5	e16	20	26	28	37	22	26	18	3.3	.17	.63
27	2.6	e15	20	26	28	34	22	24	16	2.8	.13	.71
28	3.1	e17	20	25	29	32	22	23	15	2.3	.12	.85
29	3.5	e19	20	24	---	31	31	21	13	2.2	.11	.69
30	4.0	18	20	24	---	40	48	20	12	2.0	.08	.52
31	4.4	---	20	24	---	43	---	19	---	1.7	.33	---
TOTAL	45.77	323.9	633	785	839	1065	897	1326	493	231.5	100.09	23.04
MEAN	1.48	10.8	20.4	25.3	30.0	34.4	29.9	42.8	16.4	7.47	3.23	.77
MAX	4.4	19	24	32	51	62	48	107	39	19	38	2.3
MIN	.23	4.4	16	20	23	24	22	19	10	1.7	.08	.12
AC-FT	91	642	1260	1560	1660	2110	1780	2630	978	459	199	46

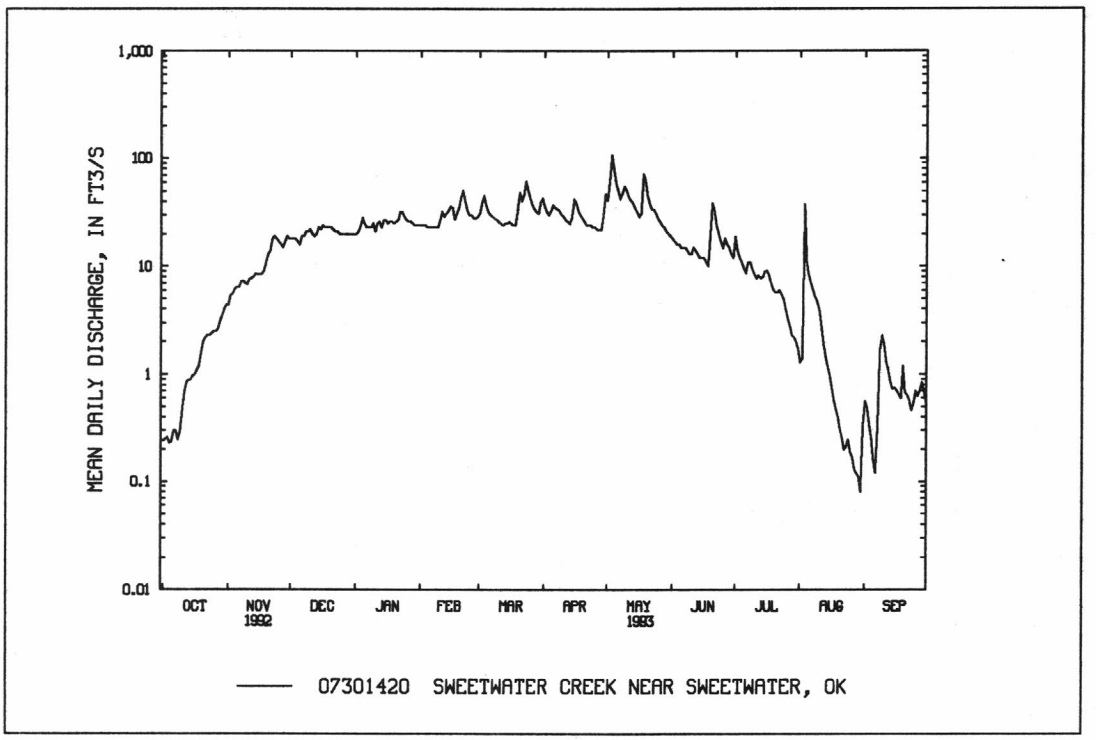
e Estimated

07301420 SWEETWATER CREEK NEAR SWEETWATER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	18.2	22.9	25.8	29.9	31.9	39.0	32.0	33.1	31.2	10.7	4.61	12.0
MAX	72.2	61.1	37.9	41.1	51.3	73.0	45.0	47.9	65.6	17.4	18.2	51.6
(WY)	1987	1987	1987	1987	1987	1987	1988	1987	1989	1989	1989	1988
MIN	1.48	10.8	15.2	19.9	18.6	17.9	16.2	18.1	16.4	3.72	.61	.77
(WY)	1993	1993	1991	1991	1991	1991	1991	1991	1993	1990	1986	1993

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1986-93	
ANNUAL TOTAL	7092.37		6762.30			
ANNUAL MEAN	19.4		18.5		24.5	
HIGHEST ANNUAL MEAN					41.4	1987
LOWEST ANNUAL MEAN					14.5	1991
HIGHEST DAILY MEAN	83	May 29	107	May 3	310	Jun 14 1989
LOWEST DAILY MEAN	.23	Sep 26	.08	Aug 30	.08	Aug 30 1993
ANNUAL SEVEN-DAY MINIMUM	.24	Sep 26	.15	Aug 24	.15	Aug 24 1993
INSTANTANEOUS PEAK FLOW			118	May 3	545	Jun 14 1989
INSTANTANEOUS PEAK STAGE			9.83	May 3	12.80	Jun 14 1989
ANNUAL RUNOFF (AC-FT)	14070		13410		17730	
10 PERCENT EXCEEDS	37		37		45	
50 PERCENT EXCEEDS	19		19		20	
90 PERCENT EXCEEDS	1.0		.59		2.5	



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)
May 8	2000	3,960	8.48	No other peak greater than base discharge.			

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.2	7.3	81	87	102	139	325	289	216	81	20	18
2	2.4	7.5	79	89	104	161	261	957	e150	123	28	13
3	2.0	7.5	74	95	107	206	233	992	e134	111	465	10
4	1.8	7.7	71	131	104	211	221	612	e120	81	312	8.4
5	1.7	8.0	66	133	101	183	207	491	e111	66	211	6.9
6	1.7	8.5	65	114	99	161	218	387	e105	58	146	5.7
7	1.5	9.1	64	103	94	159	223	334	e102	178	e103	5.8
8	1.5	9.8	71	103	94	152	214	1850	e99	90	e75	11
9	1.7	11	96	115	93	145	198	2920	e93	63	e62	11
10	2.0	12	102	127	115	137	185	1230	e84	60	e48	9.0
11	1.9	14	96	121	131	126	169	543	e80	50	38	7.1
12	1.9	15	88	102	127	117	158	377	e78	46	30	5.4
13	2.0	15	90	100	122	114	147	294	e76	51	25	5.4
14	2.0	14	98	102	127	115	161	286	e73	57	21	5.0
15	2.0	15	110	98	158	116	180	285	e71	70	18	4.2
16	2.0	16	114	111	e180	118	225	294	69	171	15	4.1
17	2.3	16	106	112	e150	118	224	282	65	152	13	3.9
18	2.9	19	117	121	e100	118	210	283	64	127	11	3.6
19	3.6	33	132	132	113	147	196	286	91	100	9.6	3.0
20	4.6	34	123	122	157	186	175	320	359	79	9.6	2.9
21	4.9	53	115	121	258	249	153	295	294	70	7.8	2.9
22	5.0	90	104	135	197	244	135	260	270	63	7.0	2.5
23	5.0	99	100	170	160	304	124	533	201	53	6.2	2.7
24	5.1	106	94	144	134	379	118	599	150	46	5.4	2.3
25	5.2	145	94	129	129	282	109	454	124	42	4.8	2.6
26	5.3	122	90	124	125	239	106	348	123	38	4.2	2.2
27	5.5	92	88	121	129	208	105	288	154	32	3.9	2.5
28	5.9	82	85	119	134	192	120	255	121	28	3.4	2.1
29	6.1	76	84	114	---	182	357	230	96	26	2.9	1.8
30	6.1	74	85	109	---	405	313	263	79	24	25	1.2
31	6.7	---	84	103	---	390	---	313	---	21	38	---
TOTAL	104.5	1218.4	2866	3607	3644	6003	5770	17150	3852	2257	1768.8	166.2
MEAN	3.37	40.6	92.5	116	130	194	192	553	128	72.8	57.1	5.54
MAX	6.7	145	132	170	258	405	357	2920	359	178	465	18
MIN	1.5	7.3	64	87	93	114	105	230	64	21	2.9	1.2
AC-FT	207	2420	5680	7150	7230	11910	11440	34020	7640	4480	3510	330

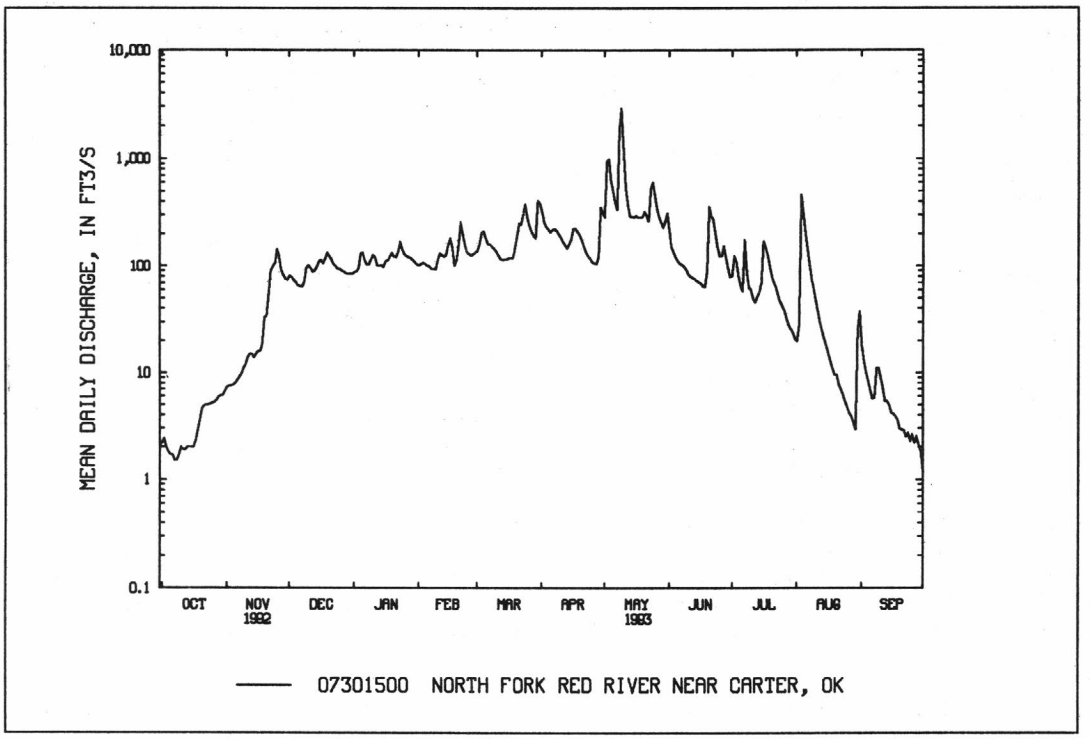
e Estimated

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	94.8	51.8	58.5	71.3	94.3	101	127	423	268	73.2	37.5	49.7
MAX	1195	360	271	319	365	465	683	2713	1246	828	431	368
(WY)	1987	1987	1960	1960	1960	1987	1973	1977	1951	1950	1950	1962
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

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1945-93	
ANNUAL TOTAL	34535.6		48406.9			
ANNUAL MEAN	94.4		133		121	
HIGHEST ANNUAL MEAN					356	1987
LOWEST ANNUAL MEAN					12.9	1981
HIGHEST DAILY MEAN	583	Jul 15	2920	May 9	20700	May 26 1959
LOWEST DAILY MEAN	1.5	Oct 7	1.2	Sep 30	.00	most years
ANNUAL SEVEN-DAY MINIMUM	1.7	Oct 3	1.7	Oct 3	.00	most years
INSTANTANEOUS PEAK FLOW			3960	May 8	53400	May 26 1959
INSTANTANEOUS PEAK STAGE			8.48	May 8	14.98	May 17 1977
ANNUAL RUNOFF (AC-FT)	68500		96020		87790	
10 PERCENT EXCEEDS	206		284		204	
50 PERCENT EXCEEDS	84		100		33	
90 PERCENT EXCEEDS	5.0		4.0		.00	



07302500 LAKE ALTUS AT LUGERT, OK

LOCATION.--Lat 34°53'08", long 99°17'43", in SW 1/4 SE 1/4 sec.22, T.5 N., R.20 W., Kiowa County, Hydrologic Unit 11120302, on upstream face of Altus Dam on North Fork Red River, 1.0 mi west of Lugert, 2.6 mi upstream from Elm Fork of North Fork, and at mile 73.5.

DRAINAGE AREA.--2,515 mi^2, of which 399 mi^2 is probably noncontributing.

PERIOD OF RECORD.--December 1943 to September 1950 (monthly records only), October 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation). Prior to Nov. 19, 1948, nonrecording or float gage at same site and datum.

REMARKS.--Reservoir is formed by concrete and coursed masonry dam. Storage began in December 1943. Capacity, 134,500 acre-ft at elevation 1,559.0 ft, crest of uncontrolled spillway, and 72,400 acre-ft at elevation 1,547.0 ft, crest of controlled spillway. Dead storage, 1,660 acre-ft below elevation 1,517.5 ft, sill of headgate at irrigation canal. Figures given herein represent total contents. Reservoir is used for flood control, municipal water supply for city of Altus, and irrigation of about 48,000 acres. Revised capacity table used since Jan. 1, 1969. From 1927 to 1943, a dam to form reservoir for municipal water supply was at same site. Elevation of crest was 1,514.31 ft. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 170,600 ft^3/s, May 19, 1951, elevation 1,562.10 ft; minimum after initial storage, 4,690 acre-ft, Aug. 25, 1944, elevation, 1,520.2 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 151,000 acre-ft, May 10, elevation 1,561.55 ft; minimum, 79,500 acre-ft, Sept. 30, elevation, 1,548.67 ft.

Capacity table (elevation, in feet, and contents, in acre-feet):

1520	3,844	1540	46,780
1525	10,710	1548	76,580
1529	18,130	1559	134,500
1534	29,620	1563	161,000

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

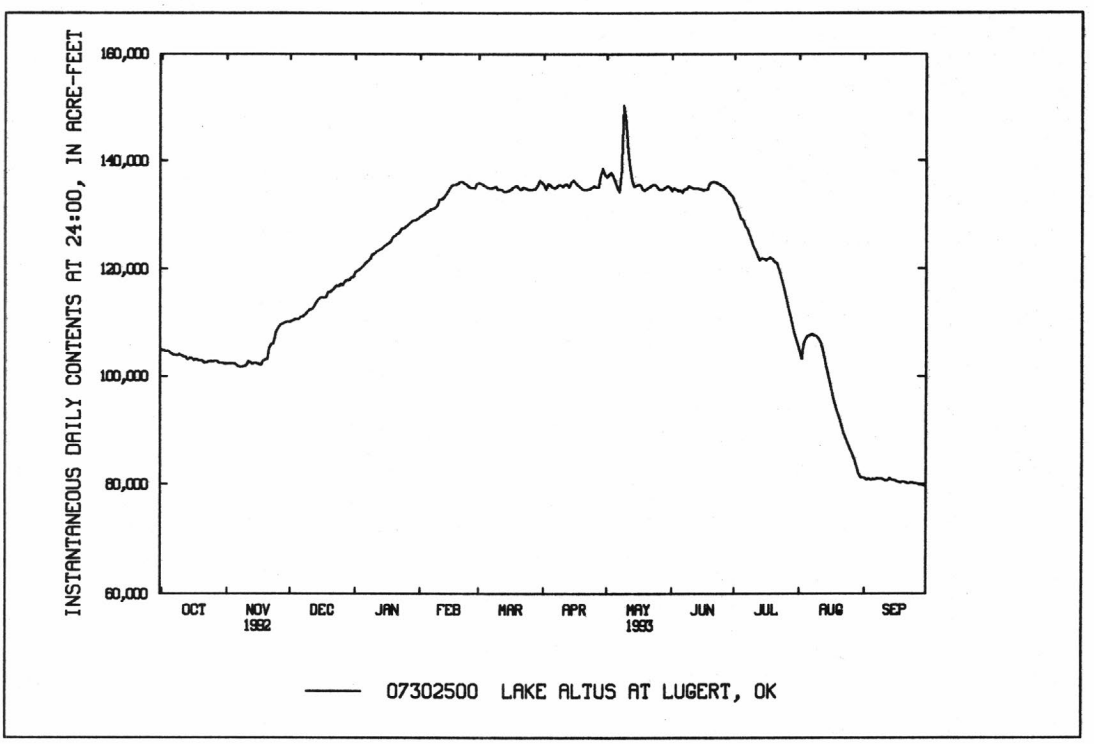
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	104800	102300	110200	119400	129600	135900	135600	137000	134400	132300	104800	81190
2	104800	102400	110400	119600	129800	135800	134700	137400	134900	131600	103300	80830
3	104700	102400	110600	119900	130100	135500	135800	137800	134700	130300	106200	81050
4	104700	102400	110700	120200	130500	135300	135500	137100	134400	129200	107100	80830
5	104300	102300	110700	120600	130700	135000	135100	136100	134500	129000	107600	80960
6	104100	101900	111100	121100	131000	134900	134900	134900	134100	127800	107700	80870
7	104000	101800	111200	121400	131100	134900	135100	134300	134800	127300	107900	81100
8	103900	101800	111500	121800	131300	135100	135500	138000	134700	126200	107600	80960
9	104100	101900	112000	122600	131700	135200	135500	150400	135300	125200	107500	81010
10	103900	102000	112400	122700	132800	134600	135200	148100	135100	124000	107000	80920
11	103700	102800	112500	123100	132800	134700	135600	142400	134900	123300	106400	80610
12	103600	102600	112800	123300	133100	134600	135700	138600	134900	122300	105000	80650
13	103100	102300	113600	123500	133600	134200	135100	136400	134800	121500	103300	81140
14	103400	102500	114200	123800	134200	134300	136000	135200	134800	121900	101500	80830
15	103400	102400	114600	124200	134900	134400	136400	135400	134700	121800	99790	80740
16	103000	102300	114800	124400	135400	134600	136000	135600	134500	121500	98000	80610
17	103200	102100	114700	124700	135600	135000	135500	135600	134600	121800	96230	80430
18	103000	102900	114800	125000	135600	135200	135200	134600	134700	122000	94730	80250
19	102900	103100	115800	125800	135800	135400	134800	134500	135800	121800	93440	80470
20	102900	103200	115800	126000	136100	134900	134600	134800	136000	121200	92260	80390
21	102500	105300	116100	126400	136100	134600	134600	135100	136100	121100	90950	80250
22	102600	106000	116500	126600	135800	135100	134700	135300	136000	120100	89460	80210
23	102700	106100	117000	127300	135600	134900	134800	135600	135800	118800	88560	80340
24	102800	108100	116800	127400	135200	134800	135100	135600	135600	117300	87560	80250
25	102700	108900	117300	127700	135000	134600	135300	135100	135300	115700	86670	80210
26	102800	109500	117100	128000	135000	134600	135100	134600	135100	114000	85790	80120
27	102800	109800	117700	128400	134900	134700	135100	134600	134600	112200	84820	79940
28	102500	109900	118000	128800	135800	134800	137300	134800	134200	110600	83540	79940
29	102500	110100	117900	128900	---	135400	138500	135100	133700	108900	82220	79810
30	102400	110200	118400	129000	---	136300	137500	135300	133300	107400	81410	79590
31	102400	---	118500	129200	---	136000		135100	---	106100	81190	---

07302500 LAKE ALTUS AT LUGERT, OK--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MAX	104800	110200	118500	129200	136100	136300	138500	150400	136100	132300	107900	81190
MIN	102400	101800	110200	119400	129600	134200	134600	134300	133300	106100	81190	79590
(‡)	1553.43	1554.88	1556.34	1558.15	1559.20	1559.24	1559.47	1559.09	1558.81	1554.11	1549.05	1548.69
(‡‡)	-2,800	+7,800	+8,300	+10,700	+6,600	+200	+1,500	-2,400	-1,800	-27,200	-24,910	-1,600

CAL YR 1992 MAX 137600 MIN 95070 (‡‡) +24,070
WTR YR 1993 MAX 150400 MIN 79590 (‡‡) -25,610

(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET



07303000 NORTH FORK RED RIVER BELOW ALTUS DAM, NEAR LUGERT, OK

LOCATION.--Lat 34°53'26", long 99°18'22", in SW 1/4 sec.22, T.5 N., R.20 W., Greer County, Hydrologic Unit 11120303, on right bank at State Highway 44A bridge, 3,500 ft downstream from Altus Dam, 1.9 mi upstream from Elm Fork of North Fork, 2.0 mi west of Lugert, and at mile 72.8.

DRAINAGE AREA.--2,515 mi^2, of which 399 mi^2 is probably noncontributing.

PERIOD OF RECORD.--March 1930 to December 1932 (published as "at Lugert Dam"), December 1943 to September 1950 (published as spill from Lake Altus), October 1950 to September 1962, August 1964 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,471.81 ft above sea level. Mar. 19, 1930 to Dec. 21, 1932, nonrecording gage at former Lugert Dam, 0.7 mi upstream at datum 1,504.31 ft National Geodetic Vertical Datum of 1929, unadjusted.

REMARKS.--Records good. Some regulation at low flow by Lugert Lake prior to December 1943, capacity 13,500 acre-ft and completely regulated thereafter by Lake Altus (station 07302500). Diversions at Lake Altus bypass most of streamflow. Seepage from Altus Dam not included for period February 1953 to September 1977.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft^3/s, May 18, 1951, gage height, 12.70 ft, maximum gage height, 16.37 ft, May 21, 1977 (backwater from Elm Fork of the North Fork Red River); no flow at times in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 16, 1928, reached a stage of 14.5 ft, site and datum in use 1930-32, discharge, 14,300 ft^3/s.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,440 ft^3/s, May 9, gage height, 13.51 ft (backwater); no flow Oct. 1-10, Sept. 29-30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

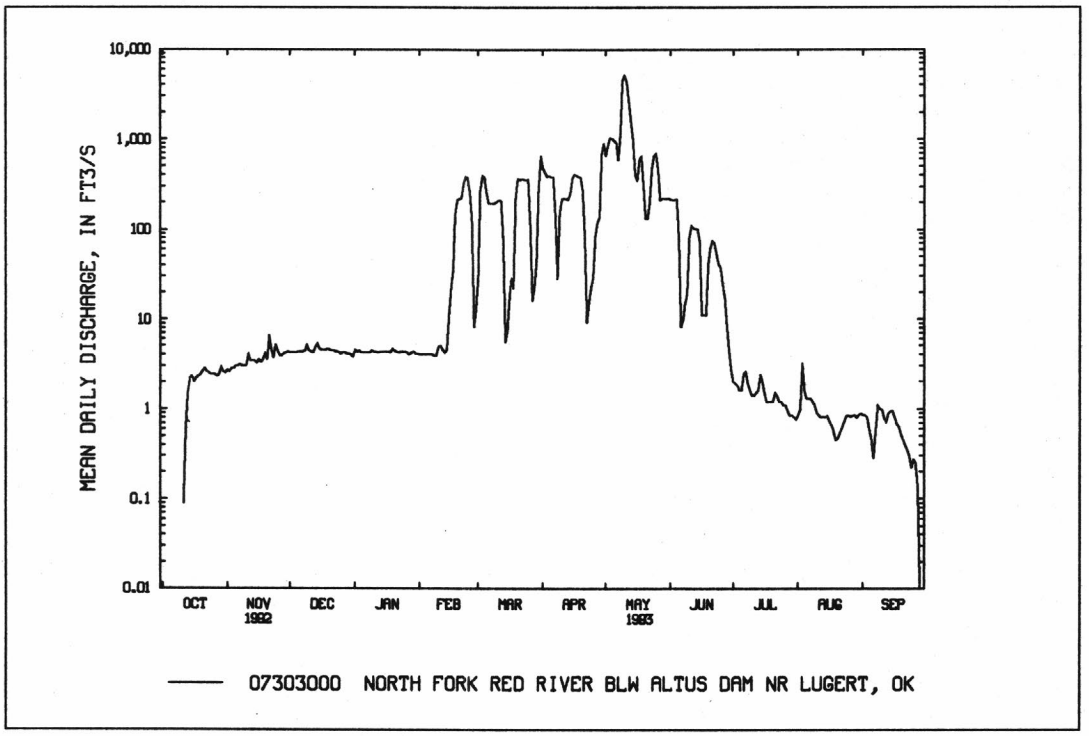
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.7	4.2	4.5	4.0	28	475	649	216	2.0	.85	.86
2	.00	2.6	4.2	4.3	4.0	271	426	843	213	1.9	.99	.85
3	.00	2.8	4.2	4.4	4.0	391	382	1030	213	1.8	3.2	.80
4	.00	2.8	4.2	4.2	4.0	379	390	1010	216	1.6	1.6	.58
5	.00	3.0	4.3	4.2	4.0	256	378	956	80	1.6	1.3	.46
6	.00	3.0	4.3	4.2	4.0	196	373	908	8.2	2.4	1.3	.28
7	.00	3.1	4.3	4.2	4.0	196	134	577	9.7	2.6	1.3	.57
8	.00	3.0	4.4	4.2	3.9	195	28	1130	15	1.9	1.2	1.1
9	.00	3.0	5.1	4.4	3.9	196	150	e4430	19	1.6	1.1	1.0
10	.00	3.0	4.4	4.3	4.9	204	219	e5130	82	1.4	.90	.98
11	.09	4.1	4.3	4.3	5.0	212	220	4430	110	1.4	.85	.79
12	.63	3.4	4.2	4.2	4.5	207	218	2710	104	1.5	.80	.71
13	1.5	3.4	4.8	4.3	4.2	76	216	1610	102	1.6	.82	.88
14	2.2	3.4	5.3	4.3	4.5	5.5	247	1010	101	2.4	.80	.94
15	2.3	3.2	4.6	4.3	11	7.6	363	402	73	2.0	.84	.95
16	2.0	3.5	4.5	4.3	22	17	407	345	11	1.5	.72	.82
17	2.2	3.3	4.5	4.3	35	29	392	582	11	1.2	.66	.68
18	2.3	3.5	4.5	4.2	147	22	381	641	11	1.2	.56	.63
19	2.4	4.1	4.6	4.6	212	228	375	306	41	1.2	.45	.53
20	2.6	3.5	4.5	4.4	218	362	268	134	61	1.2	.47	.46
21	2.8	6.6	4.4	4.3	222	352	82	134	75	1.5	.54	.40
22	2.6	4.5	4.4	4.2	326	358	9.2	204	70	1.4	.62	.35
23	2.5	3.7	4.3	4.3	383	353	15	476	53	1.2	.72	.30
24	2.4	5.2	4.3	4.3	368	350	22	652	41	1.2	.83	.22
25	2.4	4.4	4.1	4.3	256	356	29	688	37	1.1	.85	.27
26	2.4	3.9	4.2	4.2	132	113	84	458	24	1.1	.82	.25
27	2.3	3.9	4.2	4.0	8.2	16	120	213	17	.95	.84	.14
28	2.4	4.1	4.1	4.2	13	22	138	218	8.6	.84	.86	.01
29	2.9	4.2	4.1	4.3	---	43	687	218	4.5	.85	.80	.00
30	2.6	4.3	4.0	4.1	---	281	900	219	2.7	.81	.86	.00
31	2.5	---	3.8	4.1	---	647	---	220	---	.76	.88	---
TOTAL	46.02	109.2	135.3	132.4	2412.1	6369.1	8128.2	32533	2029.7	45.71	29.33	16.81
MEAN	1.48	3.64	4.36	4.27	86.1	205	271	1049	67.7	1.47	.95	.56
MAX	2.9	6.6	5.3	4.6	383	647	900	5130	216	2.6	3.2	1.1
MIN	.00	2.6	3.8	4.0	3.9	5.5	9.2	134	2.7	.76	.45	.00
AC-FT	91	217	268	263	4780	12630	16120	64530	4030	91	58	33

CAL YR 1992	TOTAL 10530.12	MEAN 28.8	MAX 878	MIN .00	AC-FT 20890
WTR YR 1993	TOTAL 51986.87	MEAN 142	MAX 5130	MIN .00	AC-FT 103100

e Estimated

07303000 NORTH FORK RED RIVER BELOW ALTUS DAM, NEAR LUGERT, OK--Continued



07304500 ELK CREEK NEAR HOBART, OK

LOCATION.--Lat 34°54'51", long 99°06'49", in NE 1/4 NE 1/4 sec.17, T.5 N., R.18 W., Kiowa County, Hydrologic Unit 11120303, near right bank on downstream side of pier of county road bridge, 7.0 mi downstream from Little Elk Creek, 7.5 mi south of Hobart, and at mile 10.9.
DRAINAGE AREA.--549 mi^2.
PERIOD OF RECORD.--September 1904 to March 1908, October 1949 to September 1993 (discontinued).
REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1905. WDR OK-86-1: 1984 (M).
GAGE.--Water-stage recorder. Datum of gage is 1,429.4 ft above sea level. See WSP 1920 for history of changes prior to Apr. 28, 1954.
REMARKS.--Records poor. Part of high flows are diverted 1.0 mi upstream from station, by means of a breech canal (U.S. Bureau of Reclamation), into Tom Steed Reservoir.
PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Nov. 21	2345	4,620	21.71	May 2	1715	3,090	17.73
Nov. 25	0045	4,480	21.40	May 9	1515	23,600	31.65
Dec. 14	1530	2,710	16.54	July 8	0400	2,210	14.96
Apr. 15	0515	2,500	15.89	July 15	0100	3,960	20.13
Apr. 29	1915	4,080	20.44				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	e11	103	139	91	148	304	706	e210	72	24	e40
2	26	e10	109	127	96	226	190	2090	e200	64	172	e90
3	23	e10	91	369	96	189	153	1480	e190	68	502	e40
4	17	e9.9	94	449	105	159	398	770	e180	53	133	e33
5	15	e9.8	100	246	96	135	265	e580	e170	56	120	e30
6	15	e9.8	83	188	92	119	183	e520	e170	53	67	e28
7	14	e9.7	83	171	86	108	163	e900	e250	795	59	e26
8	12	e10	82	169	86	102	149	3220	e180	1540	e55	e95
9	13	e11	588	501	83	98	132	15200	156	448	e54	e30
10	12	13	349	463	105	99	113	10700	152	224	e52	e28
11	13	111	146	272	171	101	107	5430	154	173	49	e36
12	13	148	102	215	178	92	107	e1100	143	146	e48	e35
13	13	32	715	199	115	91	100	e610	127	123	e46	e99
14	12	19	2140	163	96	80	635	e500	115	1560	e45	e67
15	12	17	785	151	277	73	1530	e440	111	2000	e45	e33
16	11	16	353	151	739	71	373	e1650	102	456	e43	e31
17	e10	16	232	147	335	79	213	e940	92	207	e40	e30
18	e10	22	174	150	188	83	e155	e720	83	e145	e37	e27
19	e10	766	151	140	174	136	e130	620	86	e108	e36	e26
20	e10	131	148	226	180	270	e120	568	172	81	e36	e23
21	e9.8	2130	118	392	190	190	e115	563	320	77	e36	e19
22	e9.7	2900	116	283	191	411	e110	554	158	142	e36	e17
23	e9.6	539	110	213	151	365	e105	769	123	60	e34	e22
24	e9.5	1530	112	194	148	223	e100	1350	100	46	e32	e29
25	e9.5	2880	96	144	129	174	e95	842	80	39	e30	e23
26	e9.4	705	109	133	131	141	e91	611	70	34	e31	e21
27	e9.4	309	90	129	121	114	e90	e450	71	31	e29	e20
28	e12	214	93	124	121	105	e110	e340	191	28	e28	e20
29	e17	e160	105	130	---	104	2840	e290	174	28	e27	e18
30	e14	e125	128	114	---	718	1620	e250	102	27	e77	e18
31	e12	---	142	93	---	586	---	e230	---	26	e50	---
TOTAL	410.9	12874.2	7847	6585	4571	5590	10796	54993	4432	8910	2073	1054
MEAN	13.3	429	253	212	163	180	360	1774	148	287	66.9	35.1
MAX	28	2900	2140	501	739	718	2840	15200	320	2000	502	99
MIN	9.4	9.7	82	93	83	71	90	230	70	26	24	17
AC-FT	815	25540	15560	13060	9070	11090	21410	109100	8790	17670	4110	2090

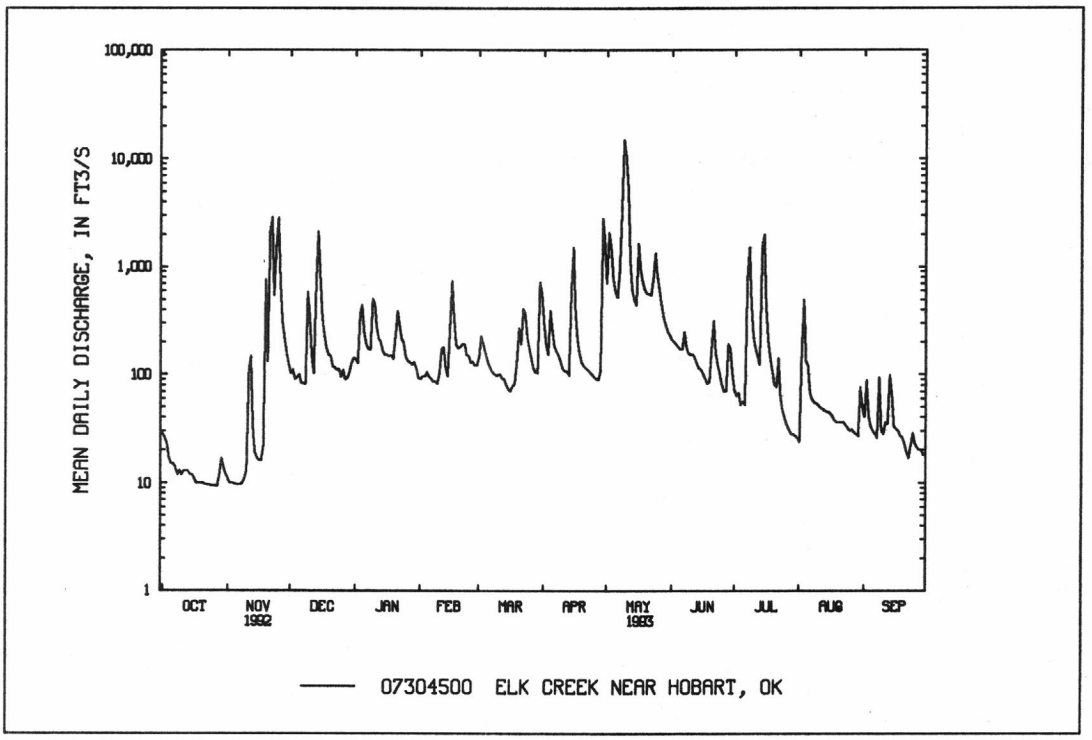
e Estimated

07304500 ELK CREEK NEAR HOBART, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1905 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	150	52.2	37.8	36.1	40.3	59.8	70.0	279	173	76.5	33.1	91.4
MAX	1935	429	279	212	259	438	480	1774	860	813	199	607
(WY)	1987	1993	1992	1993	1960	1988	1957	1993	1989	1975	1977	1965
MIN	.000	.000	.000	.000	.69	.55	.51	.026	2.26	.000	.000	.000
(WY)	1953	1955	1955	1955	1957	1954	1971	1953	1956	1954	1952	1952

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1905-93	
ANNUAL TOTAL	55416.1		120136.1			
ANNUAL MEAN	151		329		91.5	
HIGHEST ANNUAL MEAN					427	1987
LOWEST ANNUAL MEAN					13.9	1967
HIGHEST DAILY MEAN	2900	Nov 22	15200	May 9	21100	Oct 20 1983
LOWEST DAILY MEAN	9.4	Oct 26	9.4	Oct 26-27	.00	at times
ANNUAL SEVEN-DAY MINIMUM	9.6	Oct 21	9.6	Oct 21	.00	Jul 25 1952
INSTANTANEOUS PEAK FLOW			23600	May 9	28000	Oct 3 1986
INSTANTANEOUS PEAK STAGE			31.65	May 9	31.65	May 9 1993
ANNUAL RUNOFF (AC-FT)	109900		238300		66300	
10 PERCENT EXCEEDS	330		615		128	
50 PERCENT EXCEEDS	62		111		16	
90 PERCENT EXCEEDS	16		16		.80	



07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK

LOCATION.--Lat 34°38'04", long 99°05'47", in NW 1/4 NE 1/4 sec.21, T.2 N., R.18 W., Tillman County, Hydrologic Unit 11120303, near left bank on downstream side of pier of bridge on old U.S. Highway 62, 2.5 mi east of Headrick, 12.9 mi upstream from Otter Creek, and at mile 33.0.

DRAINAGE AREA.--4,244 mi^2, of which 399 mi^2 is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--April 1905 to March 1908, October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to July 1905, published as near Snyder.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1905-07.

GAGE.--Water-stage recorder. Datum of gage is 1,294.83 ft above sea level. Prior to July 18, 1905, nonrecording gage at site 0.2 mi downstream at different datum. July 18, 1905, to Mar. 30, 1908, nonrecording gage at Navajo damsite 10.4 mi upstream at different datum. Oct. 1, 1937, to Jan. 29, 1969, water-stage recorder at present site at datum 5.0 ft higher.

REMARKS.--Records poor. Flow regulated since December 1943 by storage and diversion at Lake Altus, 39.5 mi upstream from station (station 07302500). Diversions for irrigation of about 48,000 acres upstream from station; some return flow may re-enter at Stinking Creek, 16 mi downstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--A stage of 21.1 ft, present datum, occurred sometime prior to 1927, from information provided by Oklahoma State Highway Department.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	75	69	307	282	242	439	1220	2620	e900	210	173	254
2	75	67	272	296	235	457	941	3680	870	175	172	479
3	74	67	255	303	233	646	816	5210	e860	204	455	325
4	73	67	232	660	230	756	762	3380	e830	183	2500	229
5	70	68	226	594	230	716	1270	2280	e790	157	1450	204
6	68	69	226	461	229	638	979	1810	e690	147	696	181
7	66	70	206	375	225	563	853	1600	e640	192	465	164
8	64	70	201	340	220	547	689	2900	e530	3150	388	297
9	64	72	397	340	216	536	573	15300	500	3580	342	281
10	63	72	1150	787	239	526	581	41600	453	1100	313	195
11	64	75	474	565	256	524	619	25900	458	694	285	174
12	64	143	325	470	281	519	610	13100	493	527	264	147
13	65	226	389	400	299	516	593	6470	464	469	246	158
14	64	124	3520	371	265	471	620	3800	431	430	230	197
15	64	99	2950	341	428	385	2710	e2750	405	2440	216	170
16	63	90	916	321	1070	367	1890	e2150	381	1530	205	137
17	62	86	609	312	1070	359	1130	2220	297	827	194	130
18	64	98	533	304	898	375	952	2490	261	559	185	126
19	65	197	469	302	624	384	835	2130	248	454	175	124
20	66	631	416	323	621	502	775	1600	354	397	168	123
21	67	780	384	525	642	751	686	1250	541	360	164	121
22	67	5200	347	605	642	719	561	1150	639	341	157	117
23	68	2080	324	510	671	953	469	1180	432	352	168	116
24	68	1260	307	411	698	863	449	3990	342	299	159	118
25	68	5330	299	358	681	776	440	3030	364	270	147	134
26	67	2210	289	309	638	730	439	2150	279	247	143	126
27	67	859	283	287	572	600	441	1560	247	226	142	122
28	67	537	273	275	475	461	479	1150	278	211	139	117
29	66	427	265	267	---	437	3110	e1000	489	201	136	115
30	66	350	262	261	---	497	6290	e980	299	190	133	112
31	71	---	273	259	---	1080	---	e920	---	179	205	---
TOTAL	2075	21493	17379	12214	13130	18093	32782	161350	14765	20301	10815	5293
MEAN	66.9	716	561	394	469	584	1093	5205	492	655	349	176
MAX	75	5330	3520	787	1070	1080	6290	41600	900	3580	2500	479
MIN	62	67	201	259	216	359	439	920	247	147	133	112
AC-FT	4120	42630	34470	24230	26040	35890	65020	320000	29290	40270	21450	10500

e Estimated

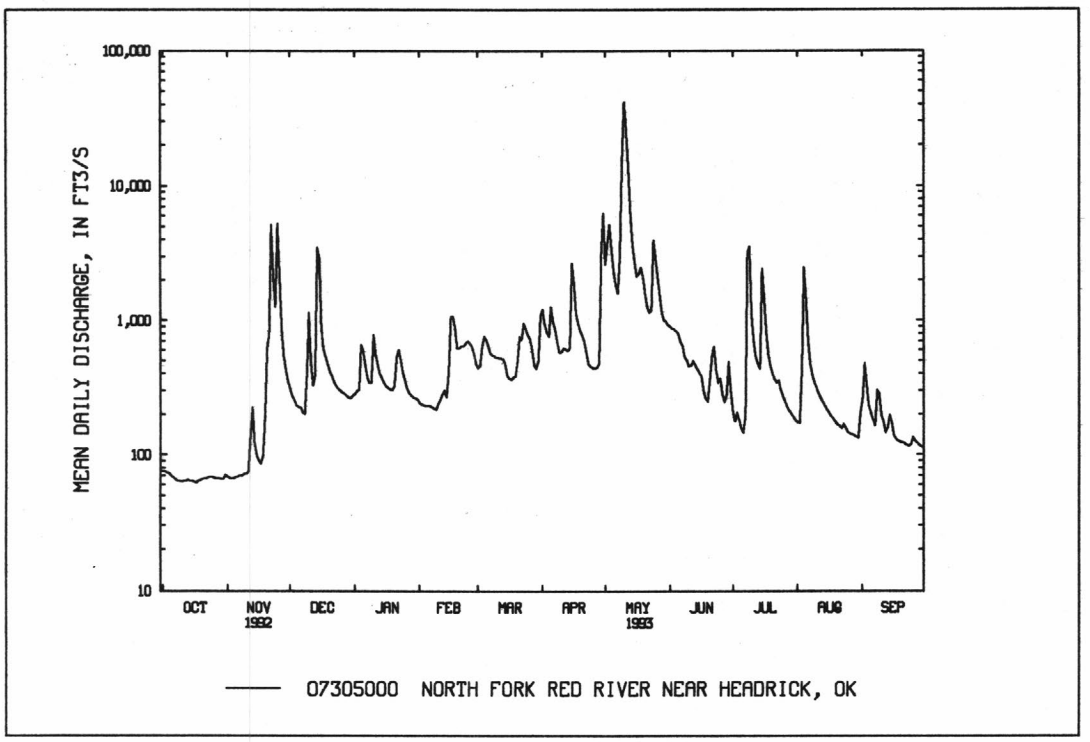
07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	380	144	110	98.8	136	191	249	1046	764	246	108	239
MAX	5608	1743	838	792	1162	1634	1448	6104	3194	2016	706	1675
(WY)	1987	1987	1992	1987	1960	1987	1973	1977	1989	1950	1950	1965
MIN	.000	.000	.20	.84	4.06	4.27	.64	.31	10.3	.25	.000	.000
(WY)	1953	1953	1955	1953	1953	1955	1971	1953	1966	1970	1952	1952

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1945-93	
ANNUAL TOTAL	142292		329690			
ANNUAL MEAN	389		903		[a]310	
HIGHEST ANNUAL MEAN					1562	1987
LOWEST ANNUAL MEAN					50.0	1970
HIGHEST DAILY MEAN	5330	Nov 25	41600	May 10	41600	May 10 1993
LOWEST DAILY MEAN	62	Oct 17	62	Oct 17	[b].00	Aug 2 1946
ANNUAL SEVEN-DAY MINIMUM	64	Oct 11	64	Oct 11	.00	Aug 2 1946
INSTANTANEOUS PEAK FLOW			56100	May 10	59000	Oct 4 1986
INSTANTANEOUS PEAK STAGE			18.83	May 10	19.07	Oct 4 1986
ANNUAL RUNOFF (AC-FT)	282200		653900		224700	
10 PERCENT EXCEEDS	874		1600		516	
50 PERCENT EXCEEDS	205		359		56	
90 PERCENT EXCEEDS	71		72		5.3	

[a]Prior to regulation water years 1906-07, 1938-43 455 ft^3/s.
[b]No flow at times in most years.



07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--September 1944, February 1951 to December 1956, January 1958 to September 1963, July 1968 to September 1993 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1959 to September 1963, July 1968 to March 1989.
WATER TEMPERATURE: November 1959 to September 1963, July 1968 to March 1989.

INSTRUMENTATION.--Water-quality monitor from August 1969 to September 1981.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 23,300 microsiemens, June 8, 1974; minimum daily, 302 microsiemens, Oct. 20, 1983.
WATER TEMPERATURE: Maximum daily, 38.0°C, July 19, 1969, Aug. 4, 1977, July 19, 1988; minimum daily, 0.0°C on many days during winter periods.

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
JUN										
02...	1453	20.0	27.0	722	1028	1028	7.16	3400	8.2	8.2
02...	1456	40.0	26.5	722	1028	1028	7.16	3400	7.9	8.2
02...	1459	60.0	26.5	722	1028	1028	7.16	3400	8.2	8.2
02...	1502	80.0	26.5	722	1028	1028	7.16	3410	8.2	8.2
02...	1505	100	26.5	722	1028	1028	7.16	3410	8.2	8.2
02...	1508	120	26.5	722	1028	1028	7.16	3410	8.0	8.2
02...	1511	140	26.5	722	1028	1028	7.16	3410	8.2	8.2
02...	1514	160	26.5	722	1028	1028	7.16	3410	8.1	8.2
02...	1517	180	26.5	722	1028	1028	7.16	3410	8.2	8.2
02...	1520	200	26.5	722	1028	1028	7.16	3410	8.2	8.2
02...	1523	220	26.5	722	1028	1028	7.16	3420	8.1	8.2
02...	1526	240	26.5	722	1028	1028	7.16	3410	8.2	8.2
02...	1529	260	26.5	722	1028	1028	7.16	3400	8.2	8.2
02...	1532	280	26.5	722	1028	1028	7.16	3400	8.0	8.2
02...	1535	300	26.5	722	1028	1028	7.16	3410	8.2	8.2

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)
OCT											
06...	1230	1028	80020	68	6560	8.1	24.0	18.5	3.7	740	9.6
FEB											
02...	1330	1028	80020	235	5130	8.2	16.0	9.5	1.3	731	12.6
JUN											
02...	1330	1028	80020	870	3370	8.2	32.5	25.5	44	722	8.2
JUL											
26...	1400	1028	80020	248	5660	8.2	35.5	30.0	20	723	10.7

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)
OCT											
06...	108	25	24	940	740	220	93	1100	72	16	1.5
FEB											
02...	117	K9	K28	1100	790	260	100	700	59	9	6.2
JUN											
02...	107	42	98	920	710	230	84	420	49	6	32
JUL											
26...	153	K16	50	1200	1000	300	99	850	61	11	7.6

DATE	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CARBONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	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)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)
OCT											
06...	238	0	195	720	1400	0.50	4.3	4040	3660	5.49	742
FEB											
02...	331	0	271	800	1100	0.40	8.8	3210	3150	4.37	2040
JUN											
02...	256	0	210	750	610	0.60	13	2340	2270	3.18	5500
JUL											
26...	154	0	126	1000	1200	0.40	11	3860	3550	5.25	2580

07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)
OCT											
06...	--	--	--	<0.010	<0.010	--	<0.050	<0.050	0.010	0.01	0.39
FEB											
02...	1.98	1.98	8.8	--	0.020	0.07	--	2.00	0.020	0.03	0.58
JUN											
02...	0.920	0.920	4.1	--	0.010	0.03	--	0.930	0.030	0.04	4.5
JUL											
26...	0.340	0.340	1.5	--	0.020	0.07	--	0.360	0.040	0.05	0.96

DATE	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	COBALT, DISSOLVED (UG/L AS CO) (01035)	IRON, DISSOLVED (UG/L AS FE) (01046)
OCT											
06...	0.40	0.40	0.030	<0.010	<0.010	<0.010	--	<10	200	<1	<10
FEB											
02...	0.60	2.6	0.090	0.010	--	0.010	0.03	<10	100	<1	<10
JUN											
02...	4.5	5.4	0.050	0.020	--	<0.010	--	<10	200	<1	<10
JUL											
26...	1.0	1.4	0.070	<0.010	--	<0.010	--	20	100	<1	20

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
06...	50	40	2	<1	2	<1.0	2900	41	16	2.9	66
FEB											
02...	50	20	4	4	4	<1.0	2900	30	398	253	96
JUN											
02...	50	<10	3	<1	3	<1.0	2800	26	1150	2700	64
JUL											
26...	60	<10	3	1	4	<1.0	3600	39	628	421	97

07305500 WEST OTTER CREEK AT SNYDER LAKE, NEAR MOUNTAIN PARK, OK

LOCATION.--Lat 34°44'02", long 98°59'10", in SE 1/4 sec.16, T.3 N., R.17 W., Kiowa County, Hydrologic Unit 11120303, near east end of Snyder Dam, 0.8 mi upstream from small tributary, 3 mi northwest of Mountain Park, and at mile 26.0.

DRAINAGE AREA.--132 mi^2.

PERIOD OF RECORD.--April 1903 to March 1908, October 1951 to September 1971, July 1972 to current year. Published as Otter Creek near Mountain Park 1903-8 and as Otter Creek at Snyder Lake, near Mountain Park 1951-60. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1731: 1960 (M). WSP 1920: 1959-60. WDR OK-78-2: 1977.

GAGE.--Water-stage recorder and broad-crested masonry spillway. Datum of gage is 1,361.06 ft above sea level. April 1903 to March 1908, nonrecording gage at site 1.8 mi downstream at different datum. October 1951 to September 1971 at intake tower at same site and datum. July 1972 to August 1976, 700 ft downstream at datum 1,344.00 ft.

REMARKS.--Records fair. The city of Snyder diverted about 130 acre-ft annually prior to October 1958 and none thereafter. Flow completely regulated since June 1975 by Tom Steed Reservoir.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	e89	e44	33	.00	170	338	.00	.00	.00
2	.00	.00	.00	e89	e.00	.07	.00	162	338	.00	.00	.00
3	.00	.00	.00	e89	e.00	.00	.00	120	338	.00	.00	.00
4	.00	.00	.00	e89	e.00	.00	.00	59	338	.00	.00	.00
5	.00	.00	.00	e89	.00	.00	.00	129	338	.00	.00	.00
6	.00	.00	.00	e46	.00	.00	.00	148	338	.00	.00	.00
7	.00	.00	.00	e.00	.00	.00	.00	148	327	.00	.00	.00
8	.00	.00	.00	e.00	.00	.00	.00	106	269	.00	.00	.00
9	.00	.00	.00	e.00	.00	.00	.00	16	268	.00	.00	.00
10	.00	.00	e27	e.00	.00	.00	.00	3.5	268	.00	.00	.00
11	.00	.00	e50	e.00	.00	.00	.00	.10	254	.00	.00	.00
12	.00	.00	e50	e66	.00	.00	.00	31	230	.00	.00	.00
13	.00	.00	e50	e89	.00	.00	.00	100	95	.00	.00	.00
14	.00	.00	e19	e89	.00	.00	.00	180	1.7	.00	.00	.00
15	.00	.00	e.00	e71	.00	.00	.00	223	.00	.00	.00	.00
16	.00	.00	e51	e50	25	.00	41	243	.00	.00	.00	.00
17	.00	.00	e157	e50	79	.00	83	250	.00	.00	.00	.00
18	.00	.00	e239	e50	134	.00	83	281	.00	.00	.00	.00
19	.00	.00	e293	e19	167	.00	81	324	.00	.00	.00	.00
20	.00	.00	e316	e.00	190	.00	81	375	.00	.00	.00	.00
21	.00	.00	e316	e59	190	.00	81	375	.00	.00	.00	.00
22	.00	.00	e315	e89	190	.00	81	375	.00	.00	.00	.00
23	.00	.00	e315	e89	190	18	41	375	.00	.00	.00	.00
24	.00	.00	e315	e89	190	35	.42	352	.00	.00	.00	.00
25	.00	.00	e314	e89	149	40	.06	338	.00	.00	.00	.00
26	.00	.00	e314	e89	100	49	.00	338	.00	.00	.00	.00
27	.00	.00	e314	89	69	49	.00	338	.00	.00	.00	.00
28	.00	.00	e313	e89	72	48	.00	338	.00	.00	.00	.00
29	.00	.00	e313	83	---	26	27	338	.00	.00	.00	.00
30	.00	.00	e235	e89	---	1.1	126	338	.00	.00	.00	.00
31	.00	---	e127	e89	---	.48	---	338	---	.00	.00	---
TOTAL	0.00	0.00	4443.00	1918.00	1789.00	299.65	725.48	6911.60	3740.70	0.00	0.00	0.00
MEAN	.000	.000	143	61.9	63.9	9.67	24.2	223	125	.000	.000	.000
MAX	.00	.00	316	89	190	49	126	375	338	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00
AC-FT	.00	.00	8810	3800	3550	594	1440	13710	7420	.00	.00	.00

e Estimated

07305500 WEST OTTER CREEK AT SNYDER LAKE, NEAR MOUNTAIN PARK, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1976 - 1993, BY WATER YEAR (WY)

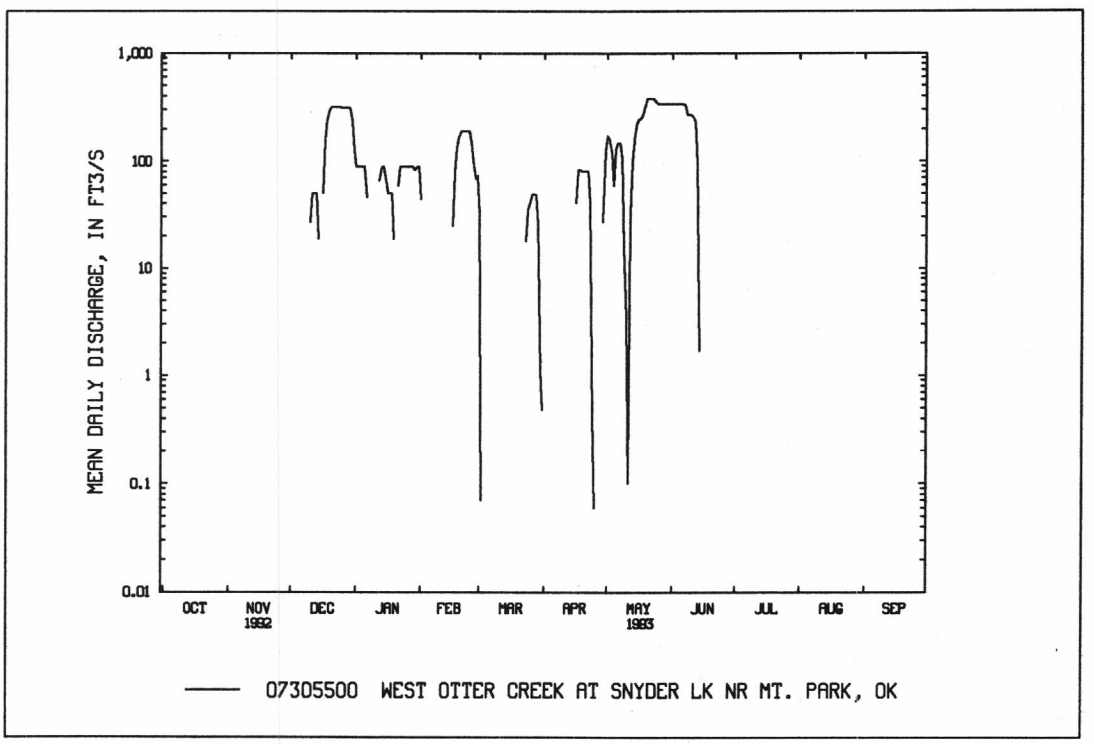
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.60	19.9	13.6	4.09	13.8	13.7	4.62	44.7	58.5	6.31	.28	1.64
MAX	105	252	143	61.9	180	165	29.5	384	421	71.6	1.64	21.5
(WY)	1987	1987	1993	1993	1987	1988	1988	1987	1987	1982	1984	1992
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1976	1976	1976	1976	1977	1977	1977	1979	1988	1976	1976	1976

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1976-93	
ANNUAL TOTAL	5087.00		19827.43			
ANNUAL MEAN	13.9		54.3		[a]15.7	
HIGHEST ANNUAL MEAN					125	1987
LOWEST ANNUAL MEAN					.025	1977
HIGHEST DAILY MEAN	316	Dec 20	375	May 20	3480	May 28 1987
LOWEST DAILY MEAN	.00	Jan 1	.00	at times	.00	at times
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 1 1975
INSTANTANEOUS PEAK FLOW	3		75	May 19	[b]4300	May 29 1987
INSTANTANEOUS PEAK STAGE			13.03	May 19	[c]15.44	May 29 1987
ANNUAL RUNOFF (AC-FT)	10090		39330		11360	
10 PERCENT EXCEEDS	5.4		252		3.5	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

[a]Prior to regulation water years 1904-07, 1951-71, 1973-74, 23.0 ft^3/s.

[b]Maximum discharge for period of record, 14,200 ft^3/s, June 6, 1953, from rating curve extended above 1,600 ft^3/s on basis of contracted opening and flow over dam measurments of peak flow.

[c]Maximum gage height for period of record, 19.50 ft, from flood marks, June 6, 1953.



07307028 NORTH FORK RED RIVER NEAR TIPTON, OK

LOCATION.--Lat 34°30'25", long 99°12'28", in NW 1/4 NE 1/4 sec.5, T.1 S, R.19 W., Tillman County, Hydrologic Unit 11120303, near left bank on downstream side of bridge pier on State Highway 5, 3.8 mi west of intersection of State Highways 5 and 5C in Tipton, 4.8 mi downstream from Otter Creek, and at mile 15.3.

DRAINAGE AREA.--4,691 mi^2, of which 399 mi^2 is probably noncontributing.

PERIOD OF RECORD.--June 1983 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,234.45 ft above sea level.

REMARKS.--Records poor. Flow regulated since December 1943 by storage and diversion at Lake Altus 54.2 mi upstream (station 07302500). Diversions for irrigation of about 48,000 acres upstream from station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105	86	e410	e405	400	524	1340	3750	e1080	402	333	e320
2	102	86	e398	e390	380	632	1220	5600	e1010	349	330	e420
3	100	85	368	e610	336	698	833	7050	e980	314	830	e240
4	100	84	335	e760	313	923	820	4270	e960	302	1690	e230
5	97	84	308	e610	301	843	1150	2800	e880	294	1530	e220
6	95	83	300	e490	297	750	1130	e2200	e900	285	893	e201
7	92	83	283	e400	288	599	927	e1780	e820	279	567	e240
8	88	83	271	e350	281	565	829	3100	e740	765	e430	e330
9	87	84	860	e350	274	546	687	13200	e710	4590	e370	e295
10	86	85	1630	893	369	527	624	27900	600	1590	e335	e260
11	84	89	1050	620	433	515	609	32800	605	869	e300	e210
12	84	94	594	e500	417	504	604	15500	595	681	e285	e180
13	84	211	733	e435	422	494	599	7620	528	610	e270	e195
14	84	198	4230	e430	407	480	702	4750	466	654	e255	e230
15	82	160	4840	e410	1120	383	1950	3390	390	1380	e250	e204
16	82	135	2380	e400	1890	333	2990	2300	363	2050	e249	e185
17	81	118	959	e405	1640	325	1460	2300	344	1060	e240	e170
18	80	109	e840	e390	953	321	1140	2850	308	684	e221	e156
19	80	232	e760	e390	820	342	1020	e2300	287	586	e214	e155
20	81	e340	e720	e470	887	346	956	e1800	365	560	e210	e149
21	82	e660	e670	e610	916	759	938	e1400	629	530	e205	e145
22	82	e6200	e640	e720	895	814	920	e1230	557	502	e195	e144
23	82	e3500	e610	e560	883	912	906	e1950	497	478	e205	e144
24	82	e1450	e580	e505	960	1090	e775	2440	401	455	e211	e150
25	83	e5830	e560	e470	934	930	e745	3170	834	431	e190	e162
26	83	e2350	e550	e465	831	826	e740	e2240	760	406	e179	e150
27	83	e1550	e540	e460	660	734	e710	e1700	545	380	e172	e134
28	84	e950	e530	441	536	613	e705	e1280	412	361	e170	e129
29	88	e600	e520	432	---	578	2040	e1050	403	350	e164	e120
30	87	e460	e500	418	---	807	7430	e1000	462	344	e165	e119
31	86	---	e450	411	---	924	---	e1050	---	340	e240	---
TOTAL	2696	26079	28419	15200	18843	19637	37499	165770	18431	22881	11898	5987
MEAN	87.0	869	917	490	673	633	1250	5347	614	738	384	200
MAX	105	6200	4840	893	1890	1090	7430	32800	1080	4590	1690	420
MIN	80	83	271	350	274	321	599	1000	287	279	164	119
AC-FT	5350	51730	56370	30150	37380	38950	74380	328800	36560	45380	23600	11880

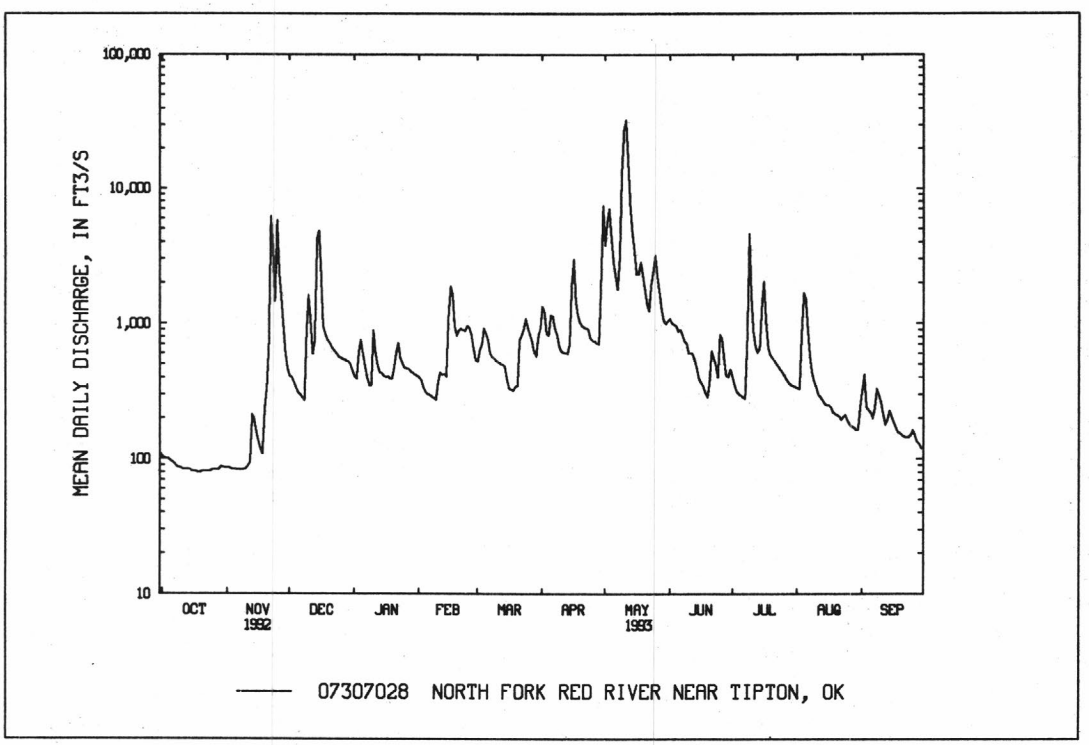
e Estimated

07307028 NORTH FORK RED RIVER NEAR TIPTON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1014	469	395	283	337	688	462	1487	1595	324	206	533
MAX	5784	2276	1287	742	1500	2401	1250	5347	3435	738	384	1740
(WY)	1987	1987	1992	1987	1987	1987	1993	1993	1989	1993	1993	1986
MIN	15.1	30.8	84.6	68.2	71.9	54.8	49.3	62.6	118	49.3	39.5	13.5
(WY)	1985	1985	1986	1986	1986	1986	1986	1984	1984	1984	1985	1984

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1984-93	
ANNUAL TOTAL	186750		373340			
ANNUAL MEAN	510		1023		650	
HIGHEST ANNUAL MEAN					1987	1987
LOWEST ANNUAL MEAN					156	1985
HIGHEST DAILY MEAN	6200	Nov 22	32800	May 11	39100	May 30 1987
LOWEST DAILY MEAN	80	Oct 18	80	Oct 18-19	3.7	Sep 7 1985
ANNUAL SEVEN-DAY MINIMUM	81	Oct 15	81	Oct 15	4.7	Sep 6 1985
INSTANTANEOUS PEAK FLOW			51200	May 10	57200	Oct 5 1986
INSTANTANEOUS PEAK STAGE			19.18	May 10	19.18	May 10 1993
ANNUAL RUNOFF (AC-FT)	370400		740500		471300	
10 PERCENT EXCEEDS	953		1840		1240	
50 PERCENT EXCEEDS	298		470		175	
90 PERCENT EXCEEDS	93		93		53	



07308500 RED RIVER NEAR BURKBURNETT, TX

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Hydrologic Unit 11130102, on left bank at downstream side of 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.--July 1924 to August 1925 (monthly discharge only), December 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 952.57 ft above sea level. July 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.

REMARKS.--No estimated daily discharges. Records fair. There are many small diversions upstream from station for irrigation, but total amounts are unknown.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 3, 1957, reached a stage of 13.54 ft, from levels to floodmarks. According to local residents, higher stages occurred in 1891 and June 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)
Nov. 22	1400	17,100	9.46	May 1	0200	10,300	8.54
Dec. 15	0400	12,700	8.99	May 3	0200	19,500	9.39
Feb. 16	0300	12,500	8.97	May 12	1230	55,000	11.57
Mar. 30	1600	19,600	9.72	July 10	0530	9,960	7.83
Apr. 29	1500	13,000	8.82	July 17	0600	11,600	8.09

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	245	245	1500	1490	1120	3760	3280	8500	3120	912	483	470
2	252	249	1310	1380	1130	4760	2660	9790	2320	889	506	827
3	251	245	1170	1270	1110	2940	2490	15100	2100	745	588	790
4	248	249	998	1190	1070	2300	2540	9630	1950	672	796	615
5	247	254	912	1440	1010	2440	1920	4800	1890	620	2160	742
6	250	256	880	1810	977	2620	1710	3610	1740	676	5750	581
7	242	252	919	1870	967	2380	2180	2800	1710	626	2780	437
8	237	268	897	1600	970	2190	1880	2630	1790	587	1730	392
9	225	279	1110	1520	974	2200	1560	17700	3310	1310	1230	392
10	218	289	1860	1420	1020	2130	1370	40200	1780	8370	1020	403
11	212	2230	2550	1500	1080	2040	1050	41600	1550	3720	850	564
12	217	3100	2170	1990	1500	1940	940	51100	1370	2590	712	675
13	220	1500	1930	1830	1670	1900	965	26200	1310	2070	618	528
14	213	911	4920	1640	1550	1830	3250	6440	1280	1790	611	524
15	203	786	10200	1520	5650	1790	6620	3530	1060	2200	599	416
16	189	632	5830	1430	11000	1770	4990	2570	904	5190	610	409
17	189	440	3710	1410	5330	1600	4330	2070	715	8280	611	385
18	195	383	2480	1340	3190	1500	2620	1760	633	3790	603	357
19	205	3740	1960	1300	2170	1510	2470	3160	576	2470	571	303
20	224	2790	1710	1740	1810	1520	2060	2510	623	1670	537	290
21	232	1410	1710	1860	1740	1580	1800	1850	3730	1300	520	284
22	251	13900	1800	2230	1860	1740	1680	1480	2950	1070	494	248
23	250	14000	1760	2480	1870	2400	1520	1500	1800	939	461	225
24	254	6130	1620	2220	1970	2530	1320	1550	1260	838	477	213
25	252	5230	1560	1810	2620	2760	1070	3380	993	761	451	195
26	246	7930	1590	1590	2630	3110	948	4890	3740	737	581	183
27	246	4980	2780	1500	2250	2880	843	3460	4170	689	482	257
28	257	3400	1630	1420	2180	2630	937	3030	2670	610	440	304
29	240	2670	1660	1280	---	2650	8350	2380	1440	564	421	240
30	244	1980	1730	1230	---	13500	8680	2010	962	548	402	203
31	258	---	1620	1170	---	6800	---	2580	---	508	415	---

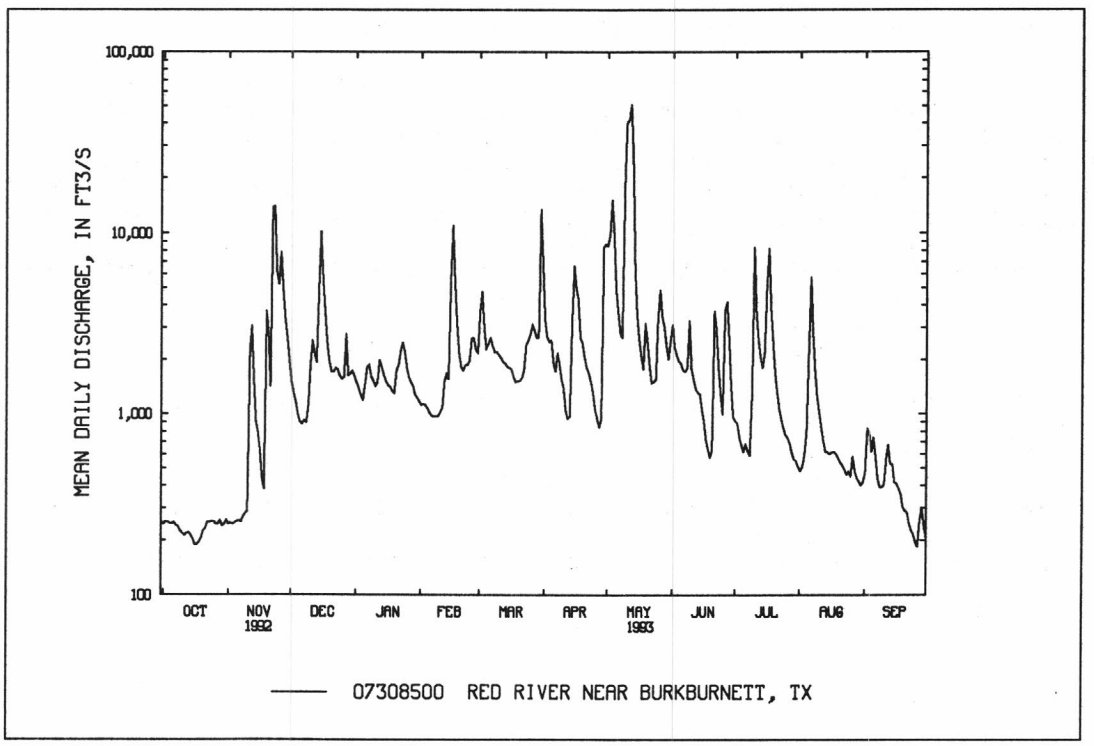
07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	7212	80728	68476	49480	62418	87700	78033	283810	55446	57741	28509	12452
MEAN	233	2691	2209	1596	2229	2829	2601	9155	1848	1863	920	415
MAX	258	14000	10200	2480	11000	13500	8680	51100	4170	8370	5750	827
MIN	189	245	880	1170	967	1500	843	1480	576	508	402	183
AC-FT	14310	160100	135800	98140	123800	174000	154800	562900	110000	114500	56550	24700

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1667	692	526	454	522	716	829	2385	3091	817	544	1213
MAX	14900	4960	4435	2040	3024	3552	5987	12470	13480	5947	2107	4244
(WY)	1987	1987	1992	1992	1987	1987	1973	1977	1991	1975	1979	1965
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

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1961-93	
ANNUAL TOTAL	631616		872005			
ANNUAL MEAN	1726		2389		1122	
HIGHEST ANNUAL MEAN					4424	1987
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	23000	Jun 8	51100	May 12	121000	Oct 22 1983
LOWEST DAILY MEAN	189	Oct 16	183	Sep 26	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	202	Oct 13	202	Oct 13	.00	Jul 19 1964
INSTANTANEOUS PEAK FLOW			55000	May 12	166000	Oct 21 1983
INSTANTANEOUS PEAK STAGE			11.57	May 12	16.90	Oct 21 1983
INSTANTANEOUS LOW FLOW			169	Sep 26	.00	Jul 19 1964
ANNUAL RUNOFF (AC-FT)	1253000		1730000		813000	
10 PERCENT EXCEEDS	3530		4230		2220	
50 PERCENT EXCEEDS	1190		1500		278	
90 PERCENT EXCEEDS	251		251		47	



07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1968 to September 1974. Chemical and biochemical analyses: October 1974 to current year. Pesticide analyses: October 1973 to September 1982.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1968 to September 1981.
WATER TEMPERATURE: July 1968 to September 1981.

INSTRUMENTATION.--From December 1968 to September 1979, specific conductance was continuously recorded at this station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 17,400 microsiemens July 30, 1972; minimum daily, 889 microsiemens Sept. 24, 1970.
WATER TEMPERATURE: Maximum daily, 35.5°C June 29, 1980; minimum daily, 0.0°C on many days during winter months.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
NOV												
18...	0930	336	5600	8.4	15.0	35	9.7	101	1.5	>600	870	1100
MAR												
17...	0915	1580	5890	8.2	8.0	36	13.5	119	1.0	K16	K34	1300
MAY												
12...	1010	54500	1060	8.0	17.0	1100	8.7	93	1.6	2000	3000	270
JUL												
21...	0920	1320	4090	8.3	27.0	270	9.6	126	0.8	74	400	1000
AUG												
05...	0920	2530	4680	7.8	26.0	160	8.0	103	3.5	K280	4500	1100

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	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)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	ALKA-LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV												
18...	970	300	94	830	11	1.9	12	187	173	170	970	1300
MAR												
17...	1100	310	120	830	10	7.9	0	250	205	200	1100	1200
MAY												
12...	180	78	19	99	3	6.1	0	119	98	97	200	150
JUL												
21...	870	290	67	540	7	8.3	0	158	130	130	810	820
AUG												
05...	970	270	93	660	9	8.0	0	108	88	89	950	920

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (006608)
NOV												
18...	0.60	7.7	3310	3620	0.860	0.870	0.030	0.040	0.910	0.910	0.030	0.020
MAR												
17...	0.40	8.9	3980	3710	1.29	1.29	--	0.010	1.30	1.30	--	0.020
MAY												
12...	0.30	9.2	662	622	0.220	--	--	<0.010	0.220	0.220	--	0.080
JUL												
21...	0.40	12	2770	2630	0.850	--	--	<0.010	0.850	0.850	--	0.030
AUG												
05...	0.40	8.4	3200	2970	--	--	--	<0.010	--	<0.050	--	0.040

DATE	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)	PHOSPHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)
NOV											
18...	0.87	0.90	0.150	0.020	0.020	0.050	0.06	105	95	76	20
MAR											
17...	0.68	0.70	0.080	<0.010	<0.010	--	--	362	1540	28	<10
MAY											
12...	0.32	0.40	0.050	0.040	0.030	--	0.09	38400	5650000	5	40
JUL											
21...	1.3	1.3	0.480	0.070	0.040	--	0.12	363	1290	97	--
AUG											
05...	1.6	1.6	0.240	0.020	<0.010	--	--	506	3460	99	<10

DATE	BARIUM, DISSOLVED (UG/L AS BA) (01005)	COBALT, DISSOLVED (UG/L AS CO) (01035)	IRON, DISSOLVED (UG/L AS FE) (01046)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)
NOV											
18...	100	<1	<10	60	10	3	2	4	<1.0	4000	38
MAR											
17...	200	<1	40	80	20	3	<1	<1	<1.0	4300	37
MAY											
12...	140	<3	21	13	7	<10	2	<1	<1.0	760	<6
JUL											
21...	--	--	--	--	--	--	--	--	--	--	--
AUG											
05...	200	<1	<10	60	10	2	<1	4	<1.0	3600	30

07311000 EAST CACHE CREEK NEAR WALTERS, OK

LOCATION.--Lat 34°21'44", long 98°16'56", on south line of SE 1/4 SE 1/4 sec.19, T.2 S., R.10 W., Cotton County, Hydrologic Unit 11130202, at right bank on downstream side of bridge on State Highway 53, 1.8 mi east of Walters, 12.2 mi upstream from West Cache Creek, and at mile 19.7.

DRAINAGE AREA.--675 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1938 to December 1963; October 1969 to current year. Prior to October 1969, published as Cache Creek near Walters.

GAGE.--Water-stage recorder. Datum of gage is 938.2 ft above sea level (Oklahoma State Highway Department). Prior to Jan. 8, 1939, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow partly regulated by Lake Lawtonka, capacity, 42,300 acre-ft on Medicine Creek prior to late 1953, and 63,000 acre-ft thereafter by Lake Thomas, capacity 8,300 acre-ft on Little Medicine Creek; and since March 1961 by Lake Ellsworth, capacity 94,500 acre-ft on East Cache Creek. Low flow sustained by sewage effluent from cities of Lawton and Walters.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1906 reached an approximate stage of 29.7 ft, information from local residents.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e25	10	392	895	613	1360	655	2580	622	185	e21	e13
2	e22	9.6	424	883	602	2120	499	1770	588	122	e24	e19
3	e16	9.5	391	777	617	817	e400	3370	573	97	e37	e50
4	e14	9.5	159	307	623	502	e340	2510	557	86	44	177
5	e12	9.5	101	234	621	758	e300	1130	544	83	46	164
6	e11	9.5	105	563	614	756	e470	897	524	77	e36	166
7	e9.8	11	110	598	559	886	702	934	355	74	e31	170
8	e11	10	96	593	239	891	532	1010	252	71	e27	182
9	e13	9.5	844	667	171	873	477	4070	258	67	e24	141
10	9.5	9.5	2790	839	162	772	570	9950	530	62	e22	70
11	9.5	2640	1750	598	198	507	591	11400	1010	53	e21	63
12	9.6	3170	495	486	189	806	332	7570	330	53	e20	60
13	9.5	158	1270	456	317	788	164	2100	212	57	e19	61
14	9.5	55	8100	364	313	671	1450	1230	176	69	e17	78
15	9.5	38	9790	303	3830	631	5530	1040	159	81	e16	145
16	9.4	36	5860	218	6990	545	4430	1070	146	269	e15	98
17	9.4	38	1810	171	2080	232	1410	1040	140	118	e14	59
18	9.5	41	918	150	764	183	598	1000	135	61	e13	48
19	9.8	1770	756	159	603	187	560	961	112	55	e14	43
20	10	3290	680	1240	698	687	752	770	116	51	e17	70
21	11	593	801	1200	787	481	750	836	1250	49	e21	170
22	e25	2330	642	949	887	362	734	818	868	48	e26	57
23	e24	1700	610	575	873	971	614	798	608	47	e32	44
24	e15	1130	604	521	918	900	597	2030	571	42	e40	40
25	11	1210	660	562	918	825	582	1940	550	e37	48	59
26	10	1840	692	529	509	771	356	911	1030	e33	e36	104
27	9.9	659	825	642	413	761	172	814	755	e30	e30	68
28	10	329	665	660	704	739	140	777	648	e27	e24	e38
29	10	579	676	641	---	578	160	760	612	e25	e20	e32
30	32	610	818	653	---	2470	2010	761	495	e23	e17	e23
31	13	---	816	637	---	1730	---	777	---	e22	e14	---
TOTAL	409.9	22313.6	44650	18070	26812	25560	26877	67624	14726	2174	786	2512
MEAN	13.2	744	1440	583	958	825	896	2181	491	70.1	25.4	83.7
MAX	32	3290	9790	1240	6990	2470	5530	11400	1250	269	48	182
MIN	9.4	9.5	96	150	162	183	140	760	112	22	13	13
AC-FT	813	44260	88560	35840	53180	50700	53310	134100	29210	4310	1560	4980

e Estimated

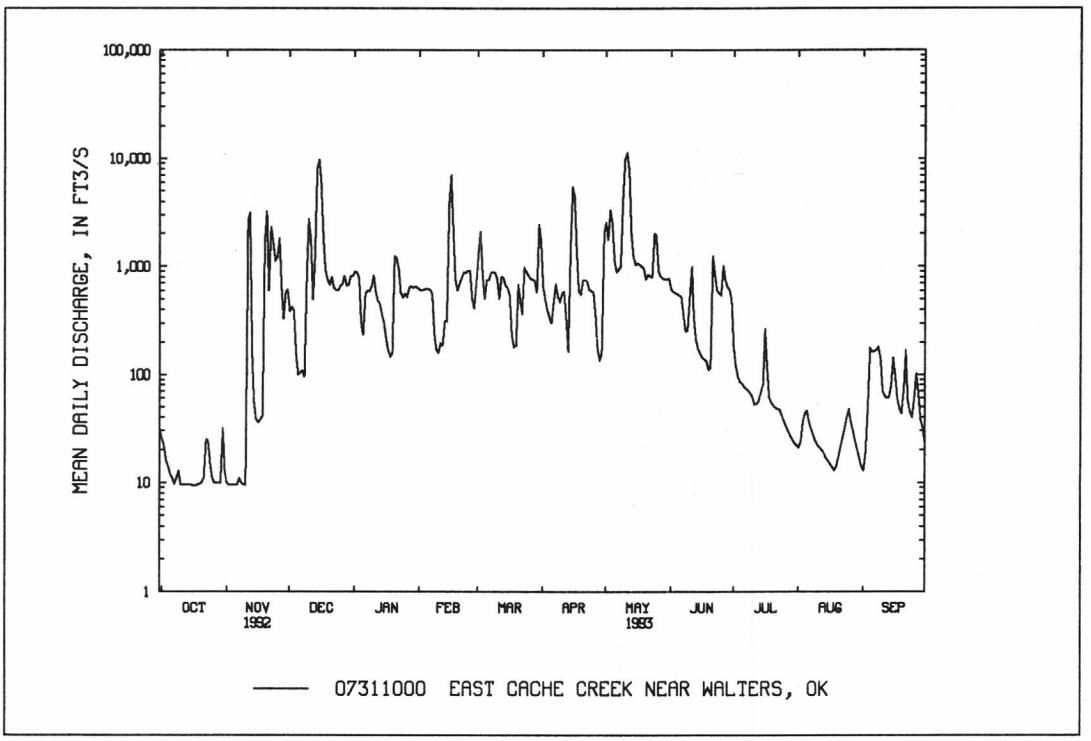
07311000 EAST CACHE CREEK NEAR WALTERS, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	249	106	139	94.2	142	237	230	609	462	102	55.3	146
MAX	2738	898	1796	640	1356	1538	1243	2654	2619	483	285	1637
(WY)	1984	1987	1992	1987	1987	1990	1990	1987	1962	1975	1971	1986
MIN	.000	.15	.15	.63	2.20	2.09	7.81	5.13	12.6	9.25	3.75	.000
(WY)	1940	1940	1940	1940	1940	1940	1939	1939	1939	1954	1954	1939

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1938-93	
ANNUAL TOTAL	224703.5		252514.5			
ANNUAL MEAN	614		692		216	
HIGHEST ANNUAL MEAN					911	1987
LOWEST ANNUAL MEAN					12.6	1939
HIGHEST DAILY MEAN	9790	Dec 15	11400	May 11	34600	Oct 21 1983
LOWEST DAILY MEAN	9.4	Oct 16	9.4	Oct 16	.00	[a]Jul 24 1939
ANNUAL SEVEN-DAY MINIMUM	9.5	Oct 11	9.5	Oct 11	.00	Aug 1 1939
INSTANTANEOUS PEAK FLOW			11600	May 11	50900	Oct 21 1983
INSTANTANEOUS PEAK STAGE			27.53	May 11	30.66	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	445700		500900		156500	
10 PERCENT EXCEEDS	1220		1310		397	
50 PERCENT EXCEEDS	246		362		34	
90 PERCENT EXCEEDS	20		14		10	

[a]No flow at times in 1939-40.



07311000 EAST CACHE CREEK NEAR WALTERS, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1947, 1948, 1951-55, 1958-63, October 1969 to June 1993 (discontinued).

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1951 to September 1953, October 1969 to March 1977.
WATER TEMPERATURE: October 1951 to September 1953, October 1969 to March 1977.

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

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
DEC											
10...	1100	70.0	6.0	745	1028	1028	2780	20.82	269	11.2	8.0
10...	1110	90.0	6.0	745	1028	1028	2790	20.84	270	11.5	8.0
10...	1120	110	6.0	745	1028	1028	2790	20.86	268	11.6	8.0
10...	1130	130	6.0	745	1028	1028	2800	20.88	268	11.5	8.0
10...	1140	150	6.0	745	1028	1028	2800	20.90	268	11.6	8.1
10...	1150	170	5.5	745	1028	1028	2810	20.92	268	11.6	8.1
10...	1200	190	5.5	745	1028	1028	2820	20.94	268	11.6	8.1
JUN											
03...	1300	2.00	24.0	730	1028	1028	571	10.51	612	7.0	8.0
03...	1302	4.00	24.0	730	1028	1028	571	10.51	612	7.0	8.0
03...	1304	8.00	24.0	730	1028	1028	571	10.51	613	7.0	8.0
03...	1306	12.0	24.0	730	1028	1028	571	10.51	613	7.0	8.0
03...	1308	16.0	24.0	730	1028	1028	571	10.51	613	7.0	8.0
03...	1310	20.0	24.0	730	1028	1028	571	10.51	613	7.0	8.0
03...	1312	24.0	24.0	730	1028	1028	571	10.51	613	7.0	8.0
03...	1314	28.0	24.0	730	1028	1028	571	10.51	614	7.0	8.0
03...	1316	32.0	24.0	730	1028	1028	571	10.51	613	7.0	8.0
03...	1318	36.0	24.0	730	1028	1028	571	10.51	613	7.0	8.0
03...	1320	40.0	24.0	730	1028	1028	571	10.51	613	7.0	8.0

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT											
07...	1030	1028	80020	33	948	8.0	20.0	18.0	740	7.1	78
DEC											
10...	1030	1028	80020	2760	278	7.8	11.5	6.0	745	11.6	95
FEB											
03...	1045	1028	80020	617	639	8.2	11.0	7.0	745	12.2	103
MAR											
31...	1430	1028	80020	1640	378	7.9	20.5	15.5	730	8.7	91
JUN											
03...	1245	1028	80020	571	613	7.7	28.0	24.0	730	7.0	87

07311000 EAST CACHE CREEK NEAR WALTERS, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	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)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)
OCT										
07...	280	37	83	18	92	41	2	5.7	298	0
DEC										
10...	85	17	25	5.4	19	32	0.9	3.7	82	0
FEB										
03...	230	53	65	16	37	26	1	4.2	213	0
MAR										
31...	130	8	38	7.6	31	34	1	3.5	144	0
JUN										
03...	230	59	68	15	40	27	1	4.0	210	0

DATE	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)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)
OCT										
07...	244	87	82	0.60	574	548	0.78	51.1	7.60	7.60
DEC										
10...	67	27	14	0.20	168	139	0.23	1250	1.00	1.00
FEB										
03...	175	100	31	0.20	386	364	0.52	643	1.30	1.30
MAR										
31...	118	47	27	0.20	256	227	0.35	1160	0.380	0.380
JUN										
03...	172	97	31	0.30	387	364	0.53	597	1.30	1.30

07311200 BLUE BEAVER CREEK NEAR CACHE, OK

(Hydrologic benchmark station)

LOCATION.--Lat 34°37'24", long 98°33'48", in NE 1/4 NE 1/4 sec.28, T.2 N., R.13 W., Comanche County, Hydrologic Unit 11130203, on downstream side of right bank pier on old U.S. Highway 62, 3,000 ft upstream from St. Louis-San Francisco Railway Co. bridge, 4.0 mi east of Cache, and at mile 12.0.

DRAINAGE AREA.--24.6 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1964 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,215.26 ft above sea level.

REMARKS.--Records fair. Minor regulation by Lake Rush, Lake Jed Johnson, and Lake Ketch, combined surface-area 132 acres.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since about 1907, that of Aug. 28, 1977, according to local resident.

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)
Dec. 13	1445	966	10.67	June 20	0200	829	10.43
Mar. 30	0100	1,730	11.65	June 25	0345	783	10.34
May 9	0900	1,330	11.17				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.20	.59	9.4	11	12	77	51	18	7.6	8.2	.04	.00
2	.24	.59	8.5	9.6	12	67	39	97	6.8	7.1	.07	.00
3	.24	.59	7.3	9.5	11	46	34	69	5.7	6.1	.24	.00
4	.22	.59	6.2	9.4	11	37	41	39	4.9	5.1	.16	.00
5	.22	.68	6.3	9.5	10	32	34	31	4.5	4.5	.21	.00
6	.27	.74	6.1	9.0	10	29	31	45	4.3	3.9	.24	.00
7	.31	.74	5.2	8.6	9.4	27	30	38	4.2	3.1	.24	.00
8	.26	.74	4.6	8.7	9.2	25	27	63	4.2	2.5	.29	.00
9	.24	.74	57	35	8.7	23	23	550	3.8	2.1	.26	.00
10	.25	.74	39	34	12	23	20	144	3.7	1.6	.21	.00
11	.24	.85	24	27	13	20	18	87	3.2	1.3	.13	.00
12	.25	.74	20	26	13	17	16	57	2.9	1.1	.00	.00
13	.27	.74	378	22	11	17	15	41	2.5	1.9	.00	.00
14	.24	.74	380	19	10	16	103	31	2.1	2.6	.00	.00
15	.24	.74	106	19	220	15	105	24	2.0	2.7	.00	.00
16	.28	.74	56	18	102	14	56	21	1.7	1.9	.00	.00
17	.41	.74	40	16	55	14	40	17	1.6	1.3	.00	.00
18	.42	.96	32	15	39	15	33	15	1.3	1.1	.00	.00
19	.42	4.3	27	24	36	31	28	14	8.5	.92	.00	3.6
20	.42	1.0	23	47	33	47	24	12	172	.89	.00	1.7
21	.42	11	20	40	29	34	20	11	24	1.0	.00	.00
22	.42	31	18	31	25	42	18	9.6	14	1.0	.00	.00
23	.42	18	17	27	21	43	17	71	10	.79	.00	.00
24	.42	66	15	23	25	34	16	37	7.8	.69	.00	.07
25	.42	56	14	19	42	29	15	21	170	.51	.00	13
26	.42	28	13	18	31	25	14	15	42	.37	.00	3.5
27	.59	19	12	17	26	23	12	12	28	.30	.00	1.6
28	.81	15	11	16	32	21	13	11	17	.22	.00	.80
29	.66	13	11	15	---	46	29	9.3	12	.08	.00	.52
30	.59	11	11	14	---	479	21	8.6	9.6	.00	.00	.42
31	.59	---	10	12	---	87	---	8.2	---	.00	.00	---
TOTAL	11.40	286.29	1387.6	609.3	868.3	1455	943	1626.7	581.9	64.87	2.09	25.21
MEAN	.37	9.54	44.8	19.7	31.0	46.9	31.4	52.5	19.4	2.09	.067	.84
MAX	.81	66	380	47	220	479	105	550	172	8.2	.29	13
MIN	.20	.59	4.6	8.6	8.7	14	12	8.2	1.3	.00	.00	.00
AC-FT	23	568	2750	1210	1720	2890	1870	3230	1150	129	4.1	50

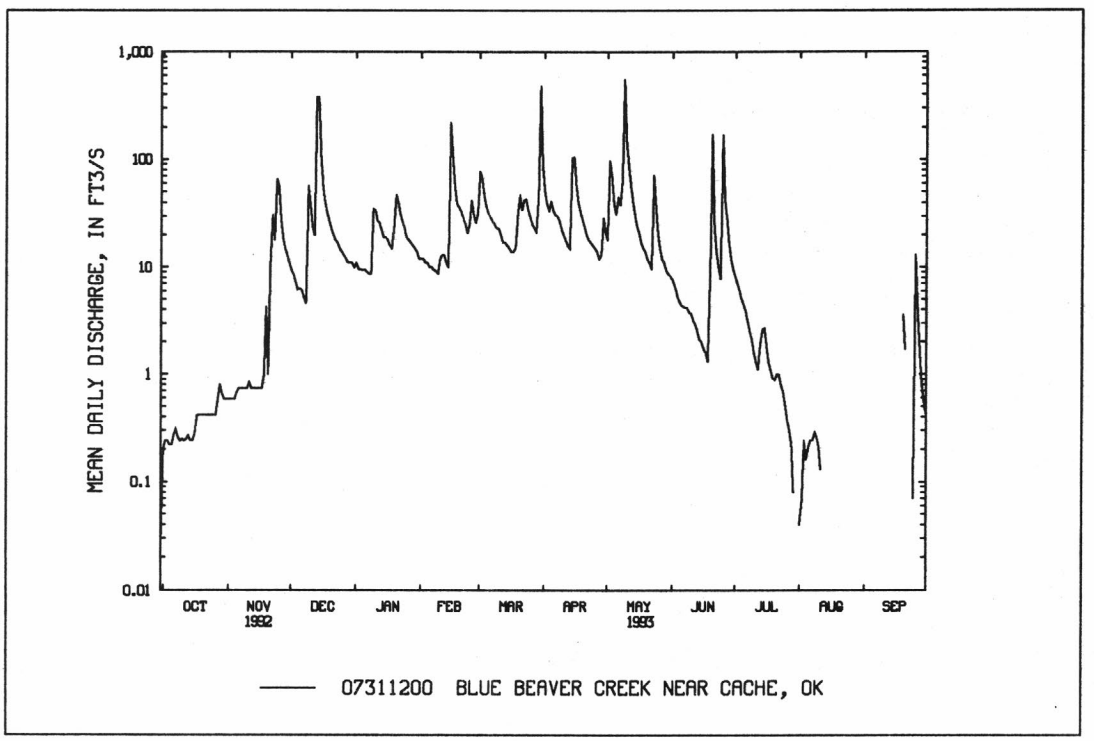
07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.7	8.02	9.86	8.30	12.6	21.8	18.6	37.5	21.2	1.39	1.19	6.00
MAX	193	61.1	108	53.2	67.1	95.0	88.0	176	125	12.6	27.5	50.9
(WY)	1987	1987	1992	1973	1987	1990	1990	1982	1989	1975	1977	1991
MIN	.000	.000	.000	.000	.000	.000	.017	.026	.012	.000	.000	.000
(WY)	1965	1966	1966	1966	1966	1966	1971	1971	1971	1964	1964	1964

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1964-93	
ANNUAL TOTAL	7645.23		7861.66			
ANNUAL MEAN	20.9		21.5		13.6	
HIGHEST ANNUAL MEAN					47.8	1987
LOWEST ANNUAL MEAN					.48	1966
HIGHEST DAILY MEAN	854	Apr 17	550	May 9	2600	Oct 20 1983
LOWEST DAILY MEAN	.00	at times	.00	at times	.00	at times
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 22	.00	Aug 12	.00	Jul 1 1964
INSTANTANEOUS PEAK FLOW			1730	Mar 30	[a]13600	Oct 28 1977
INSTANTANEOUS PEAK STAGE			11.65	Mar 30	[b]18.02	Oct 28 1977
ANNUAL RUNOFF (AC-FT)	15160		15590		9870	
10 PERCENT EXCEEDS	33		42		25	
50 PERCENT EXCEEDS	7.1		9.6		.99	
90 PERCENT EXCEEDS	.25		.00		.00	

[a]From rating curve extended above 4,000 ft^3/s on basis of contracted opening.
[b]From high-water mark.



07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued
(Hydrologic benchmark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--November 1964 to current year.

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

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
JUN											
03...	0920	1.00	22.0	725	1028	1028	6.0	6.96	189	7.3	7.4
03...	0923	2.00	22.0	725	1028	1028	6.0	6.96	189	7.3	7.5
03...	0926	3.00	22.0	725	1028	1028	6.0	6.96	188	7.3	7.5
03...	0929	4.00	22.0	725	1028	1028	6.0	6.96	187	7.3	7.5
03...	0932	5.00	22.0	725	1028	1028	6.0	6.96	186	7.3	7.5
03...	0935	6.00	22.0	725	1028	1028	6.0	6.96	186	7.3	7.4
03...	0938	7.00	22.0	725	1028	1028	6.0	6.96	186	7.3	7.5
03...	0941	8.00	22.0	725	1028	1028	6.0	6.96	186	7.3	7.5
03...	0944	9.00	22.0	725	1028	1028	6.0	6.96	186	7.3	7.5
03...	0947	10.0	22.0	725	1028	1028	6.0	6.96	186	7.3	7.4
03...	0950	11.0	22.0	725	1028	1028	6.0	6.96	186	7.3	7.4
03...	0953	12.0	22.0	725	1028	1028	6.0	6.96	186	7.3	7.5
03...	0956	13.0	22.0	725	1028	1028	6.0	6.96	186	7.3	7.5
03...	0959	14.0	22.0	725	1028	1028	6.0	6.96	186	7.3	7.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT												
06...	1045	1028	80020	0.27	294	7.8	22.0	17.0	6.0	740	8.6	92
FEB												
02...	1015	1028	80020	11	135	7.6	3.5	8.5	8.0	735	12.0	106
JUN												
03...	0945	1028	80020	6.0	186	7.3	22.0	22.0	3.2	725	7.3	88
JUL												
26...	1100	1028	80020	0.42	264	7.9	33.0	29.5	1.3	727	7.1	98

07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)
OCT											
06...	510	360	97	0	28	6.6	21	32	0.9	1.7	146
FEB											
02...	32	63	42	0	12	3.0	11	35	0.7	1.0	57
JUN											
03...	270	320	67	0	19	4.6	12	28	0.6	1.3	92
JUL											
26...	93	64	89	0	26	5.9	18	30	0.8	1.6	122

DATE	CARBONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	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)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)
OCT											
06...	0	120	14	12	0.40	15	173	171	0.24	0.13	<0.010
FEB											
02...	0	47	12	5.9	0.30	12	84	85	0.11	2.49	--
JUN											
03...	0	75	11	6.5	0.30	13	109	113	0.15	1.77	--
JUL											
26...	0	100	13	8.9	0.40	18	162	152	0.22	0.18	--

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)
OCT											
06...	<0.010	<0.050	<0.050	<0.010	<0.010	--	0.20	0.20	0.20	0.020	0.020
FEB											
02...	<0.010	--	<0.050	--	0.010	0.01	0.19	0.20	0.20	0.020	<0.010
JUN											
03...	<0.010	--	<0.050	--	0.020	0.03	--	<0.20	--	0.020	0.020
JUL											
26...	<0.010	--	<0.050	--	0.030	0.04	0.17	0.20	0.20	0.020	<0.010

07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT 06...	<0.010	<0.010	<10	78	<3	25	<4	46	<10	<1	<1
FEB 02...	--	<0.010	20	40	<3	22	<4	11	<10	<1	<1
JUN 03...	--	<0.010	<10	64	<3	24	<4	20	<10	<1	<1
JUL 26...	--	<0.010	20	71	<3	49	<4	12	<10	<1	<1

DATE	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L) (75986)	ALPHA COUNT, 2 SIGMA WAT DIS AS TH-230 (PCI/L) (75987)	ALPHA, 2 SIGMA SED SUS TOT DRY AS TH-230 (PCI/L) (76004)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	BETA, 2 SIGMA WATER, DISS, AS CS-137 (PCI/L) (75989)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)
OCT 06...	<1.0	120	<6	--	--	--	--	--	--	--	--
FEB 02...	<1.0	52	<6	<0.6	0.7	0.35	0.27	0.49	1.1	0.59	0.8
JUN 03...	<1.0	80	<6	0.6	<0.6	0.68	0.49	0.27	1.9	0.77	0.6
JUL 26...	<1.0	110	<6	<0.6	<0.6	0.84	0.59	0.35	3.3	1.1	0.7

DATE	GROSS BETA, DIS-SOLVED (PCI/L AS SR/ YT-90) (80050)	BETA, 2 SIGMA WATER, DISS, AS SR90 /Y90 (PCI/L (75988)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/ YT-90) (80060)	BETA, 2 SIGMA SED, SUSP, TOT DRY SR90Y90 (PCI/L) (76005)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	RA-226 2 SIGMA WATER, DISS, (PCI/L) (76001)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L) (75990)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 06...	--	--	--	--	--	--	--	--	21	0.02	79
FEB 02...	0.9	0.50	0.8	0.58	0.03	0.010	0.09	<1.0	10	0.30	96
JUN 03...	1.6	0.63	<0.6	0.48	0.10	0.020	0.12	<1.0	13	0.21	55
JUL 26...	2.5	0.71	0.7	0.55	0.07	0.020	0.33	<1.0	26	0.03	76

Old gage, Council Creek at Stillwater, Oklahoma

07311500 DEEP RED RUN NEAR RANDLETT, OK

LOCATION.--Lat 34°13'15", long 98°27'10", in SW 1/4 SW 1/4 sec.10, T.4 S., R.12 W., Cotton County, Hydrologic Unit 11130203, near right bank on downstream side of pier of bridge on U.S. Highway 277, 2.8 mi north of Randlett, and at mile 4.8.

DRAINAGE AREA.--617 mi^2.

PERIOD OF RECORD.--October 1949 to current year.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1631: 1956. WSP 1920: 1951.

GAGE.--Water-stage recorder and sharp-crested weir. Datum of gage is 924.49 ft above sea level (Oklahoma State Highway Department). Prior to Nov. 10, 1949, nonrecording gage at same site and datum.

REMARKS.--Records poor. Some regulation by numerous flood-retarding structures.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage somewhat exceeding 27 ft, from information provided by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Nov. 23	1245	6,150	23.44	Apr. 15	0345	4,750	22.86
Dec. 14	1500	6,890	23.64	May 3	1530	3,340	21.82
Feb. 18	0200	2,250	19.74	May 10	0100	7,510	23.80
Mar. 2	0830	2,480	20.34	June 22	0830	4,010	22.46

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.7	3.9	e112	55	54	781	397	465	e97	e218	e8.3	e7.4
2	e2.6	2.9	e100	53	54	2340	179	782	e95	e195	e7.7	e6.9
3	e2.6	2.7	e86	50	54	1380	113	3050	e94	e160	e7.0	e6.4
4	e2.5	3.3	e75	49	51	296	109	3090	e98	e59	e7.1	e6.0
5	e2.4	3.4	e74	49	50	179	176	861	e131	e38	e8.0	e5.7
6	e2.3	2.9	e70	49	50	130	88	413	e179	e32	e12	e5.5
7	e2.2	2.7	e60	47	51	101	67	e370	e255	e29	e17	e5.4
8	e2.1	2.6	56	47	51	83	55	409	e380	e28	e16	e5.2
9	e2.0	2.7	211	53	49	70	44	3450	e165	e26	e12	e5.1
10	2.2	3.1	474	80	46	60	44	6450	e90	e24	e11	e5.0
11	2.2	303	406	94	46	50	45	5790	e70	e23	e9.2	e6.2
12	2.1	482	212	117	72	39	46	2180	e57	e22	e8.0	e8.1
13	2.3	471	503	110	62	32	46	515	e51	e20	e7.2	9.2
14	2.2	87	5200	78	52	30	1240	414	e46	e18	e6.9	16
15	2.5	36	5070	65	435	28	4290	e310	e42	e18	e6.6	12
16	2.3	26	3670	61	474	23	3000	e245	e38	e19	e6.2	11
17	2.3	19	1220	58	474	21	627	e200	e36	e23	e5.8	e7.2
18	2.7	14	402	56	932	20	e300	e165	e150	e27	e5.4	e5.2
19	2.3	915	266	61	266	20	e265	e145	303	e87	e4.9	e4.1
20	2.4	3690	192	631	183	21	e220	e135	413	e46	e4.5	e3.8
21	2.6	4340	150	794	151	22	e190	e128	1960	e21	e4.2	e4.5
22	2.6	3510	123	329	116	25	e175	e133	3110	e18	e5.5	e9.0
23	6.2	5650	105	209	88	34	e167	e185	565	e17	e7.0	e7.8
24	6.0	3820	88	157	78	42	e158	e315	416	e17	8.7	e4.3
25	3.3	1620	77	120	183	45	e148	e260	414	e16	11	e3.2
26	2.5	e280	68	93	211	45	e133	e152	1100	e15	11	e2.8
27	2.1	e225	65	79	126	47	e123	e141	1020	e14	10	e3.4
28	2.2	e175	61	71	81	49	e165	e130	422	e12	e9.4	e10
29	2.1	e150	60	66	---	54	e330	e120	e340	e11	e9.0	e4.6
30	2.1	e137	59	62	---	423	600	e111	e245	e9.3	e8.4	e3.1
31	2.5	---	57	58	---	427	---	e103	---	e8.8	e7.9	---
TOTAL	81.1	25980.2	19372	3901	4540	6917	13540	31217	12382	1271.1	262.9	194.1
MEAN	2.62	866	625	126	162	223	451	1007	413	41.0	8.48	6.47
MAX	6.2	5650	5200	794	932	2340	4290	6450	3110	218	17	16
MIN	2.0	2.6	56	47	46	20	44	103	36	8.8	4.2	2.8
AC-FT	161	51530	38420	7740	9010	13720	26860	61920	24560	2520	521	385

e Estimated

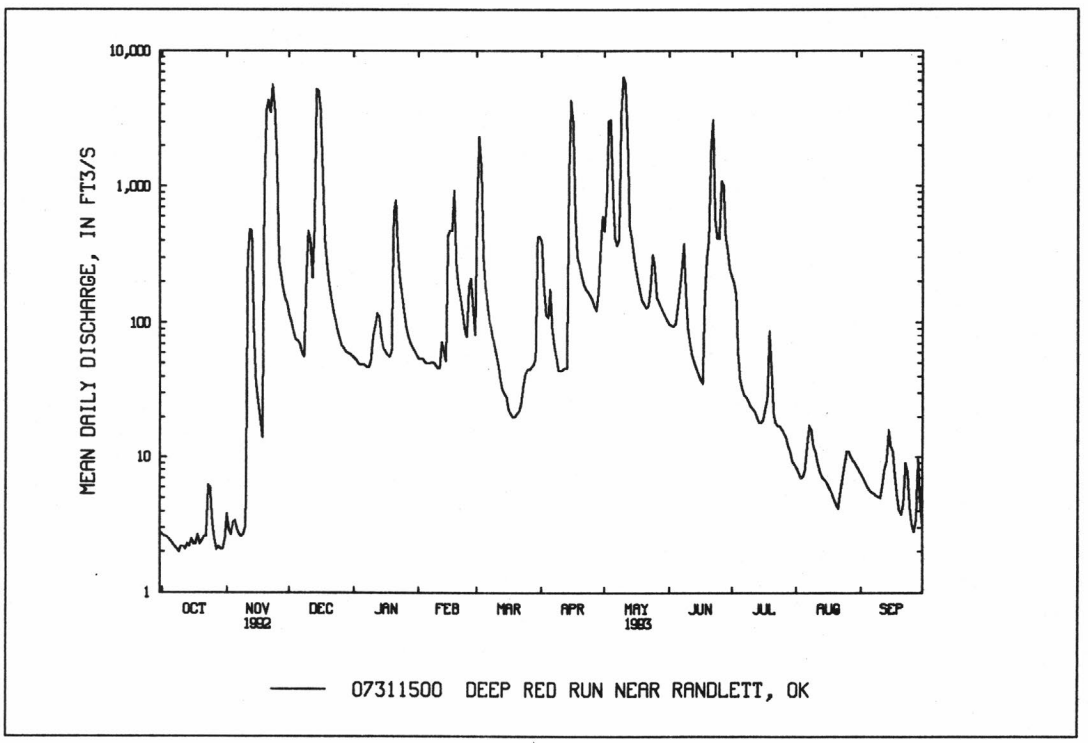
07311500 DEEP RED RUN NEAR RANDLETT, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	287	94.6	76.5	52.1	75.2	118	132	503	390	66.8	46.9	190
MAX	3345	994	1493	563	1020	1134	1398	2800	2163	795	506	1453
(WY)	1984	1987	1992	1985	1987	1990	1990	1987	1989	1991	1966	1969
MIN	.000	.000	.000	.000	.022	.10	.003	.061	.000	.000	.000	.000
(WY)	1953	1955	1955	1953	1981	1980	1955	1971	1966	1964	1952	1952

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1950-93	
ANNUAL TOTAL	157892.7		119658.4			
ANNUAL MEAN	431		328		170	
HIGHEST ANNUAL MEAN					904	1987
LOWEST ANNUAL MEAN					15.8	1953
HIGHEST DAILY MEAN	11500	Jun 9	6450	May 10	46300	Oct 20 1983
LOWEST DAILY MEAN	2.0	Oct 9	2.0	Oct 9	.00	Sep 28 1951
ANNUAL SEVEN-DAY MINIMUM	2.2	Oct 6	2.2	Oct 6	.00	Oct 3 1951
INSTANTANEOUS PEAK FLOW			7510	May 10	72300	Oct 20 1983
INSTANTANEOUS PEAK STAGE			23.80	May 10	[a]29.58	May 29 1987
ANNUAL RUNOFF (AC-FT)	313200		237300		122900	
10 PERCENT EXCEEDS	842		508		189	
50 PERCENT EXCEEDS	70		55		4.3	
90 PERCENT EXCEEDS	3.0		3.1		.00	

[a]Due to backwater from West Cache Creek.



07313400 WAURIKA LAKE NEAR WAURIKA, OK

LOCATION.--Lat 34°13'57", long 98°02'51", in SW 1/4 SW 1/4 sec.4, T.4 S., R.8 W., Jefferson County, Hydrologic Unit 11130208, 3,050 ft east of outlet works on Beaver Creek, 5.5 mi north of Waurika and at mile 27.0.

DRAINAGE AREA.--562 mi^2.

PERIOD OF RECORD.--August 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Aug. 26, 1977, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by an earth dam with a concrete outlet structure and emergency spillway. Storage began Aug. 1, 1977. Capacity 451,100 acre-ft at elevation 970.0 ft, crest of uncontrolled spillway and 191,200 acre-ft at elevation 951.4 ft, top of conservation pool. Dead storage, 4,370 acre-ft below elevation 910.0 ft. Reservoir is used for flood control, irrigation, water supply, water quality, fish and wildlife, and recreation. Revised capacity table, based on 1991 survey, used since Oct. 1, 1991. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 368,600 acre-ft, May 30, 1987, elevation, 964.14 ft; minimum since first major filling, 59,170 acre-ft, Dec. 4-5, 1978, elevation, 931.56 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 242,600 acre-ft, May 13, elevation, 956.22 ft; minimum, 176,800 acre-ft, Sept. 13, elevation, 950.04 ft.

Capacity table (elevation, in feet, and contents, in acre-ft):

949	167,200	959	276,300
951	186,100	961	303,100
953	206,800	963	333,400
956	240,000	965	365,700

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

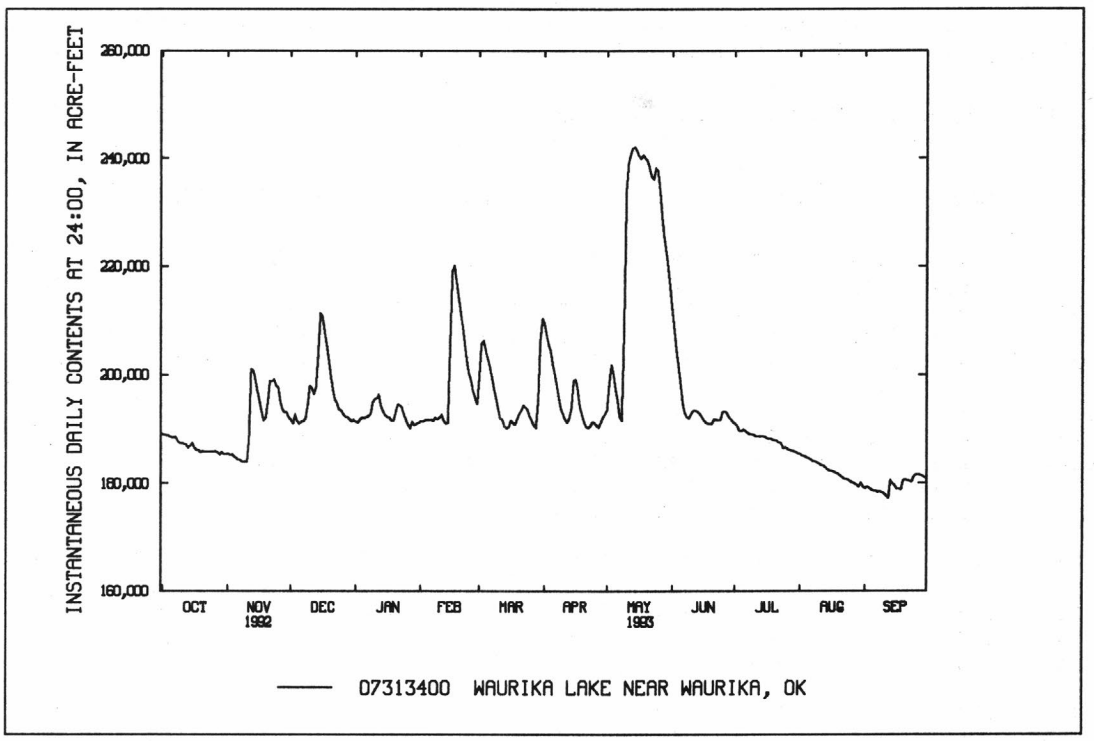
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189000	185500	191700	191300	191400	199800	209600	193500	211900	191000	185400	179100
2	188900	185200	191000	191200	191400	205700	207400	198500	208300	190600	185100	179300
3	188800	185300	192600	191800	191600	206300	205600	201900	204500	189700	185000	179100
4	188700	184900	191400	192100	191600	204800	204500	200200	201400	189600	184800	178800
5	188500	184600	191000	192000	191600	203000	202000	197300	198100	189900	184600	178600
6	188400	184300	191300	192200	191700	201400	200200	195100	194600	189600	184400	178600
7	188500	184200	191400	192400	191500	199400	197900	192200	192900	189300	184100	178400
8	187800	183900	192000	192700	192100	197400	195600	191600	192200	189000	184000	178500
9	187400	184000	194400	194900	191800	195500	193600	208100	192000	189000	183800	178300
10	187400	183900	197900	195500	192100	193700	192700	234100	192800	188900	183600	178100
11	187300	188100	197600	195600	192600	191900	191700	239100	193400	188700	183300	177700
12	187100	201000	196500	196300	191500	191700	191200	240800	193400	188700	183200	177300
13	186500	200800	197700	194200	191000	190500	192000	241900	193200	188600	182900	180500
14	186900	199300	203900	193200	191100	190100	193900	242100	192900	188700	182500	179900
15	187400	197100	211400	192500	205300	190400	198900	241400	192400	188600	182300	179600
16	186500	195300	211000	192200	219100	191600	199100	240400	191700	188400	182200	178900
17	186100	193300	208300	192100	220200	191100	197300	239900	191200	188200	182100	179000
18	186100	191600	205700	191500	217400	190800	194100	240600	191000	188200	181900	178800
19	185700	192100	203100	191500	214600	191800	192700	240000	190900	188000	181700	180500
20	185900	195000	199900	193200	211800	192800	191300	239600	191000	187900	181400	180600
21	185800	198800	197300	194500	209200	193400	190400	238100	191700	187800	181100	180500
22	185800	198700	195400	194300	205800	194300	190200	236500	191700	187500	180800	180400
23	185800	199100	194700	194000	202500	194000	190500	236100	191600	187400	180700	180200
24	185800	197900	193600	192700	200200	193500	191300	238100	191600	186400	180600	181200
25	185800	197600	193400	191700	199000	192300	191100	237700	193100	186600	180300	181500
26	185900	194900	192700	190700	196900	191500	190600	234200	193200	186300	180100	181600
27	185700	193600	192300	190200	195700	190600	190300	229300	193000	186100	179900	181500
28	185300	193000	192200	191300	194500	190300	191200	225500	192300	185900	179700	181300
29	185700	193000	191800	190700	---	195100	192200	222700	191800	185900	179300	181100
30	185400	192100	191400	190900	---	206500	192700	219600	191300	185700	180000	180800
31	185300	---	191700	191100	---	210500	---	215800	---	185500	179300	---

07313400 WAURIKA LAKE NEAR WAURIKA, OK--Continued

MAX	189000	201000	211400	196300	220200	210500	209600	242100	211900	191000	185400	181600
MIN	185300	183900	191000	190200	191000	190100	190200	191600	190900	185500	179300	177300
‡	950.91	951.59	951.95	951.49	951.83	953.35	951.65	953.84	951.51	950.93	950.30	950.46
‡‡	-3,900	+6,800	-400	-600	+3,400	+16,000	-17,800	+23,100	-24,500	-5,800	-6,200	+1,500

CAL YR 1992 MAX 247500 MIN 183900 ‡‡ -58,300
WTR YR 1993 MAX 242100 MIN 177300 ‡‡ -8,400

‡ELEVATION, IN FEET, AT END OF MONTH
‡‡CHANGE IN CONTENTS, IN ACRE-FEET



07313500 BEAVER CREEK NEAR WAURIKA, OK

LOCATION.--Lat 34°13'00", long 98°02'57", on north line of NW 1/4 NW 1/4 sec.16, T.4 S., R.8 W., Jefferson County, Hydrologic Unit 11130208, on left bank on downstream side of bridge on State Highway 5, 1.2 mi below Waurika Dam, 4.5 mi northwest of Waurika, 6.2 mi upstream from Cow Creek, and at mile 25.8.

DRAINAGE AREA.--563 mi^2.

PERIOD OF RECORD.--June 1953 to current year.

REVISED RECORDS.--WSP 1731: 1954 (M).

GAGE.--Water-stage recorder. Datum of gage is 874.17 ft, Oklahoma State Highway Department datum. Prior to Apr. 5, 1966, water-stage recorder at same site at datum 5.00 ft higher.

REMARKS.--Records fair. Flow regulated by Waurika Lake (07313400) 1.2 mi upstream beginning August 1977. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 18, 1951, reached a stage of 27.7 ft, present datum, from floodmark, discharge 65,300 ft^3/s by contracted-opening measurement of peak flow. A similar stage was reached prior to 1889, from information provided by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.2	e.50	370	27	23	554	414	390	1950	27	8.0	7.2
2	e3.0	e.40	372	26	23	173	1180	451	1940	27	8.0	7.2
3	e.30	e.35	184	25	173	839	1370	735	1980	27	8.1	7.2
4	e.27	e.30	23	24	292	1250	1360	1450	1820	27	8.2	7.2
5	e.25	e.28	23	24	210	1240	1400	1620	1550	27	8.2	7.2
6	e.25	e.28	22	24	24	1210	1390	1620	1560	20	7.7	7.2
7	e.24	e.27	22	24	24	1220	1370	1540	1310	7.6	7.2	7.2
8	.24	e.26	22	24	23	1240	1370	1280	902	7.4	7.4	7.2
9	e.24	e.26	160	24	249	1220	1120	1230	519	7.4	7.6	7.0
10	e.24	e.26	647	24	445	1200	659	34	327	7.3	7.6	7.0
11	e.24	e1.0	932	347	444	1010	660	26	31	7.2	7.4	6.9
12	e.25	215	948	799	441	660	577	25	170	7.2	7.4	6.8
13	e.25	893	915	803	434	294	345	24	288	10	7.4	9.3
14	e.24	1030	992	803	435	295	249	140	287	25	7.5	12
15	e.24	1050	1140	596	519	146	529	622	287	20	7.6	6.0
16	e.25	1070	1530	377	593	25	1220	795	287	8.6	7.6	6.0
17	e.25	1100	1810	376	1150	24	1570	479	287	8.5	7.6	6.1
18	e.25	1090	1820	376	1740	24	1560	23	198	8.4	7.6	6.1
19	e.25	1010	1780	379	1940	24	1480	205	27	8.4	7.6	6.2
20	e.25	909	1760	383	1920	24	934	351	27	8.2	7.6	7.2
21	e.26	694	1640	383	1850	24	467	619	27	8.2	7.6	7.2
22	e.25	703	1210	542	1850	151	164	1120	27	8.2	7.6	7.1
23	e.25	1010	732	722	1810	611	24	816	27	8.1	7.6	7.0
24	e.26	1470	442	723	1890	812	24	504	27	8.1	7.8	6.8
25	e.26	1480	380	726	1920	814	23	1510	27	8.1	7.7	7.0
26	e.25	1390	379	727	1510	631	216	1910	27	8.0	7.6	7.0
27	e.25	980	379	420	863	401	211	1940	26	8.1	7.4	6.7
28	e.25	370	380	25	866	400	22	2000	196	8.2	7.4	6.7
29	e.26	368	384	24	---	316	124	1990	336	8.2	7.2	6.7
30	e.26	369	386	24	---	840	389	1990	259	8.2	7.2	6.7
31	e.26	---	264	24	---	28	---	1960	---	8.1	7.2	---
TOTAL	17.51	17205.16	22048	9825	23661	17700	22421	29399	16726	385.7	235.6	213.1
MEAN	.56	574	711	317	845	571	747	948	558	12.4	7.60	7.10
MAX	7.2	1480	1820	803	1940	1250	1570	2000	1980	27	8.2	12
MIN	.24	.26	22	24	23	24	22	23	26	7.2	7.2	6.0
AC-FT	35	34130	43730	19490	46930	35110	44470	58310	33180	765	467	423

e Estimated

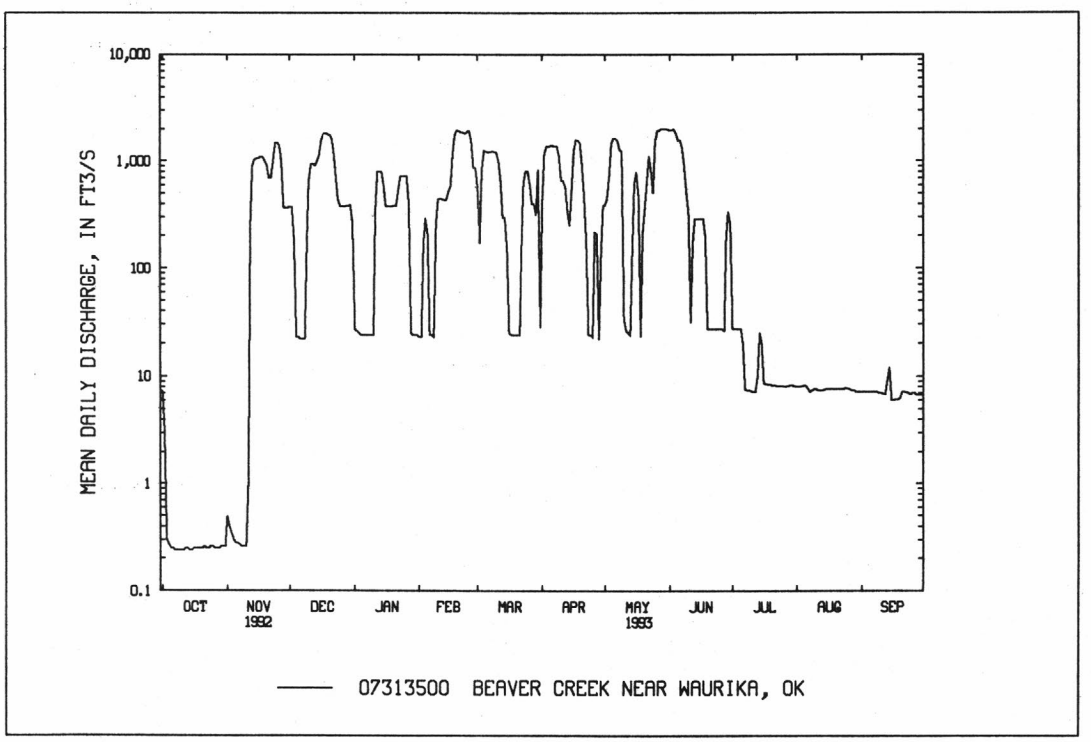
07313500 BEAVER CREEK NEAR WAURIKA, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	114	210	134	171	162	308	219	329	544	109	9.31	86.5
MAX	959	1639	711	830	845	1677	898	2123	2501	708	65.2	958
(WY)	1987	1984	1993	1992	1993	1985	1988	1990	1987	1987	1992	1991
MIN	.000	.000	.000	.000	.000	.014	.000	.000	.000	.000	.000	.000
(WY)	1979	1979	1979	1980	1979	1980	1980	1984	1984	1978	1978	1978

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1978-93	
ANNUAL TOTAL	156312.17		159837.07			
ANNUAL MEAN	427		438		[a]199	
HIGHEST ANNUAL MEAN					631	1987
LOWEST ANNUAL MEAN					.018	1979
HIGHEST DAILY MEAN	2330	Jan 8	2000	May 28	2690	Jun 9 1987
LOWEST DAILY MEAN	.24	Oct 7	.24	Oct 7	.00	at times
ANNUAL SEVEN-DAY MINIMUM	.24	Oct 5	.24	Oct 5	.00	Oct 1 1977
INSTANTANEOUS PEAK FLOW			2300	Mar 30	[b]2710	Jun 9 1987
INSTANTANEOUS PEAK STAGE			20.35	Mar 30	[c]23.04	Jun 9 1987
ANNUAL RUNOFF (AC-FT)	310000		317000		144400	
10 PERCENT EXCEEDS	1700		1460		722	
50 PERCENT EXCEEDS	28		31		1.1	
90 PERCENT EXCEEDS	.33		.33		.00	

[a]Prior to regulation, water years 1954-76, 107 ft^3/s.
[b]Maximum discharge for period of record 32,200 ft^3/s, May 20, 1955.
[c]Maximum gage height for period of record, 27.42 ft, present datum, May 20, 1955.



07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Texas, Hydrologic Unit 11130201, on left bank at downstream side of bridge abutment on U.S. Highway 81, 0.5 mi downstream from Chicago, Rock Island, and 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.--January 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.
REMARKS.--No estimated daily discharges. Records good. There are many small diversions upstream from station for irrigation, oil field operations, and municipal uses. Gage-height telemeter at station.
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.
PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 21,000 ft^3/s.

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Nov. 23	0200	33,700	16.47	Apr. 16	0600	29,700	15.59
Dec. 15	1500	33,600	16.46	May 3	0900	35,000	16.82
Feb. 16	2400	37,700	16.52	May 10	2300	84,100	21.14
Mar. 2	1400	27,300	15.31	May 13	0800	71.700	20.00
Mar. 31	0700	46,200	17.43				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	572	506	3560	2840	2290	10800	14600	12900	5630	3080	743	514
2	561	509	3070	2600	2200	26100	11200	16400	5880	2290	736	519
3	554	497	2890	2600	2120	21600	9950	28500	5390	1870	707	556
4	553	465	2600	2450	2200	15000	8610	23700	5090	1590	737	742
5	544	442	2230	2220	2380	10600	7900	17800	4730	1390	800	824
6	535	446	1940	1950	2310	9920	7200	10400	4450	1270	966	759
7	516	446	1750	2300	2020	9790	6450	7270	4370	1150	3400	874
8	505	445	1660	2920	1930	8110	5970	5970	4200	1100	3270	927
9	497	440	1730	2740	1790	6770	5610	38800	4200	1010	2440	836
10	484	451	3280	2580	1690	6230	4420	74500	5300	949	1800	706
11	464	447	7920	2850	2000	5840	3890	76600	6130	4920	1350	673
12	458	3760	7500	3410	2170	5160	3690	68000	5950	4080	1100	628
13	460	11500	5340	3780	2350	4730	3330	65100	4970	2860	914	747
14	462	6050	10400	4060	2850	4450	2800	30800	4310	2430	801	3310
15	459	3030	30500	3530	8770	4390	13700	22100	3900	2170	727	2980
16	435	2310	23700	2910	32000	4280	27700	15400	3330	2000	689	1920
17	427	2150	13700	2500	32100	4050	23800	12600	2930	2970	653	1060
18	427	2010	8690	2350	20600	3760	11500	10600	2720	6160	613	758
19	439	2000	6180	2300	11400	3440	6820	8820	2420	3910	605	602
20	452	7890	5360	2550	10200	3520	5610	8770	2040	2990	592	552
21	449	12400	5060	4730	9120	3620	4600	7390	2410	2310	570	580
22	442	18300	4670	6470	7250	4200	3930	6410	6190	1850	559	593
23	438	29800	4110	5050	6730	4420	3440	6720	8090	1570	548	586
24	446	20000	3560	4950	6640	5020	3080	7760	5100	1290	543	496
25	447	14100	3200	4350	7920	5870	2830	7150	3520	1090	547	445
26	438	14000	3020	3930	10600	5360	2640	9170	3510	964	540	470
27	437	15200	2970	3630	8100	4760	2550	10200	6090	900	532	566
28	446	7220	2930	3070	6780	4320	2310	7760	7120	867	610	431
29	434	4480	2840	2600	---	4160	2340	7490	4480	839	578	417
30	430	3730	2760	2470	---	20900	11200	6680	3880	816	530	412
31	491	---	2790	2360	---	39300	---	6270	---	771	522	---

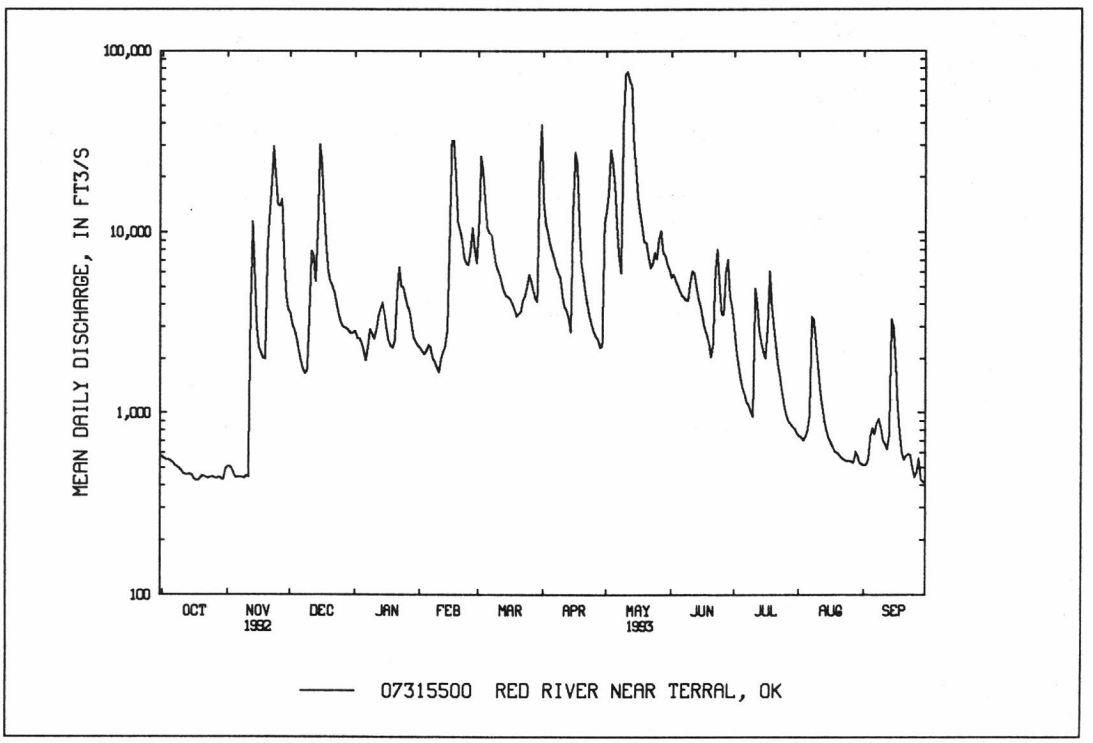
07315500 RED RIVER NEAR TERRAL, OK--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
TOTAL	14702	185024	181910	99050	208510	270470	223670	638030	138330	63456	29722	25483
MEAN	474	6167	5868	3195	7447	8725	7456	20580	4611	2047	959	849
MAX	572	29800	30500	6470	32100	39300	27700	76600	8090	6160	3400	3310
MIN	427	440	1660	1950	1690	3440	2310	5970	2040	771	522	412
AC-FT	29160	367000	360800	196500	413600	536500	443600	1266000	274400	125900	58950	50550

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3186	1508	1127	902	1258	1809	2519	6760	6071	1687	1110	2020
MAX	23900	9713	11810	5306	9320	12560	18080	43580	37460	8077	9267	9653
(WY)	1987	1987	1992	1992	1987	1990	1990	1957	1941	1950	1950	1986
MIN	108	102	91.2	76.5	136	66.1	142	134	517	158	155	109
(WY)	1953	1940	1939	1940	1953	1940	1971	1971	1966	1964	1970	1956

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1939-93	
ANNUAL TOTAL	1854921		2078357			
ANNUAL MEAN	5068		5694		2500	
HIGHEST ANNUAL MEAN					8925	1987
LOWEST ANNUAL MEAN					523	1953
HIGHEST DAILY MEAN	65500	Jun 9	76600	May 11	211000	May 30 1987
LOWEST DAILY MEAN	427	Oct 17	412	Sep 30	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	439	Oct 16	439	Oct 16	47	Mar 18 1940
INSTANTANEOUS PEAK FLOW			84100	May 10	225000	May 30 1987
INSTANTANEOUS PEAK STAGE			21.14	May 10	33.60	Oct 22 1983
INSTANTANEOUS LOW FLOW			412	Sep 30	43	Mar 15 1939
ANNUAL RUNOFF (AC-FT)	3679000		4122000		1811000	
10 PERCENT EXCEEDS	10900		11900		5390	
50 PERCENT EXCEEDS	3000		2970		572	
90 PERCENT EXCEEDS	529		497		170	



07315500 RED RIVER NEAR TERRAL, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: October 1967 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1967 to current year.

WATER TEMPERATURE: October 1967 to current year.

REMARKS.--Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and regression relationships between each chemical constituent and specific conductance. Regression equations developed for this station may be obtained from the Geological Survey District office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 13,000 microsiemens June 15, 1984; minimum daily, 255 microsiemens Jan. 1, 1985.

WATER TEMPERATURE: Maximum daily, 35.0°C Aug. 13, 16, 17, 1983; minimum daily, 0.0°C on many days during winter months.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum daily, 5,690 microsiemens Aug. 16; minimum daily, 740 microsiemens Nov. 22.

WATER TEMPERATURE: Maximum daily, 33.0°C July 29, Aug. 20, 21: minimum daily, 5.0°C Dec. 14, Feb. 16.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	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)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)
FEB 18...	1140	6780	1120	2.5	250	150	67	21	130

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (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)
FEB 18...	4	4.9	100	140	200	0.20	8.0	632

07315500 RED RIVER NEAR TERRAL, OK--Continued

MONTHLY AND ANNUAL MEANS AND LOADS FOR OCTOBER 1992 TO SEPTEMBER 1993

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.	1992	14702	4870	2900	115000	1100	43800	700	27700	850
NOV.	1992	185024	1470	801	400000	280	140600	200	97400	250
DEC.	1992	181910	1800	987	485000	350	171400	240	117900	300
JAN.	1993	99050	3610	2080	555000	770	205200	500	134300	620
FEB.	1993	208510	2030	1110	626000	390	221400	270	152400	340
MAR.	1993	270470	2150	1190	867000	420	308900	290	210900	360
APR.	1993	223670	1890	1030	623000	360	219200	250	151700	320
MAY	1993	638030	1280	683	1177000	230	404600	170	287600	210
JUNE	1993	138330	2140	1170	438000	410	154700	290	106600	360
JULY	1993	63456	3430	1970	337000	720	124200	480	81500	590
AUG.	1993	29722	4790	2850	229000	1100	87200	690	55100	830
SEPT	1993	25483	3010	1710	117000	620	42900	410	28400	510
TOTAL		2078357	**	**	5970000	**	2124000	**	1452000	**
WTD.AVG.		5694	1930	1060	**	380	**	260	**	320

07315500 RED RIVER NEAR TERRAL, OK--Continued

SPECIFIC CONDUCTANCE, US/CM AT 25 DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4410	4980	2330	2870	3900	2140	e1110	1950	2000	e1850	e4700	4450
2	4470	e5200	2550	3180	1970	1440	1200	1380	2100	2130	e4600	e4590
3	4600	e3000	2810	3170	e2320	1260	1470	1310	1880	e2690	4520	4760
4	e4620	810	3020	3060	e2670	1310	e1720	1310	e1980	e3250	4660	e3500
5	4640	e1900	e3380	3170	e3010	1650	1980	1270	e2100	3860	e4680	e3620
6	4640	e3000	3740	3850	3350	2090	1760	1500	2200	e3700	e4700	3820
7	4650	e4100	4100	4900	3880	1780	2040	1820	2120	3540	e3500	3620
8	4640	5030	4230	4990	3920	2200	2010	1880	2220	3560	e4600	4170
9	4670	5260	4190	4960	3910	2360	e2060	810	e2370	3600	5330	3270
10	4750	5440	3440	4600	3460	2330	2100	930	2540	3820	4960	e3400
11	4730	e5180	1690	e4010	3890	2380	e2300	910	1730	3400	5110	e3550
12	4820	4910	2000	3420	3930	3850	2510	900	2130	e2300	5320	3650
13	4840	1190	e1960	3290	4110	e2890	2440	980	2000	2430	5460	4180
14	4940	e1100	1910	4000	e3410	e2940	2740	1210	2370	2460	e5540	1680
15	4960	1010	1000	3430	2710	2980	3130	1410	e2500	e2750	e5600	1800
16	5010	1290	840	3780	1220	2970	1290	1640	2680	3050	5690	1610
17	4930	1330	810	e4020	e1620	3130	1200	1770	2780	e3400	5540	3300
18	e4960	1690	910	4260	2020	3350	1820	1850	e2850	e3750	e5460	2880
19	4990	2100	1210	4230	e1720	e3460	1840	1950	2920	e4100	5380	e3200
20	4990	e1440	1730	4200	1410	3580	2080	2440	e3400	4440	5120	3500
21	5040	780	2050	3850	e1680	3650	2500	2290	3900	e4420	e4990	3240
22	5100	740	2380	2310	e1950	3380	2930	2380	e2650	4410	4870	3220
23	5160	1280	e2660	2570	2280	3250	3040	e2140	1340	3950	4880	3190
24	5060	1280	2940	3440	2270	3090	3070	1880	1670	e4050	4720	e3250
25	e5040	e1380	e3010	3560	e2070	3040	3120	2180	2090	e4200	4650	3320
26	5020	1470	3080	3250	1870	2920	3130	1750	2500	4340	4740	3910
27	5200	1190	3020	3240	2300	3020	2940	2420	e2100	e4470	4780	3140
28	5060	1310	3010	3700	e2220	e3020	3060	1850	e1700	e4600	4840	3680
29	5060	5070	e2800	4140	---	3010	3290	1780	1440	4740	e4490	3920
30	5120	2080	2600	3980	---	3040	1900	e1860	1570	4930	4130	4320
31	5310	---	2940	4000	---	1020	---	1950	---	e4800	4260	---
MEAN	4880	2550	2530	3720	2680	2660	2260	1670	2260	3640	4900	3460
MAX	5310	5440	4230	4990	4110	3850	3290	2440	3900	4930	5690	4760
MIN	4410	740	810	2310	1220	1020	1110	810	1340	1850	3500	1610

WTR YR 1993 MEAN 3110 MAX 5690 MIN 740

e Estimated

07315500 RED RIVER NEAR TERRAL, OK--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20.0	18.0	e8.0	14.0	11.0	e9.0	e16.0	21.0	25.0	e29.0	e31.0	27.0
2	19.0	15.0	9.0	14.0	11.0	9.0	15.0	18.0	26.0	29.0	e30.0	e28.0
3	20.0	e14.5	10.0	11.0	e12.0	10.0	13.0	18.5	27.5	e29.0	30.0	28.5
4	e20.0	14.0	7.0	10.0	e12.0	10.0	e13.0	20.0	e27.0	e28.0	29.5	e29.0
5	20.0	e14.0	e6.5	10.0	e11.0	12.0	13.0	20.0	e26.5	28.0	e29.0	e29.0
6	21.0	e14.0	6.0	10.0	e13.0	12.0	13.0	19.5	e26.0	e28.0	e29.0	30.0
7	20.0	e13.5	8.0	10.0	13.0	12.0	16.0	21.0	25.5	28.5	e30.0	29.0
8	18.0	13.0	10.0	9.0	10.0	13.0	16.0	20.5	23.0	29.0	e30.0	25.5
9	16.0	16.0	10.0	9.0	14.0	15.0	e15.5	18.5	e24.0	29.5	30.0	27.5
10	18.0	20.0	e9.0	9.0	13.0	15.0	15.0	18.0	25.0	28.5	30.5	e27.5
11	22.0	20.0	8.0	e8.5	10.0	13.0	e17.0	17.5	25.5	29.0	30.5	e27.5
12	22.0	18.0	11.0	8.0	9.0	8.0	19.0	18.0	e26.0	e29.0	31.0	27.5
13	21.0	15.0	e8.0	e7.0	8.0	e8.0	22.0	18.5	27.0	29.5	31.0	26.5
14	19.0	e15.0	5.0	6.0	e8.5	e7.0	15.0	20.0	29.0	26.5	e31.0	20.5
15	24.0	15.0	7.0	6.0	9.0	7.0	12.0	e21.0	e29.0	e27.0	e31.0	20.5
16	18.0	15.0	8.0	7.0	5.0	15.0	11.0	23.5	29.5	28.0	e32.0	22.5
17	17.0	16.0	7.0	e7.0	e7.5	15.0	13.5	24.0	29.0	e28.0	32.0	28.0
18	e17.0	18.0	8.0	7.0	10.0	14.0	15.0	23.5	e28.0	e29.0	e32.0	25.0
19	18.0	18.0	10.0	7.0	e10.0	e13.0	17.5	23.0	27.0	e30.0	32.0	e27.5
20	20.0	e18.0	7.0	7.0	10.0	12.0	17.0	21.5	e28.0	30.5	33.0	29.5
21	21.0	18.0	8.0	7.0	e10.0	14.0	16.0	21.0	29.0	e30.0	e33.0	29.0
22	22.0	11.0	10.0	9.0	e9.5	16.0	16.0	22.5	e29.0	29.0	32.5	29.5
23	24.0	12.0	e11.0	e10.0	9.0	16.0	17.0	e22.5	29.0	30.0	31.0	29.5
24	22.0	12.0	12.0	11.0	10.0	20.0	17.5	22.5	29.5	e30.0	30.5	e27.0
25	e22.0	e12.0	e10.5	8.0	e10.0	22.0	19.5	e23.0	28.0	e30.0	29.5	26.0
26	23.0	11.5	9.0	10.0	10.0	15.0	22.0	23.5	29.0	30.0	30.0	24.5
27	22.0	11.0	11.0	e10.5	9.0	17.0	21.0	24.5	e29.0	e31.0	30.0	24.5
28	23.0	7.0	11.0	11.0	e9.0	e17.0	20.0	23.5	e29.0	e32.0	31.0	25.5
29	23.0	11.0	e10.5	8.0	---	17.0	21.0	24.0	29.5	33.0	e29.0	27.0
30	19.0	7.0	10.0	8.0	---	e17.0	20.0	e24.0	29.5	32.5	28.5	25.0
31	20.0	---	6.0	9.0	---	17.0	---	24.0	---	e31.0	24.0	---
MEAN	20.4	14.4	8.8	9.0	10.1	13.5	16.5	21.3	27.5	29.4	30.4	26.8
MAX	24.0	20.0	12.0	14.0	14.0	22.0	22.0	24.5	29.5	33.0	33.0	30.0
MIN	16.0	7.0	5.0	6.0	5.0	7.0	11.0	17.5	23.0	26.5	24.0	20.5

WTR YR 1993 MEAN 19.0 MAX 33.0 MIN 5.0

e Estimated

07315700 MUD CREEK NEAR COURTNEY, OK

LOCATION.--Lat 34°00'15", long 97°34'00", in NW 1/4 SE 1/4 sec.25, T.6 S., R.4 W., Jefferson County, Hydrologic Unit, 11130201, on downstream side of bridge on State Highway 89, 4.0 mi downstream from North Mud Creek, 6.0 mi northwest of Courtney, and at mile 11.5.

DRAINAGE AREA.--572 mi^2.

PERIOD OF RECORD.--October 1960 to current year.

REVISED RECORDS.--WDR OK-78-2: Maximum gage height.

GAGE.--Water-stage recorder and broad-crested weir. Datum of gage is 727.72 ft above sea level. Prior to Oct. 1, 1968, auxiliary water-stage recorder 2.0 mi downstream from base gage.

REMARKS.--Records poor.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1957, reached a stage of 30.6 ft.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,300 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Dec. 15	0700	4,190	25.24	May 5	1200	2,110	23.10
Feb. 17	0900	6,570	26.26	May 9	1900	47,700	32.30
Feb. 28	0100	1,820	22.48	May 26	1100	2,460	23.79
Mar. 2	1500	4,920	25.67	Sept. 15	1600	2,090	23.06
Mar. 31	1800	15,500	28.23	Sept. 21	0900	1,550	21.77
Apr. 7	1200	1,950	22.79				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e10	29	16	45	50	990	6290	264	110	e25	e1.4	.30
2	e8.4	5.4	15	43	50	4320	2980	353	89	e23	e1.3	.29
3	e7.0	8.2	14	42	50	4480	1080	1260	77	e21	5.2	.59
4	e5.8	6.6	13	43	50	3370	790	1610	70	e20	7.8	.35
5	e4.6	5.0	12	45	52	1400	1640	1970	63	e19	4.9	.31
6	e3.7	3.1	12	46	54	294	1540	455	58	e18	3.8	.33
7	e2.8	2.1	12	43	56	229	1830	1230	53	e17	3.1	.35
8	2.3	1.8	12	42	55	197	592	1710	60	e16	2.4	.50
9	2.7	2.2	33	47	51	177	262	21100	95	e15	2.1	.42
10	2.4	2.8	438	65	54	161	206	29600	315	e14	1.8	.41
11	2.2	2.9	818	107	85	144	177	9680	571	e15	1.5	.34
12	2.0	3.0	384	143	109	130	156	4330	359	e17	1.3	.28
13	1.8	3.3	241	154	88	118	142	2710	145	e27	1.3	.43
14	1.6	5.7	1980	151	68	109	172	1090	94	e31	2.2	614
15	1.4	5.7	4010	106	1280	107	334	334	68	e17	2.5	1840
16	1.3	4.9	3230	75	4590	108	432	256	55	e12	2.2	1310
17	1.4	6.0	2850	62	5760	109	222	205	51	e10	1.7	391
18	1.3	6.4	689	55	3530	102	155	174	50	e7.6	1.4	67
19	1.2	7.7	168	63	1630	96	131	155	49	e6.2	1.0	37
20	1.0	9.7	127	313	299	99	111	139	89	e5.2	.71	334
21	.85	24	100	722	235	109	94	125	51	e4.5	.54	1320
22	.68	617	81	679	192	182	78	112	e46	e3.8	.42	506
23	.62	799	71	230	157	494	71	141	e43	e3.4	.37	117
24	.58	378	62	152	145	372	68	1290	e44	e2.9	.91	48
25	.64	111	56	113	657	207	75	2190	e47	e2.6	.75	33
26	2.5	53	52	86	1300	152	68	2340	79	e2.3	.49	159
27	4.2	38	49	73	1600	123	57	540	53	e2.1	.39	448
28	4.9	29	47	66	1190	114	54	164	e39	e1.9	.30	128
29	1.4	23	48	62	---	147	288	137	e35	e1.7	.28	48
30	1.1	19	48	57	---	167	457	148	e27	e1.6	.24	30
31	1.4	---	47	53	---	6100	---	135	---	e1.5	.28	---
TOTAL	83.77	2212.5	15735	3983	23437	24907	20552	85947	2985	364.3	54.58	7434.90
MEAN	2.70	73.7	508	128	837	803	685	2772	99.5	11.8	1.76	248
MAX	10	799	4010	722	5760	6100	6290	29600	571	31	7.8	1840
MIN	.58	1.8	12	42	50	96	54	112	27	1.5	.24	.28
AC-FT	166	4390	31210	7900	46490	49400	40760	170500	5920	723	108	14750

e Estimated

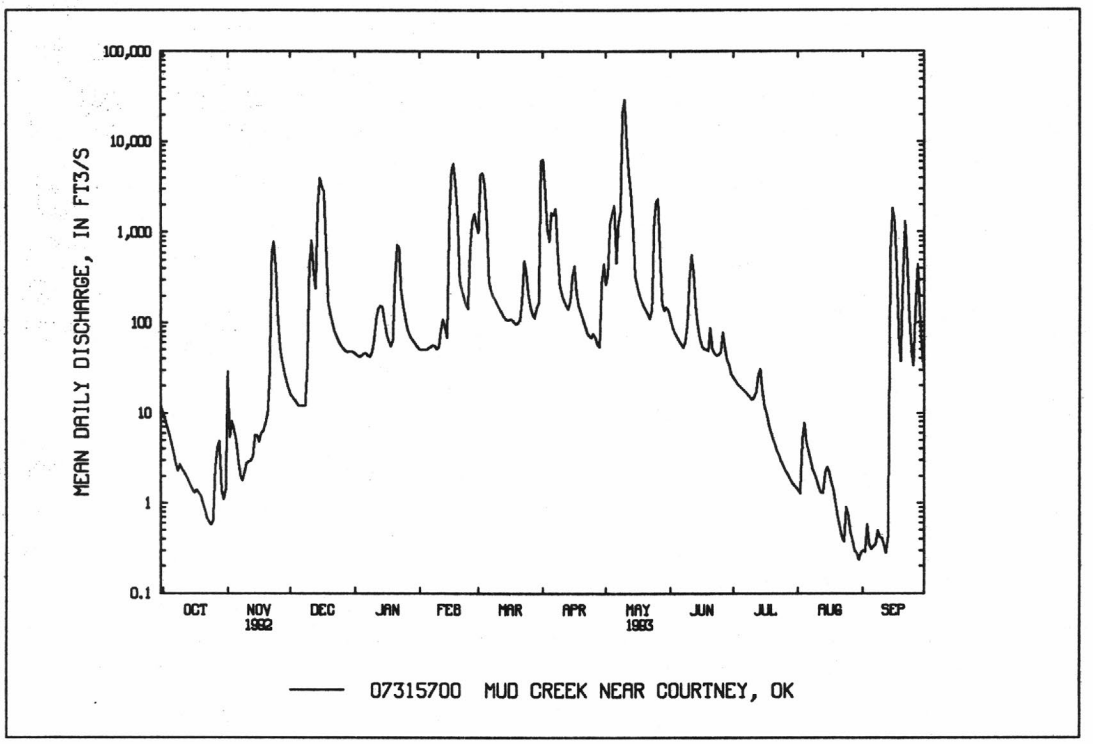
RED RIVER BASIN

07315700 MUD CREEK NEAR COURTNEY, OK

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	109	109	161	96.5	156	279	304	565	370	41.7	24.3	124
MAX	1216	854	1766	898	1122	1468	3075	3670	1859	279	293	571
(WY)	1982	1974	1992	1985	1987	1990	1990	1982	1989	1975	1964	1989
MIN	.000	.000	.009	.000	.16	.001	.16	3.44	.021	.000	.000	.000
(WY)	1964	1978	1979	1964	1967	1980	1980	1971	1972	1964	1980	1963

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1961-93	
ANNUAL TOTAL	111101.27		187696.05			
ANNUAL MEAN	304		514		195	
HIGHEST ANNUAL MEAN					614	1990
LOWEST ANNUAL MEAN					19.1	1971
HIGHEST DAILY MEAN	4010	Dec 15	29600	May 10	37800	May 3 1990
LOWEST DAILY MEAN	.58	Oct 24	.24	Aug 30	.00	many years
ANNUAL SEVEN-DAY MINIMUM	.80	Oct 19	.30	Aug 27	.00	Jul 28 1961
INSTANTANEOUS PEAK FLOW			47700	May 9	49600	May 3 1990
INSTANTANEOUS PEAK STAGE			32.30	May 9	33.14	May 29 1987
ANNUAL RUNOFF (AC-FT)	220400		372300		141200	
10 PERCENT EXCEEDS	884		1240		269	
50 PERCENT EXCEEDS	87		54		6.9	
90 PERCENT EXCEEDS	5.0		1.3		.00	



07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW 1/4 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)
Nov. 23	1800	24,300	18.21	Apr. 1	0900	33,400	20.09
Dec. 16	1100	29,600	19.35	May 4	0400	24,400	18.27
Feb. 17	1600	33,100	20.03	May 11	1100	117,000	30.99
Mar. 3	0800	25,000	18.41				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	563	390	e5300	2920	2430	11600	29100	11000	6590	4080	e1040	740
2	536	613	e5000	2930	2330	20300	14200	15900	6050	3320	e968	718
3	524	623	e4600	2860	2280	23900	10200	19100	6000	e2440	e961	744
4	512	456	e4050	2720	e2260	17100	e9000	23100	5850	e2200	e968	731
5	500	423	e3700	2740	e2400	12000	e8000	18500	5170	e2030	1030	728
6	486	408	e3100	2590	e2380	8430	e7200	15700	4790	e1950	e1060	771
7	472	391	e2800	2340	e2350	8020	e6600	15200	4270	e1920	e1210	948
8	504	377	2060	e2000	e2300	8340	e6300	14600	4260	e1920	e1740	920
9	491	377	2110	2520	e2050	7870	e6000	43700	4900	e1940	e2570	984
10	475	375	2730	3000	e2080	7110	e5600	87700	8120	e1980	1780	1050
11	461	387	2860	2900	e2200	6760	e5300	114000	8140	e2220	2200	1010
12	449	460	7750	2880	e2400	6420	e5000	102000	9130	2750	1750	887
13	435	484	9350	3180	e2700	6100	4760	79100	7130	4430	1460	864
14	412	8010	13100	3640	e3500	5410	4920	62800	6100	3370	1280	1890
15	410	7420	21300	4000	4780	4850	5010	32100	4680	e2350	1150	3620
16	402	4310	28100	4020	19600	4620	9640	24600	4020	e2080	1030	5810
17	400	2770	20800	3460	31300	4420	16200	20200	3450	e2040	958	4250
18	394	2160	13900	2870	22700	4290	14700	17400	2910	e2300	904	2650
19	379	2080	8500	2600	14300	4180	11000	14900	2650	3520	855	1460
20	373	2140	6660	2950	8780	3800	8960	12300	e2400	5320	826	1070
21	374	4320	6030	3830	7450	3560	7960	11300	e2240	3460	810	1760
22	375	13900	5790	4400	7260	4070	7070	10100	e2160	e2400	790	2020
23	377	20400	5670	7360	6810	5210	5860	8340	3060	e2050	767	1500
24	376	21100	5060	6260	6830	6460	4880	10700	7360	e1790	877	1020
25	377	14200	4380	5340	8510	5570	4300	13700	7110	e1650	782	821
26	375	10200	3760	4880	11000	5610	4230	10700	4370	e1570	773	762
27	375	11100	3440	4220	12200	5920	4210	12400	3370	e1420	746	735
28	375	10900	3290	3770	10200	5110	4250	13600	4020	e1180	718	876
29	371	e7200	3170	3390	---	4450	5060	9500	7120	e1190	697	881
30	371	e6100	3080	2870	---	4060	6020	8210	5800	e1160	716	653
31	371	---	2980	2580	---	19200	---	7500	---	e1100	798	---
TOTAL	13295	154074	214420	108020	205380	244740	241530	859950	153220	73130	34214	42873
MEAN	429	5136	6917	3485	7335	7895	8051	27740	5107	2359	1104	1429
MAX	563	21100	28100	7360	31300	23900	29100	114000	9130	5320	2570	5810
MIN	371	375	2060	2000	2050	3560	4210	7500	2160	1100	697	653
AC-FT	26370	305600	425300	214300	407400	485400	479100	1706000	303900	145100	67860	85040

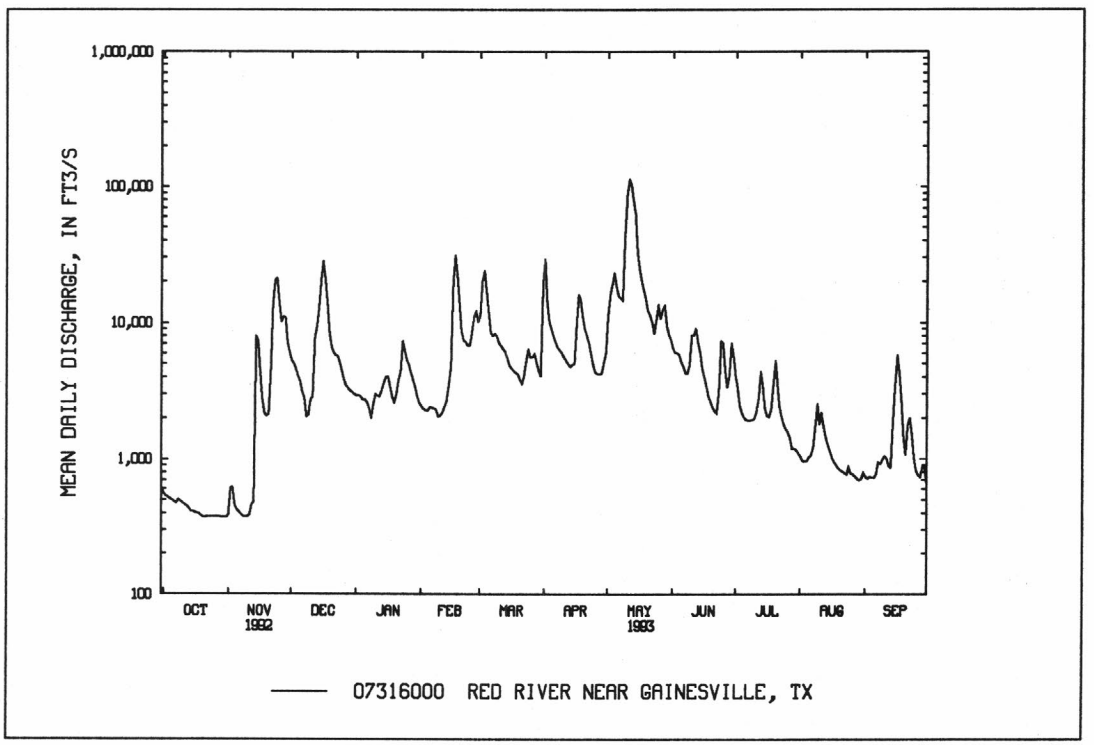
e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3979	1964	1590	1200	1687	2598	3440	8291	8178	2129	1290	2337
MAX	31080	14020	14990	7152	9984	14690	27400	47780	43510	9857	12940	12880
(WY)	1942	1942	1992	1985	1987	1987	1990	1957	1941	1950	1950	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

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1937-93	
ANNUAL TOTAL	2139979		2344846			
ANNUAL MEAN	5847		6424		3227	
HIGHEST ANNUAL MEAN					11890	1987
LOWEST ANNUAL MEAN					651	1953
HIGHEST DAILY MEAN	63400	Jun 10	114000	May 11	232000	May 31 1987
LOWEST DAILY MEAN	371	Oct 29	371	Oct 29	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	374	Oct 25	374	Oct 25	48	Jan 18 1940
INSTANTANEOUS PEAK FLOW			117000	May 11	265000	May 31 1987
INSTANTANEOUS PEAK STAGE			30.99	May 11	40.08	May 31 1987
ANNUAL RUNOFF (AC-FT)	4245000		4651000		2338000	
10 PERCENT EXCEEDS	14000		14000		7120	
50 PERCENT EXCEEDS	3730		3450		797	
90 PERCENT EXCEEDS	497		496		210	



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 fair. 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 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.02	6.4	14	20	34	43	61	31	71	2.8	2.2
2	.00	.04	6.7	15	20	39	40	159	31	42	2.8	1.8
3	.00	.04	6.6	18	20	40	40	121	27	30	4.3	1.3
4	.00	.02	6.4	18	20	39	43	115	25	22	3.9	1.1
5	.00	.02	6.0	17	19	36	46	100	23	17	3.5	.70
6	.00	.02	7.0	17	19	34	42	84	24	14	3.7	.56
7	.00	.04	6.8	16	19	34	42	70	24	14	3.6	.74
8	.00	.07	7.1	17	19	33	41	85	21	12	3.5	1.2
9	.00	.12	9.0	21	19	33	42	80	19	11	3.3	1.2
10	.00	.13	8.2	e15	20	31	40	74	19	8.8	3.2	1.0
11	.00	.13	7.6	e14	22	31	39	71	42	7.4	2.6	.62
12	.00	.15	8.2	e15	22	31	38	69	25	22	2.4	.43
13	.00	.17	11	e13	24	31	38	67	21	17	2.2	.31
14	.00	.28	13	e13	24	31	45	61	18	21	2.0	.37
15	.00	.34	11	e15	30	31	49	56	17	20	1.8	.49
16	.00	.29	11	23	e26	31	46	52	16	16	1.4	.46
17	.00	.42	14	22	e20	30	43	59	15	13	.91	.37
18	.00	.71	15	21	e21	30	41	198	15	11	.47	.30
19	.00	2.4	15	20	e28	35	40	118	101	9.1	.12	.35
20	.00	2.0	15	21	38	35	39	82	77	8.0	.00	.16
21	.00	4.1	15	23	39	35	36	74	50	7.6	.00	.16
22	.00	6.2	15	26	38	44	36	65	98	7.4	.02	.10
23	.00	5.4	15	24	36	45	36	59	48	6.5	.10	.00
24	.00	6.4	14	23	35	46	36	53	32	5.8	.14	.03
25	.01	7.5	14	23	35	44	35	47	23	5.2	.00	.59
26	.02	6.7	14	22	33	43	34	44	36	4.7	.00	.45
27	.02	5.6	14	22	32	41	34	41	43	4.0	.00	.52
28	.02	6.0	15	22	32	40	37	37	28	3.6	.00	.34
29	.02	6.5	15	21	---	42	74	34	21	3.4	.00	.25
30	.02	6.4	15	20	---	49	55	32	19	3.2	.00	.23
31	.02	---	14	20	---	46	---	30	---	2.9	1.1	---
TOTAL	0.13	68.21	351.0	591	730	1144	1250	2298	989	440.6	49.86	18.33
MEAN	.004	2.27	11.3	19.1	26.1	36.9	41.7	74.1	33.0	14.2	1.61	.61
MAX	.02	7.5	15	26	39	49	74	198	101	71	4.3	2.2
MIN	.00	.02	6.0	13	19	30	34	30	15	2.9	.00	.00
AC-FT	.3	135	696	1170	1450	2270	2480	4560	1960	874	99	36

e Estimated

07316500 WASHITA RIVER NEAR CHEYENNE, OK--Continued

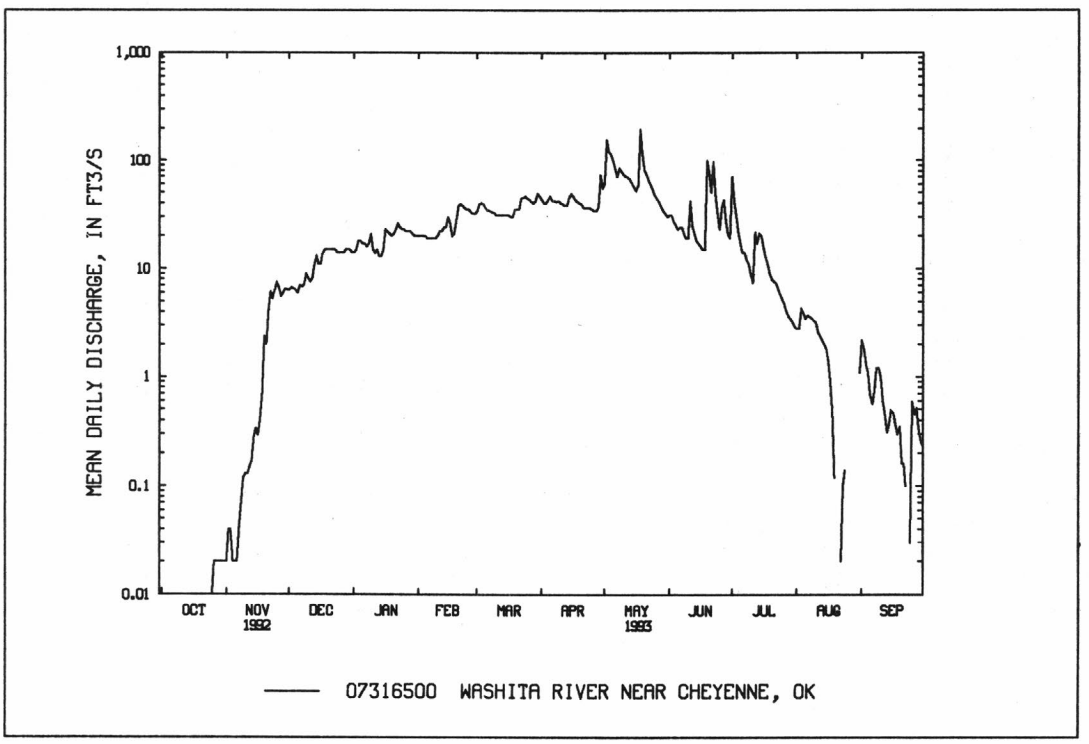
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.41	7.76	9.29	12.4	16.7	22.1	27.5	46.5	36.5	6.97	2.82	4.08
MAX	72.9	64.3	33.8	46.8	46.5	74.8	131	348	203	61.7	14.8	35.3
(WY)	1987	1987	1987	1987	1987	1987	1990	1977	1982	1982	1977	1962
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

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	4231.77		7930.13			
ANNUAL MEAN	11.6		21.7		[a]16.6	
HIGHEST ANNUAL MEAN					57.1	1982
LOWEST ANNUAL MEAN					2.60	1972
HIGHEST DAILY MEAN	82	May 23	198	May 18	1560	Apr 23 1990
LOWEST DAILY MEAN	.00	Sep 15	.00	at times	.00	most years
ANNUAL SEVEN-DAY MINIMUM	.00	Sep 15	.00	Oct 1	.00	Oct 1 1961
INSTANTANEOUS PEAK FLOW			263	Jun 22	[b]7250	Apr 22 1990
INSTANTANEOUS PEAK STAGE			9.08	Jun 22	16.60	Apr 22 1990
ANNUAL RUNOFF (AC-FT)	8390		15730		12050	
10 PERCENT EXCEEDS	23		46		34	
50 PERCENT EXCEEDS	11		15		5.8	
90 PERCENT EXCEEDS	.00		.02		.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.



07324200 WASHITA RIVER NEAR HAMMON, OK

LOCATION.--Lat 35°39'23", long 99°18'21", on west line of sec.26, T.14 N., R.20 W., Custer County, Hydrologic Unit 11130301, on right bank near county road bridge, 2.2 mi downstream from Quartermaster Creek, 4.7 mi northeast of Hammon, and at mile 494.5.

DRAINAGE AREA.--1,387 mi^2.

PERIOD OF RECORD.--October 1969 to September 1987, October 1989 to current year.

REVISED RECORD.--OK-92-2: 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,643.22 ft above sea level.

REMARKS.--Records good. Flow regulated since 1961 by numerous flood-retarding structures.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.9	7.1	26	37	51	73	104	116	122	104	25	12
2	8.1	8.0	26	39	51	79	96	325	117	128	25	13
3	7.8	7.1	26	42	50	84	92	417	112	119	25	13
4	7.6	6.9	25	47	50	83	99	282	107	91	26	14
5	7.1	6.5	25	45	50	82	102	241	102	78	25	12
6	6.6	7.2	e23	44	50	78	104	214	100	70	26	10
7	6.4	7.5	e24	44	51	79	110	189	99	63	25	11
8	6.2	7.5	e24	44	51	78	99	324	94	62	25	12
9	6.3	8.0	28	48	50	74	94	550	91	58	25	14
10	6.7	8.1	30	e45	55	72	89	480	94	55	23	13
11	6.7	7.8	30	e42	62	70	87	344	104	50	22	11
12	6.4	7.9	29	e42	60	69	83	298	117	51	21	9.8
13	6.1	7.5	34	e41	59	68	80	270	101	73	19	9.6
14	5.8	8.0	41	e39	58	69	83	231	87	90	18	9.1
15	5.9	8.3	41	e39	63	70	97	208	83	85	17	9.2
16	5.5	8.4	40	e41	e61	69	99	187	80	78	16	9.8
17	5.5	8.7	39	e48	e59	67	92	180	71	68	15	9.4
18	5.7	9.0	39	e45	e55	66	87	424	67	60	14	8.8
19	6.2	13	41	e42	e55	73	82	427	110	54	14	8.6
20	6.8	14	40	e43	e65	83	78	357	297	49	13	7.4
21	6.5	15	40	e48	84	83	74	278	233	46	12	6.7
22	6.2	22	40	55	80	87	71	238	165	44	12	6.4
23	6.1	23	39	56	78	99	70	218	161	40	11	6.0
24	6.1	23	39	55	74	97	70	224	137	39	11	5.9
25	5.3	53	38	53	75	93	67	210	112	37	11	8.7
26	5.5	38	37	53	74	91	64	188	105	34	10	11
27	5.5	e30	38	53	73	85	62	178	140	32	10	9.7
28	6.0	e25	38	53	72	82	61	159	159	30	9.8	9.4
29	6.0	26	39	51	---	82	105	144	128	28	9.4	9.3
30	6.6	26	39	49	---	127	143	137	105	27	9.3	8.9
31	6.8	---	38	49	---	118	---	132	---	26	10	---
TOTAL	198.9	447.5	1056	1432	1716	2530	2644	8170	3600	1869	534.5	298.7
MEAN	6.42	14.9	34.1	46.2	61.3	81.6	88.1	264	120	60.3	17.2	9.96
MAX	8.9	53	41	56	84	127	143	550	297	128	26	14
MIN	5.3	6.5	23	37	50	66	61	116	67	26	9.3	5.9
AC-FT	395	888	2090	2840	3400	5020	5240	16210	7140	3710	1060	592

e Estimated

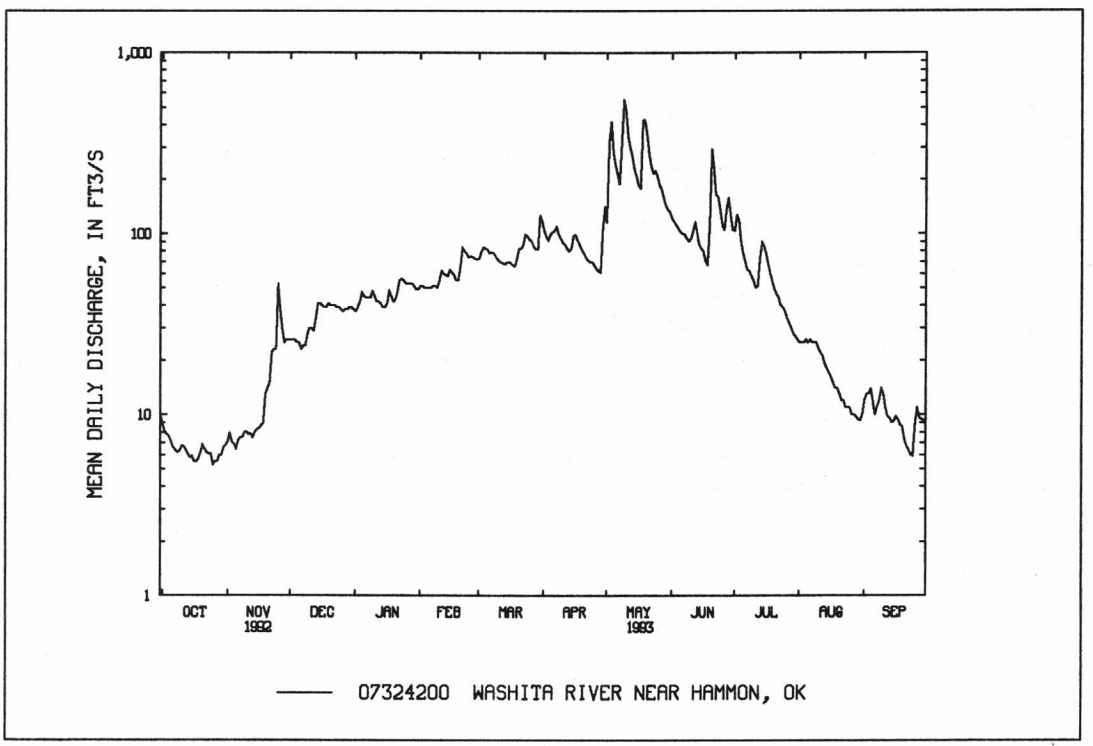
07324200 WASHITA RIVER NEAR HAMMON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	26.0	25.3	19.4	24.7	32.4	48.2	61.2	140	106	29.1	14.5	11.4
MAX	384	253	114	130	175	364	292	755	327	138	61.4	39.6
(WY)	1987	1987	1987	1987	1987	1987	1990	1982	1982	1987	1990	1987
MIN	.000	.000	.000	.000	.000	.000	.000	.012	.001	.028	.000	.001
(WY)	1973	1972	1973	1973	1972	1972	1972	1971	1972	1970	1972	1976

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1970-93	
NNUAL TOTAL	13063.7		24496.6			
ANNUAL MEAN	35.7		67.1		44.9	
HIGHEST ANNUAL MEAN					212	1987
LOWEST ANNUAL MEAN					.49	1972
HIGHEST DAILY MEAN	380	Jul 16	550	May 9	4340	May 17 1982
LOWEST DAILY MEAN	5.3	Oct 25	5.3	Oct 25	.00	at times
ANNUAL SEVEN-DAY MINIMUM	5.8	Oct 23	5.8	Oct 23	.00	Jul 13 1970
INSTANTANEOUS PEAK FLOW			719	May 18	[a]6000	May 17 1982
INSTANTANEOUS PEAK STAGE			12.14	May 18	23.44	May 17 1982
ANNUAL RUNOFF (AC-FT)	25910		48590		32510	
10 PERCENT EXCEEDS	57		137		92	
50 PERCENT EXCEEDS	35		48		14	
90 PERCENT EXCEEDS	7.7		7.3		.00	

[a]From rating curve extended above 2,500 ft^3/s on basis of slope-area measurement.



07324300 FOSS RESERVOIR NEAR FOSS, OK

LOCATION.--Lat 35°32'20", long 99°11'09", in S 1/2 sec.2, T.12 N., R.19 W., Custer County, Hydrologic Unit 11130301, near right end of dam on Washita River, 0.5 mi upstream from Oak Creek, 3.5 mi west of Stafford, 6.0 mi north of Foss, and at mile 474.4.

DRAINAGE AREA.--1,496 mi^2.

PERIOD OF RECORD.--February 1961 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to October, 1961, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earth dam. Outlet consists of four 6- by 7-foot, 6-inch high pressure gates and one uncontrolled spillway. Storage began Feb. 13, 1961. Capacity, 436,500 acre-ft, at elevation 1,668.6 ft, crest of drop inlet and 256,100 acre-ft, at elevation 1,652.0 ft, conservation pool. Dead storage, 12,420 acre-ft below elevation 1,597.2 ft, sill of gated outlet. Figures given herein represent total contents. Reservoir is designed for flood control, municipal water supply, and irrigation release. Revised capacity table used after Sept. 30, 1964. U.S. Army Corps of Engineers' telemeter at station.

COOPERATION.--Elevations and data on diversions provided by Foss Reservoir Master Conservancy District.

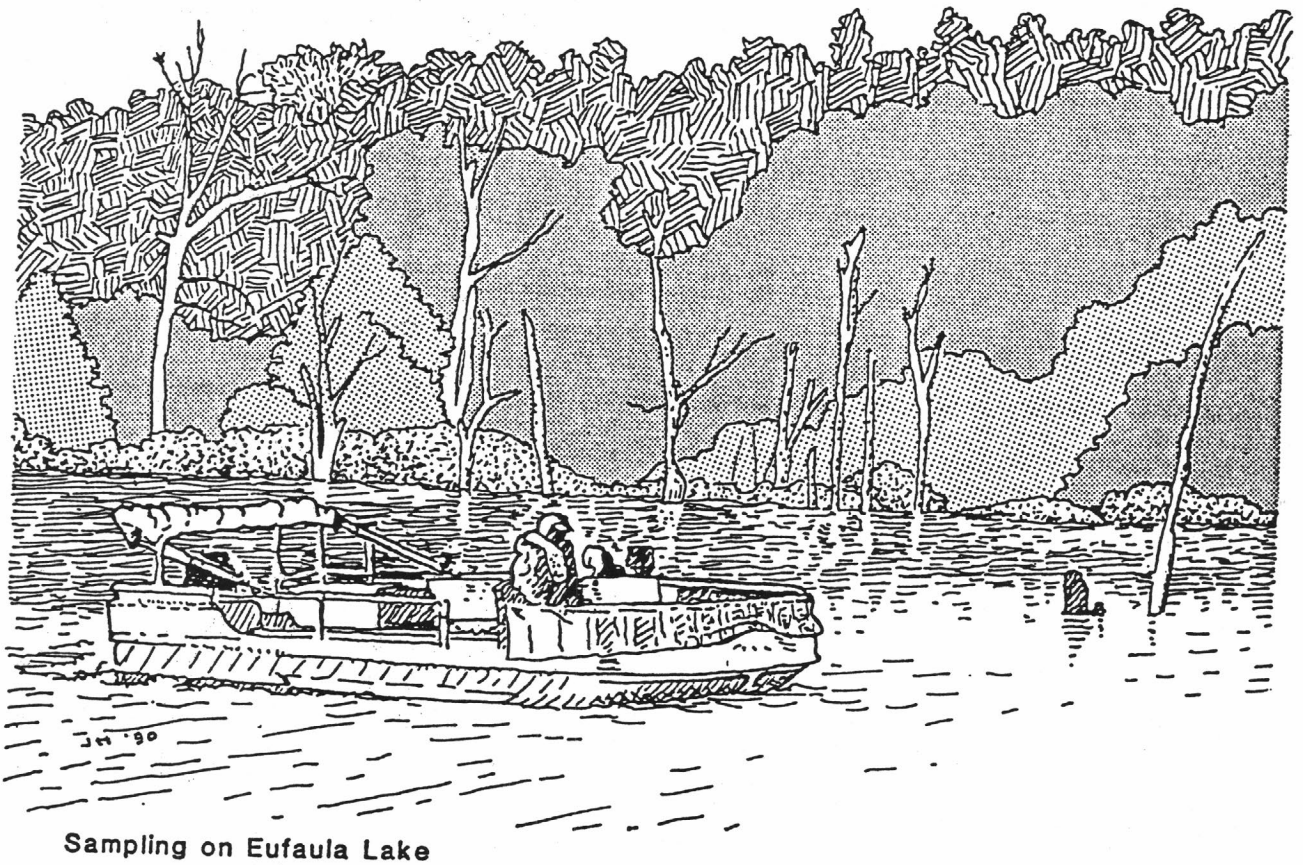
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 217,300 acre-ft, June 18, 1989, elevation, 1,647.35 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 189,100 acre-ft, May 19, elevation, 1,643.60 ft; minimum, 162,300 acre-ft, Sept. 30, elevation, 1,639.61 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30	1640.49	167,900	-	-
Oct. 31	1640.35	167,000	-900	188
Nov. 30	1640.51	168,000	+1,000	189
Dec. 31	1640.79	169,900	+1,900	196
CAL YR 92	-	-	-5,100	2,401
Jan. 31	1641.31	173,300	+3,400	196
Feb. 28	1641.16	172,300	-1,000	171
Mar. 31	1640.84	170,200	-2,100	182
Apr. 30	1641.55	174,900	+4,700	177
May 31	1642.71	182,800	+7,900	129
June 30	1641.60	175,200	-7,600	171
July 31	1640.89	170,500	-4,700	186
Aug. 31	1639.92	164,200	-6,300	285
Sept. 30	1639.63	162,400	-1,800	164
WTR YR 93	-	-	-5,500	2,234

* Elevation at 0800 on the following day.



Sampling on Eufaula Lake

07324400 WASHITA RIVER NEAR FOSS, OK

LOCATION.--Lat 35°32'20", long 99°10'10", in SW 1/4 SW 1/4 sec.1, T.12 N., R.19 W., Custer County, Hydrologic Unit 11130302, on right bank at downstream side county road bridge, 0.4 mi downstream from Oak Creek, 0.9 mi downstream from Foss Dam, 2.5 mi west of Stafford, 6.0 mi north of Foss, and at mile 473.5.

DRAINAGE AREA.--1,551 mi^2.

PERIOD OF RECORD.--March 1956 to April 1957, February to December 1958, July 1961 to September 1987, October 1989 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,560 ft above sea level, from topographic map.

REMARKS.--No estimated daily discharges. Records good. Flow completely regulated since 1961 by Foss Reservoir (station 07324300), except for 55 mi^2 intervening area.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1959 reached a stage of 23.4 ft, from floodmark.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.2	4.6	12	13	16	174	179	48	553	310	9.0	6.7
2	4.6	4.8	12	14	16	175	167	228	551	306	9.2	7.3
3	5.5	5.1	11	14	16	174	163	211	546	304	8.7	11
4	5.5	5.0	11	15	17	170	176	191	542	304	8.0	6.6
5	5.5	5.3	11	15	17	169	175	212	539	301	8.8	6.5
6	5.7	5.2	11	15	17	82	170	195	539	299	9.2	6.3
7	5.2	5.3	11	15	18	20	169	186	538	299	9.2	6.3
8	5.2	5.2	11	14	17	111	165	457	383	299	8.7	6.5
9	4.5	5.2	11	17	98	159	161	549	196	202	8.4	6.9
10	4.6	5.1	11	21	178	157	160	335	115	145	7.7	6.7
11	4.6	4.8	11	19	184	155	156	313	165	144	7.8	6.3
12	4.6	4.4	11	18	172	154	122	298	160	144	8.0	6.3
13	4.4	4.6	13	16	167	154	24	273	158	62	7.2	6.3
14	4.2	4.7	16	17	165	154	25	246	77	14	7.7	6.3
15	4.3	4.7	16	17	172	154	32	183	17	15	7.9	6.3
16	4.4	4.5	17	17	175	154	30	146	16	15	7.7	6.3
17	4.5	4.5	16	17	171	155	27	233	171	14	7.4	6.3
18	4.6	5.4	16	17	168	154	26	392	309	13	7.4	6.1
19	4.8	9.8	15	17	169	160	25	483	333	13	7.2	5.7
20	4.9	6.7	15	18	197	169	22	587	354	12	6.7	5.7
21	4.5	12	14	19	195	165	20	581	328	12	6.9	5.6
22	4.6	17	14	20	183	163	19	578	317	12	6.7	5.3
23	4.7	9.2	14	20	176	172	19	592	312	11	6.7	5.3
24	4.9	17	14	19	175	261	20	598	309	10	6.7	5.4
25	4.4	31	14	18	179	331	19	582	307	9.7	6.5	6.3
26	4.6	18	13	18	173	326	18	574	328	9.7	6.3	5.9
27	4.7	15	13	17	173	323	18	569	405	9.7	6.3	5.7
28	4.7	13	13	17	173	321	18	565	373	9.2	7.0	5.9
29	4.6	13	13	17	---	227	98	561	329	8.0	6.9	5.7
30	4.6	12	13	16	---	173	81	558	313	8.6	6.7	5.7
31	4.8	---	13	16	---	210	---	554	---	8.9	6.7	---
TOTAL	148.9	262.1	406	523	3577	5626	2504	12078	9583	3323.8	235.3	189.2
MEAN	4.80	8.74	13.1	16.9	128	181	83.5	390	319	107	7.59	6.31
MAX	6.2	31	17	21	197	331	179	598	553	310	9.2	11
MIN	4.2	4.4	11	13	16	20	18	48	16	8.0	6.3	5.3
AC-FT	295	520	805	1040	7090	11160	4970	23960	19010	6590	467	375

07324400 WASHITA RIVER NEAR FOSS, OK--Continued

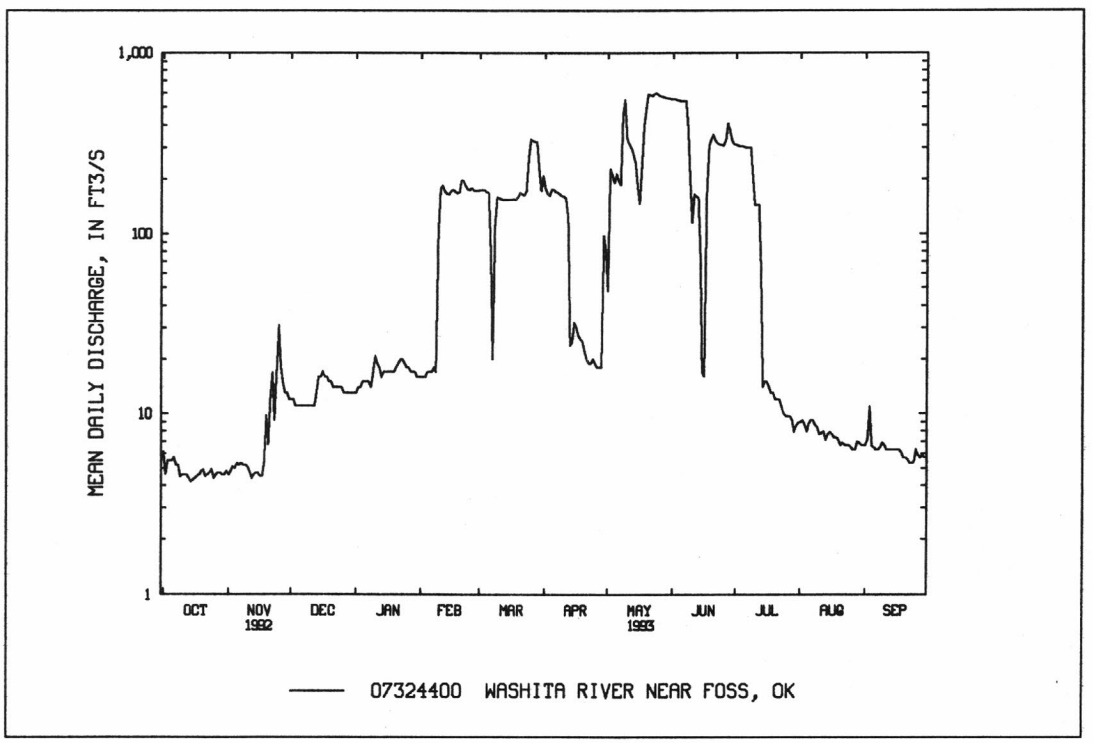
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	26.7	16.6	8.98	18.1	19.3	25.6	33.8	74.2	124	47.7	26.7	9.91
MAX	309	218	75.3	215	128	236	316	447	763	343	261	56.8
(WY)	1978	1987	1987	1987	1993	1987	1987	1982	1982	1987	1987	1986
MIN	.15	.28	.36	.56	.60	.57	1.62	1.08	1.28	2.27	3.12	.46
(WY)	1968	1968	1968	1968	1968	1968	1967	1967	1966	1967	1973	1966

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	14747.9		38456.3			
ANNUAL MEAN	40.3		105		35.9	
HIGHEST ANNUAL MEAN					233	1987
LOWEST ANNUAL MEAN					3.87	1963
HIGHEST DAILY MEAN	278	Jan 29	598	May 24	1300	Jun 11 1983
LOWEST DAILY MEAN	4.2	Oct 14	4.2	Oct 14	[a].06	Oct 2 1967
ANNUAL SEVEN-DAY MINIMUM	4.4	Oct 11	4.4	Oct 11	.08	Sep 28 1967, 1974
INSTANTANEOUS PEAK FLOW			877	May 9	[b]3010	Aug 26 1969
INSTANTANEOUS PEAK STAGE			16.10	May 9	21.56	Oct 3 1986
ANNUAL RUNOFF (AC-FT)	29250		76280		26040	
10 PERCENT EXCEEDS	143		319		62	
50 PERCENT EXCEEDS	11		17		6.8	
90 PERCENT EXCEEDS	5.2		5.2		1.5	

[a]Minimum daily discharge for period of record no flow at times in 1956.

[b]Maximum discharge for period of record 14,000 ft^3/s, Apr. 19, 1957, from rating curve extended above 3,600 ft^3/s, on basis of velocity-area study.



07325000 WASHITA RIVER NEAR CLINTON, OK

LOCATION.--Lat 35°31'51", long 98°58'00", in SW 1/4 NE 1/4 sec.11, T.12 N., R.17 W., Custer County, Hydrologic Unit 11130302, on downstream side of pier of bridge on U.S. Highway 183, 0.5 mi north of Clinton, 0.8 mi upstream from Beaver Creek, 4.8 mi downstream from Barnitz Creek, and at mile 447.4.

DRAINAGE AREA.--1,977 mi^2.

PERIOD OF RECORD.--October 1935 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1221: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,467.44 ft above sea level. See WSP 1920 for history of changes prior to Mar. 19, 1941.

REMARKS.--Records good. Flow regulated since February 1961 by Foss Reservoir (station 07324300) and by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 3-4, 1934, reached a stage of 33.9 ft, from floodmarks.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	16	57	57	72	221	283	281	625	380	46	36
2	18	17	52	60	67	232	238	658	625	364	47	34
3	e17	17	51	73	69	236	236	739	611	347	44	55
4	e16	17	55	73	69	227	256	474	602	340	43	40
5	e15	17	48	69	71	219	286	419	595	331	42	30
6	e15	17	49	66	70	210	269	383	596	325	43	28
7	14	18	54	63	70	121	260	355	596	329	43	28
8	13	18	49	66	71	106	258	998	572	327	42	35
9	15	18	54	82	68	193	240	2590	385	310	41	30
10	16	20	55	105	153	201	234	2520	315	200	38	29
11	16	19	53	96	227	200	227	1310	277	190	36	27
12	16	19	56	88	227	199	224	1100	264	188	35	26
13	15	18	77	80	205	199	165	935	261	184	32	26
14	14	19	125	73	202	200	124	799	247	107	30	26
15	14	19	106	74	216	205	145	683	160	e92	30	26
16	14	19	91	76	236	208	139	577	132	84	30	27
17	15	19	82	78	226	199	123	493	120	79	28	26
18	16	30	79	75	218	199	115	676	310	76	28	25
19	16	54	76	75	232	222	116	680	364	72	28	24
20	16	59	69	80	250	239	104	753	500	67	27	23
21	17	55	66	89	292	234	92	716	430	68	26	22
22	16	98	65	88	250	239	87	702	390	65	26	22
23	15	69	65	92	230	248	92	795	368	61	25	21
24	16	91	60	82	223	249	93	819	354	57	25	21
25	16	247	63	76	223	345	85	732	344	54	26	25
26	16	121	61	75	222	355	80	694	381	51	25	26
27	15	80	59	75	215	352	78	677	547	48	24	26
28	16	71	59	74	215	351	80	665	536	48	24	24
29	16	63	59	71	---	359	448	652	435	47	25	22
30	16	59	65	69	---	255	478	647	388	46	28	21
31	17	---	60	69	---	339	---	636	---	44	70	---
TOTAL	485	1404	2020	2369	4889	7362	5655	25158	12330	4981	1057	831
MEAN	15.6	46.8	65.2	76.4	175	237	188	812	411	161	34.1	27.7
MAX	18	247	125	105	292	359	478	2590	625	380	70	55
MIN	13	16	48	57	67	106	78	281	120	44	24	21
AC-FT	962	2780	4010	4700	9700	14600	11220	49900	24460	9880	2100	1650

e Estimated

07325000 WASHITA RIVER NEAR CLINTON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	85.3	60.1	37.3	49.7	57.3	74.8	81.6	195	226	101	64.9	73.6
MAX	1477	494	212	300	335	418	406	1175	1169	705	342	326
(WY)	1987	1987	1987	1987	1988	1987	1987	1982	1989	1989	1987	1988
MIN	3.30	4.23	5.68	4.78	7.00	6.24	9.64	4.10	4.44	6.42	6.01	5.87
(WY)	1967	1964	1964	1971	1967	1968	1971	1967	1966	1966	1965	1964

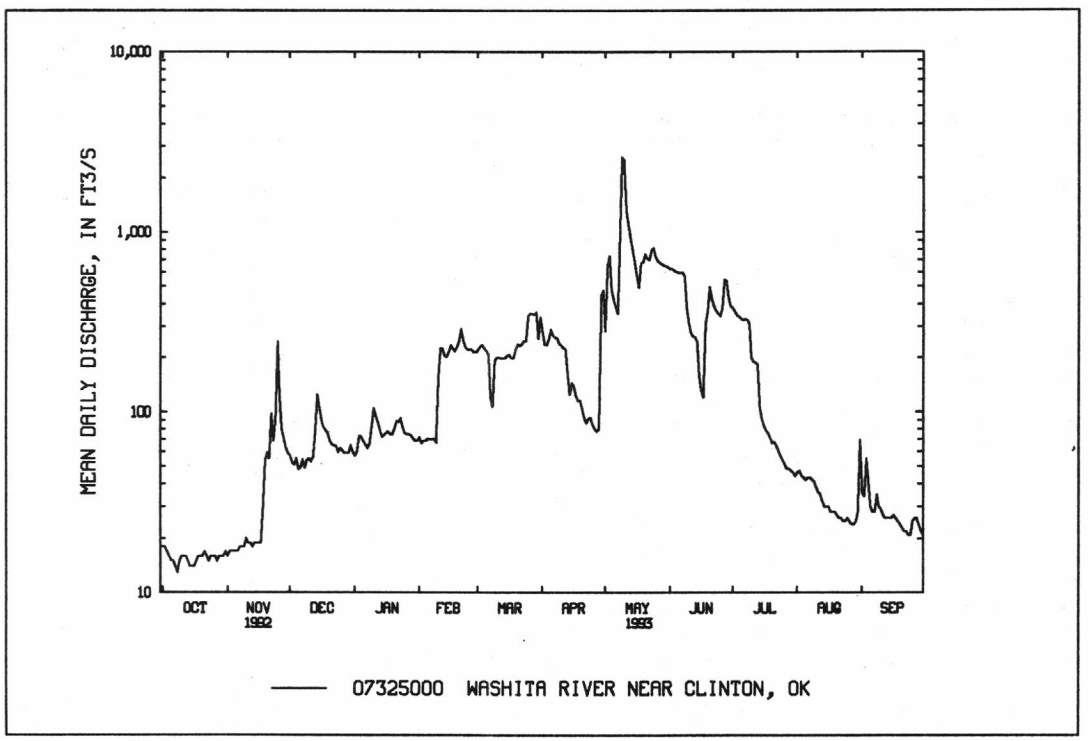
SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	33221		68541			
ANNUAL MEAN	90.8		188		[a]92.2	
HIGHEST ANNUAL MEAN					504	1987
LOWEST ANNUAL MEAN					13.8	1967
HIGHEST DAILY MEAN	502	Apr 20	2590	May 9	7710	Oct 3 1986
LOWEST DAILY MEAN	13	Oct 8	13	Oct 8	[b].00	Jul 26 1964
ANNUAL SEVEN-DAY MINIMUM	15	Oct 4	15	Oct 4	.04	Jul 23 1964
INSTANTANEOUS PEAK FLOW			2780	May 9	[c]10600	Oct 3 1986
INSTANTANEOUS PEAK STAGE			20.95	May 9	[d]25.93	Oct 3 1986
ANNUAL RUNOFF (AC-FT)	65890		136000		66830	
10 PERCENT EXCEEDS	188		496		215	
50 PERCENT EXCEEDS	67		76		27	
90 PERCENT EXCEEDS	18		18		7.2	

[a]Prior to regulation, water years 1936-60, 146 ft^3/s.

[b]Also occurred at times in 1952-56, 1964, 1966.

[c]Maximum discharge for period of record, 66,800 ft^3/s, May 16, 1951, from rating curve extended above 7,900 ft^3/s, by contracted-opening measurement of peak flow.

[d]Maximum gage height for period of record, 31.09 ft, May 16, 1951.



07325500 WASHITA RIVER AT CARNEGIE, OK

LOCATION.--Lat 35°07'02", long 98°33'49", in NW 1/4 NW 1/4 sec.3, T.7 N., R.13 W., Caddo County, Hydrologic Unit 11130302, on downstream side of right pier of bridge on State Highway 9, 1,300 ft upstream from Running Creek, 2.7 mi east of Carnegie, and at mile 353.9. Records include flow of Running Creek.

DRAINAGE AREA.--3,129 mi^2, includes that of Running Creek.

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

REVISED RECORDS.--WSP 1087: 1938. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,244.23 ft above sea level. Prior to October 1942, water-stage recorder at site 8.0 mi upstream at datum 24.57 ft higher. Prior to Aug. 7, 1985, datum 5.00 ft higher.

REMARKS.--Records good. Some diversion for irrigation upstream from station. October 1942 to May 1949, occasional fluctuation caused by powerplant at Carnegie, 7.5 mi upstream from station. Flow regulated by Foss Reservoir since February 1961 (station 07324300), and by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at site.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 23, 1903, reached a stage of about 29 ft, at former site and datum, from information provided by local resident; flood of May 18, 1949, reached a stage of 20.9 ft, from floodmark, at that site and datum.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	130	107	672	410	410	719	736	6780	1510	e800	218	309
2	125	107	564	417	405	851	714	3730	1430	e710	215	243
3	123	106	488	501	402	864	639	4380	1360	e660	242	210
4	122	107	432	738	396	746	669	3680	1290	e630	236	283
5	121	106	395	703	388	677	835	2710	1220	e600	224	242
6	118	106	374	567	385	631	762	2240	1180	744	218	194
7	113	108	367	504	382	600	725	2040	1170	1200	220	170
8	103	111	354	474	376	574	677	5020	1190	1560	221	160
9	103	112	643	663	369	483	628	16000	1190	1050	216	160
10	102	114	1560	1470	374	441	598	24500	1130	868	209	187
11	100	135	1070	1130	407	490	566	16300	1090	800	199	176
12	105	361	693	835	505	499	538	11900	918	e680	192	153
13	105	317	770	725	550	493	515	9530	846	e600	184	171
14	104	216	3330	633	540	482	841	7380	797	e840	176	174
15	99	164	4820	584	639	477	2730	5930	777	e1180	169	176
16	96	144	3640	559	1690	470	2620	4690	757	1220	163	174
17	97	134	1950	536	1510	470	1540	4060	679	858	156	162
18	96	132	1490	511	892	470	1100	3560	621	700	150	154
19	100	617	1210	492	806	549	923	3110	588	599	147	147
20	102	907	1000	601	746	1060	789	2930	949	504	142	140
21	105	820	844	928	785	797	680	2720	920	431	139	137
22	104	2500	749	977	749	828	606	2550	950	385	137	131
23	103	2920	665	795	717	1130	518	2420	874	361	135	125
24	102	2020	599	675	651	938	478	3110	826	352	142	122
25	100	2680	547	591	632	773	462	3370	2110	300	141	124
26	99	2640	509	539	629	701	427	2410	1270	277	140	122
27	98	1540	479	508	605	722	395	2050	934	259	137	123
28	101	1110	465	486	601	711	419	1870	975	244	132	125
29	118	928	447	472	---	693	5460	1760	1030	236	129	123
30	117	795	437	439	---	730	7330	1700	965	229	134	122
31	111	---	419	418	---	879	---	1610	---	223	169	---
TOTAL	3322	22164	31982	19881	17541	20948	35920	166040	31546	20100	5432	5039
MEAN	107	739	1032	641	626	676	1197	5356	1052	648	175	168
MAX	130	2920	4820	1470	1690	1130	7330	24500	2110	1560	242	309
MIN	96	106	354	410	369	441	395	1610	588	223	129	122
AC-FT	6590	43960	63440	39430	34790	41550	71250	329300	62570	39870	10770	9990

e Estimated

07325500 WASHITA RIVER AT CARNEGIE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

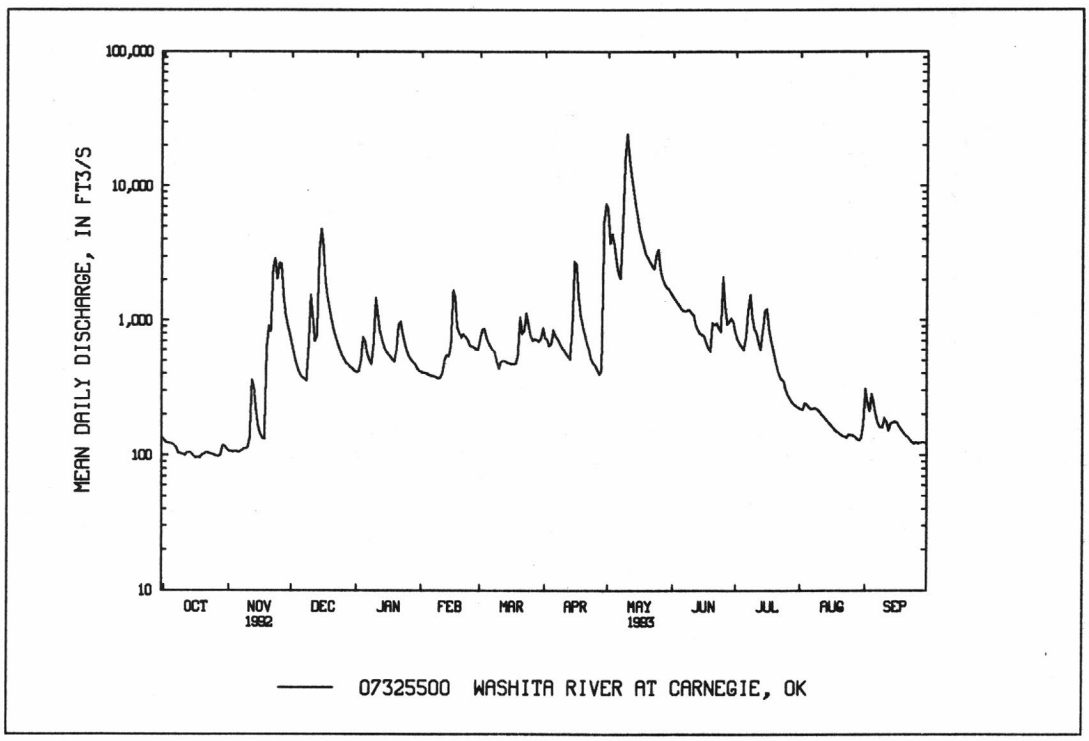
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	421	262	189	180	188	307	297	806	732	262	173	309
MAX	5311	1471	1032	713	853	1680	1270	5356	3638	1150	557	1588
(WY)	1987	1987	1993	1988	1987	1988	1973	1993	1989	1975	1975	1965
MIN	21.8	27.3	33.6	36.0	36.6	34.2	11.1	10.0	94.0	7.10	14.6	15.6
(WY)	1973	1971	1964	1971	1971	1971	1971	1971	1984	1964	1972	1984

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	176716		379915			
ANNUAL MEAN	483		1041		[a]344	
HIGHEST ANNUAL MEAN					1432	1987
LOWEST ANNUAL MEAN					72.8	1967
HIGHEST DAILY MEAN	4820	Dec 15	24500	May 10	24500	May 10 1993
LOWEST DAILY MEAN	96	Oct 16	96	Oct 16,18	[b].00	Jul 20 1964
ANNUAL SEVEN-DAY MINIMUM	99	Oct 14	99	Oct 14	.00	Jul 20 1964
INSTANTANEOUS PEAK FLOW			25500	May 10	[c]40600	Oct 20 1983
INSTANTANEOUS PEAK STAGE			30.68	May 10	31.70	Oct 20 1983
ANNUAL RUNOFF (AC-FT)	350500		753600		249500	
10 PERCENT EXCEEDS	1020		2160		730	
50 PERCENT EXCEEDS	294		559		122	
90 PERCENT EXCEEDS	120		120		33	

[a]Prior to regulation, water years 1938-60, 314 ft^3/s.

[b]Also occurred at times 1956 and 1964.

[c]Maximum discharge for period of record, 50,000 ft^3/s, May 18, 1949, from rating curve extended above 35,000 ft^3/s on basis of contracted-opening measurement.



07325800 COBB CREEK NEAR EAKLY, OK

LOCATION.--Lat 35°17'26", long 98°35'38", in NW 1/4 NE 1/4 sec.5, T.9 N., R.13 W., Caddo County, Hydrologic Unit 11130302, near left downstream abutment of bridge, on State Highway 152, 0.5 mi downstream from Fivemile Creek, 2.4 mi southwest of Eakly, 3.0 mi upstream from Fort Cobb Reservoir, and at mile 22.9.

DRAINAGE AREA.--132 mi^2.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,369.70 ft above sea level. Oct. 29, 1980, to Aug. 11, 1982, gage at site 0.5 mi downstream at same datum.

REMARKS.--Records fair.. Flow regulated since 1957 by numerous floodwater-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	25	32	29	29	45	32	36	33	19	14	19
2	13	25	29	38	30	44	29	230	31	19	15	17
3	12	24	28	69	30	36	28	79	29	18	16	34
4	12	91	26	48	29	33	46	47	29	16	15	15
5	12	178	26	37	31	31	37	37	28	16	16	12
6	12	165	30	34	30	30	34	38	28	32	18	10
7	12	161	34	34	29	29	32	81	28	60	18	11
8	14	166	30	34	28	29	30	3590	32	35	18	12
9	15	153	190	236	27	29	28	e1220	47	26	18	13
10	15	154	84	113	43	28	27	648	49	21	16	11
11	14	160	49	69	39	27	26	397	36	18	15	9.9
12	14	52	41	61	34	26	26	355	33	17	14	9.2
13	14	37	288	48	30	26	28	294	31	39	12	12
14	14	33	757	42	29	26	150	276	29	43	12	16
15	15	32	272	41	86	26	129	268	27	40	12	13
16	15	37	123	39	100	27	48	250	28	33	11	12
17	16	32	77	36	45	26	36	158	27	28	11	11
18	16	33	58	34	35	27	33	132	26	24	10	10
19	19	276	49	36	43	263	30	101	27	23	9.9	9.9
20	19	78	42	60	72	79	27	81	48	21	9.9	9.9
21	18	124	39	75	48	56	25	61	32	21	10	10
22	18	177	37	49	39	105	24	50	29	24	10	9.7
23	19	86	35	42	35	59	24	255	27	24	10	9.2
24	19	276	32	36	32	46	24	230	48	23	30	9.6
25	20	282	32	33	34	40	23	102	100	20	21	11
26	20	100	31	31	32	36	23	73	30	19	16	11
27	21	59	32	32	31	35	23	49	26	17	14	11
28	21	45	31	31	36	33	22	41	23	16	14	10
29	38	38	34	31	---	32	84	127	21	15	13	9.7
30	29	34	33	29	---	42	37	51	19	15	24	9.4
31	26	---	31	29	---	36	---	36	---	15	76	---
TOTAL	535	3133	2632	1556	1106	1407	1165	9393	1001	757	518.8	367.5
MEAN	17.3	104	84.9	50.2	39.5	45.4	38.8	303	33.4	24.4	16.7	12.2
MAX	38	282	757	236	100	263	150	3590	100	60	76	34
MIN	12	24	26	29	27	26	22	36	19	15	9.9	9.2
AC-FT	1060	6210	5220	3090	2190	2790	2310	18630	1990	1500	1030	729

e Estimated

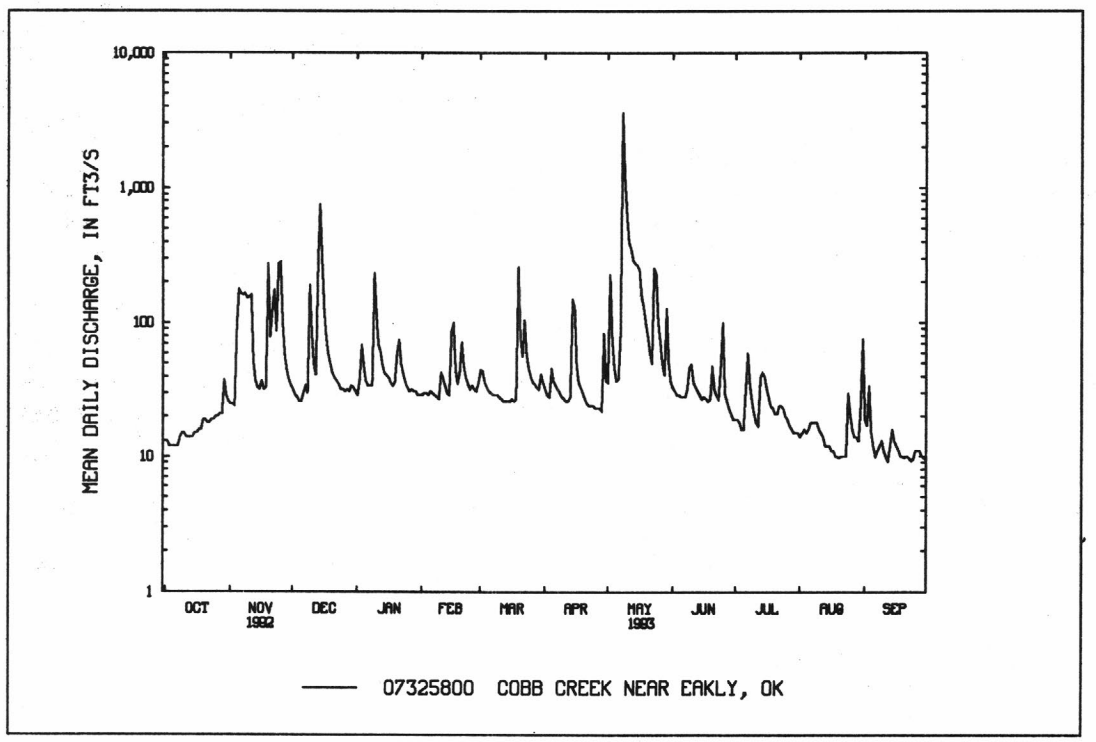
07325800 COBB CREEK NEAR EAKLY, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	30.3	23.9	21.3	19.0	18.1	26.9	21.9	63.3	43.0	14.7	14.6	20.9
MAX	317	104	84.9	50.2	39.5	112	84.2	303	186	85.1	86.0	161
(WY)	1987	1993	1993	1993	1993	1973	1973	1993	1989	1975	1974	1986
MIN	4.34	6.11	4.88	8.78	8.99	8.38	5.27	2.79	7.84	1.01	.90	2.15
(WY)	1973	1979	1979	1981	1981	1971	1971	1971	1984	1974	1972	1972

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1969-93	
ANNUAL TOTAL	13755		23571.3			
ANNUAL MEAN	37.6		64.6		26.5	
HIGHEST ANNUAL MEAN					91.0	1987
LOWEST ANNUAL MEAN					10.1	1979
HIGHEST DAILY MEAN	757	Dec 14	3590	May 8	3750	Sep 29 1986
LOWEST DAILY MEAN	11	Jul 13	9.2	Sep 12,23	[a].00	Aug 18 1970
ANNUAL SEVEN-DAY MINIMUM	12	Jul 7	9.8	Sep 18	.04	May 24 1971
INSTANTANEOUS PEAK FLOW			10900	May 8	10900	May 8 1993
INSTANTANEOUS PEAK STAGE			[b]21.93	May 8	24.38	Sep 29 1986
ANNUAL RUNOFF (AC-FT)	27280		46750		19220	
10 PERCENT EXCEEDS	64		117		34	
50 PERCENT EXCEEDS	21		30		13	
90 PERCENT EXCEEDS	14		12		4.2	

[a]No flow at times in most years.
[b]From highwater mark.



07325900 FORT COBB RESERVOIR NEAR FORT COBB, OK

LOCATION.--Lat 35°09'58", long 98°27'23", in SE 1/4 NW 1/4 sec.22, T.8 N., R.12 W., Caddo County, Hydrologic Unit 11130302, in control house at right center of dam on Cobb Creek, 4.0 mi northwest of Fort Cobb, and at mile 7.5.

DRAINAGE AREA.--304 mi^2.

PERIOD OF RECORD.--March 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Bureau of Reclamation). Prior to October, 1961, nonrecording gage at same datum.

REMARKS.--Reservoir is formed by earth dam. Outlet consists of two sets of controlled 5- by 5-foot steel gates and an uncontrolled concrete spillway. Storage began Mar. 30, 1959. Conservation pool was first filled in June 1962. Capacity, 143,700 acre-ft at elevation 1,354.8 ft, crest of drop inlet, 80,010 acre-ft at elevation 1,342.0 ft, conservation pool, and 1,664 acre-ft at elevation 1,300.0 ft, crest of gated outlet. Figures given herein represent total contents. Reservoir is used for flood control, for municipal and industrial water supply, and for irrigation releases. Revised capacity table used since May 1, 1964. U.S. Army Corps of Engineers' satellite telemeter at station.

COOPERATION.--Elevations and data on diversions provided by Fort Cobb Reservoir Master Conservancy District.

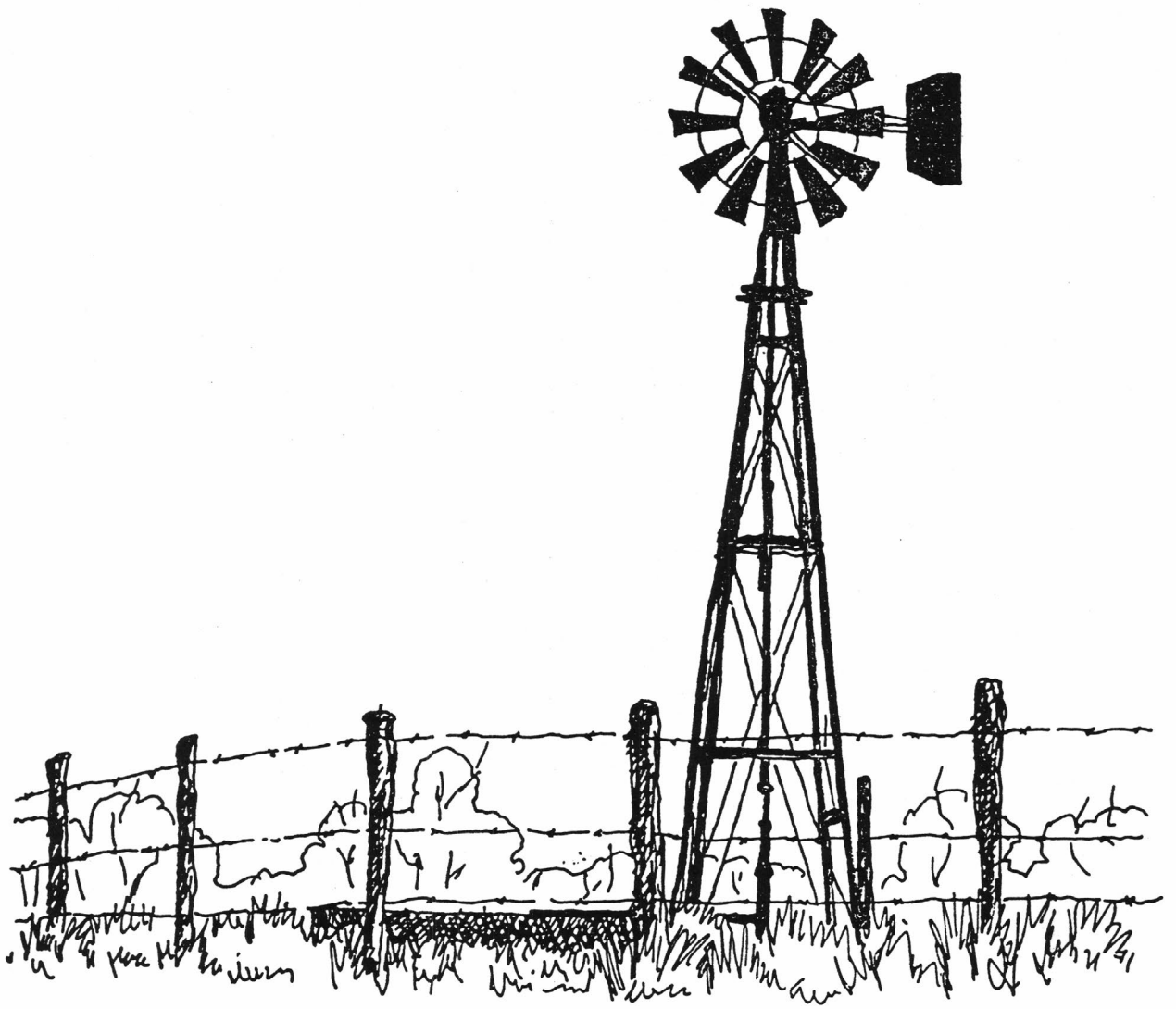
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 122,700 acre-ft, May 17, 1993, elevation, 1,351.07 ft; minimum since conservation pool was first filled, 54,650 acre-ft, Oct. 19, 1972, elevation 1,335.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 122,700 acre-ft, May 17, elevation, 1,351.07 ft; minimum, 78,120 acre-ft, Aug. 24, elevation 1,341.53 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30	1,341.76	79,040	-	-
Oct. 31	1,341.60	78,400	-640	827
Nov. 30	1,342.66	82,760	+4,360	559
Dec. 31	1,342.09	80,380	-2,380	551
CAL YR 92	-	-	-1,130	7,723
Jan. 31	1,342.07	80,300	-80	660
Feb. 28	1,342.10	80,420	+120	434
Mar. 31	1,342.01	80,050	-370	577
Apr. 30	1,342.56	82,340	+2,290	397
May 31	1,347.18	103,000	+20,660	482
June 30	1,342.14	80,590	-22,410	452
July 31	1,342.00	80,010	-580	803
Aug. 31	1,341.72	78,880	-1,130	858
Sept. 30	1,341.88	79,530	+650	898
WTR YR 93	-	-	+490	7,498

* Elevation at 2400



07326000 COBB CREEK NEAR FORT COBB, OK

LOCATION.--Lat 35°08'37", long 98°26'33", in NE 1/4 NE 1/4 sec.27, T.8 N., R.12 W., Caddo County, Hydrologic Unit 11130302, on left bank 10 ft upstream from county road bridge, 0.3 mi upstream from Punjo Creek, 1.2 mi downstream from Fort Cobb Dam, 3.0 mi north of Fort Cobb, and at mile 5.8.

DRAINAGE AREA.--313 mi^2. Area at site used prior to Oct. 1, 1969, 319 mi^2.

PERIOD OF RECORD.--October 1939 to current year. Monthly discharge only for some periods, published in WSP 1311. Prior to October 1960, published as Pond Creek near Fort Cobb.

REVISED RECORDS.--WSP 1087: 1938. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,254.49 ft above sea level (levels by U.S. Bureau of Reclamation). Oct.16, 1969, to Sept. 30, 1982, gage at same site and datum 5.00 ft higher. Oct. 1, 1939, to Aug. 29, 1940, nonrecording gage and Aug. 30, 1940, to Sept. 30, 1969, water-stage recorder at site 0.8 mi downstream at datum 1.92 ft lower.

REMARKS.--Records fair. Flow regulated since March 1959, by Fort Cobb Reservoir (station 07325900).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 15, 1937, reached a stage of 19.3 ft, site and datum used in 1939, from information by local resident.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.8	3.2	222	e49	76	128	119	5.8	e1000	8.8	5.6	4.5
2	2.7	3.2	222	e51	75	127	44	9.3	e1000	8.4	5.4	4.6
3	2.7	3.2	222	e52	75	127	6.0	5.7	e995	8.0	5.2	4.8
4	2.7	3.2	222	e50	76	84	6.3	54	e990	7.8	5.2	4.3
5	2.7	3.2	222	e46	76	41	5.7	210	e995	11	5.2	4.3
6	2.7	3.2	223	e46	76	40	5.7	211	e990	45	5.2	4.3
7	2.8	3.2	223	e47	76	40	5.6	215	e985	132	5.2	4.3
8	2.9	3.2	110	e70	76	40	5.4	515	e975	153	5.2	4.4
9	3.2	3.5	6.9	e90	76	40	5.0	358	e850	165	5.1	4.3
10	3.2	3.7	41	e84	77	101	5.0	76	e775	116	4.9	4.3
11	3.3	3.8	78	e83	76	89	5.0	63	e730	117	4.9	4.3
12	3.4	3.9	78	e216	76	6.4	98	58	e620	60	4.9	4.3
13	3.4	3.8	85	e360	76	6.0	181	54	e450	9.4	4.9	5.9
14	3.8	3.6	53	e366	76	6.0	192	52	e402	8.8	4.8	4.7
15	3.4	3.5	6.3	e199	79	5.9	183	50	252	8.3	4.8	4.5
16	3.2	3.5	5.2	e53	77	5.8	183	49	109	63	4.8	4.5
17	3.2	3.5	75	e52	82	5.6	182	225	7.3	117	4.7	4.5
18	3.2	3.7	247	e54	111	5.6	183	440	6.1	115	4.6	4.5
19	3.2	6.9	e343	e56	104	69	183	543	5.7	57	4.6	4.5
20	3.0	3.7	e347	e54	72	136	149	615	6.2	7.2	4.6	4.4
21	2.8	4.2	e354	e107	72	136	89	750	36	7.0	4.6	4.3
22	2.9	4.5	e356	e160	74	138	43	861	115	6.9	4.4	4.3
23	3.2	115	e354	e158	74	137	14	870	117	6.7	4.4	4.3
24	3.2	231	e359	e152	74	137	5.5	876	119	6.4	5.2	4.3
25	3.2	223	e357	140	74	137	5.2	868	177	6.3	4.4	4.4
26	3.2	222	e353	e105	101	137	5.0	e910	223	6.2	4.4	4.3
27	3.3	222	e357	e55	126	138	5.0	e980	222	6.2	4.4	4.3
28	3.4	222	e269	e50	128	169	11	e1000	214	6.1	4.4	4.3
29	3.5	222	e119	76	---	168	77	e1000	104	6.0	4.4	4.3
30	3.2	222	e46	76	---	169	6.3	e1010	9.5	5.9	4.4	4.3
31	3.2	---	e50	76	---	168	---	e1010	---	5.7	4.5	---
TOTAL	96.6	1760.4	6005.4	3233	2311	2737.3	2007.7	13943.8	13479.8	1287.1	149.3	133.3
MEAN	3.12	58.7	194	104	82.5	88.3	66.9	450	449	41.5	4.82	4.44
MAX	3.8	231	359	366	128	169	192	1010	1000	165	5.6	5.9
MIN	2.7	3.2	5.2	46	72	5.6	5.0	5.7	5.7	5.7	4.4	4.3
AC-FT	192	3490	11910	6410	4580	5430	3980	27660	26740	2550	296	264

e Estimated

07326000 COBB CREEK NEAR FORT COBB, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	26.9	32.8	19.8	24.6	21.0	32.1	23.0	42.9	119	28.9	15.9	18.3
MAX	345	538	194	139	131	312	169	450	779	256	211	157
(WY)	1987	1987	1993	1969	1975	1990	1990	1993	1987	1989	1975	1965
MIN	1.41	1.62	1.57	1.99	2.14	2.12	2.01	1.50	1.90	.78	1.48	1.60
(WY)	1985	1973	1973	1977	1981	1977	1985	1985	1972	1985	1981	1978

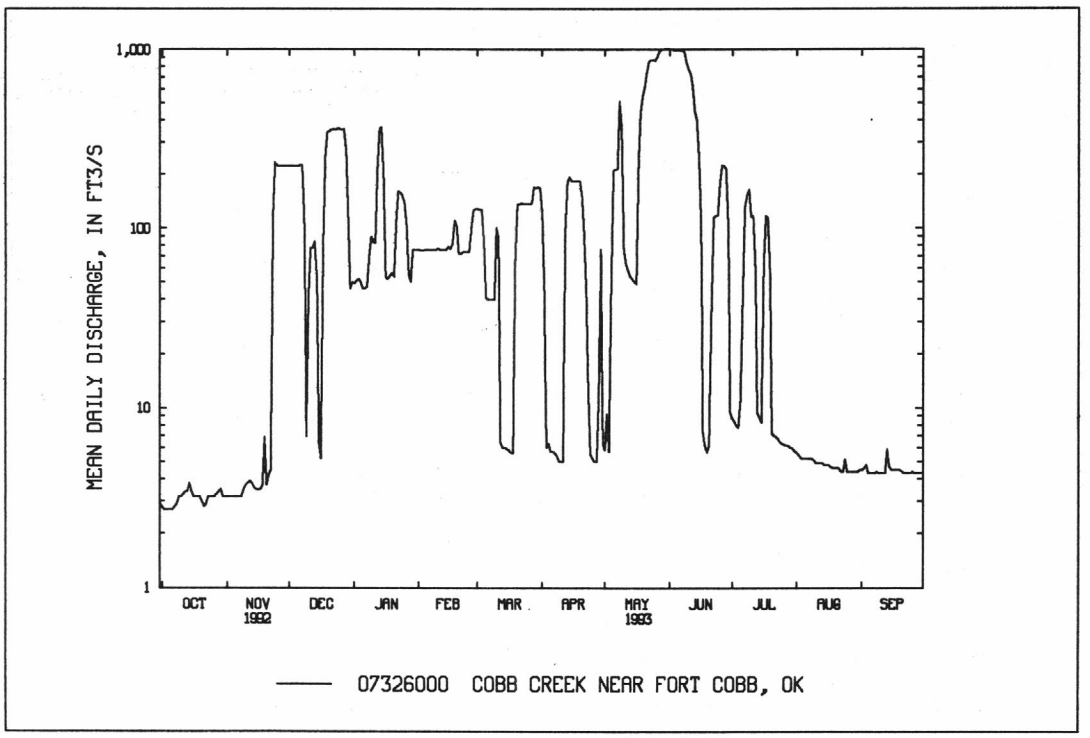
SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1963-93	
ANNUAL TOTAL	21094.0		47144.7			
ANNUAL MEAN	57.6		129		[a]33.7	
HIGHEST ANNUAL MEAN					176	1987
LOWEST ANNUAL MEAN					2.34	1981
HIGHEST DAILY MEAN	359	Dec 24	1010	May 30	1270	Jun 23 1987
LOWEST DAILY MEAN	2.7	Oct 2	2.7	Oct 2-6	[b].20	Jul 20 1981
ANNUAL SEVEN-DAY MINIMUM	2.7	Oct 1	2.7	Oct 1	.20	Jul 20 1981
INSTANTANEOUS PEAK FLOW			1370	May 8	[c]1370	May 8 1993
INSTANTANEOUS PEAK STAGE			15.81	May 8	[d]18.44	May 15 1986
ANNUAL RUNOFF (AC-FT)	41840		93510		24390	
10 PERCENT EXCEEDS	157		355		58	
50 PERCENT EXCEEDS	8.0		49		2.9	
90 PERCENT EXCEEDS	3.2		3.4		1.9	

[a]Prior to regulation by Fort Cobb Reservoir, water years 1940-58, 50.2 ft^3/s.

[b]Minimum daily discharge also occurred Sept. 20, 24-28, 1956.

[c]Maximum discharge for period of record, 35,000 ft3/s, May 17, 1949, from rating curve extended above 4,3000 ft3/s on basis of contracted opening measurement.

[d]Maximum gage height for period of record, 18.72 ft, May 17, 1949, from high-water mark, at former site and datum.



07326500 WASHITA RIVER AT ANADARKO, OK

LOCATION.--Lat 35°05'03", long 98°14'35", in NW 1/4 sec.15, T.7 N., R.10 W., Caddo County, Hydrologic Unit 11130302 on right downstream bank at bridge on U.S. Highway 281 at north edge of Anadarko, 8.1 mi upstream from Sugar Creek, and at mile 305.2.

DRAINAGE AREA.--3,656 mi^2.

PERIOD OF RECORD.--October 1902 to September 1908; June 1924 to June 1925, published as "near Anadarko", October 1935 to February 1938; October 1963 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1311: 1903, 1907-08, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,150.00 ft above sea level. October 26, 1902, to June 30, 1908, nonrecording gage at former bridge 125 ft downstream at datum estimated to be 2.8 ft higher. May 25, 1924, to June 30, 1925, nonrecording gage at county road bridge 14 mi downstream at different datum. Jan. 10, 1936, to Mar. 7, 1938, non-recording gage on upstream side of bridge on U.S. Highway 281 at datum 1.88 ft higher. October 1963 to March 1989 gage located 100 ft upstream at same datum.

REMARKS.--Records good. Flow regulated by low-water dams upstream and since March 1959, by Fort Cobb Reservoir (station 07325900), since February 1961, by Foss Reservoir (station 07324300), and by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1949, reached an elevation of 1,176.7 ft, from floodmark, at right bank on downstream side of bridge on U.S. Highway 281.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	179	160	999	656	664	928	1120	6440	2470	927	305	219
2	175	158	871	664	658	1080	912	5780	2340	837	305	308
3	170	157	769	686	656	1170	804	4400	2250	791	296	326
4	165	158	711	769	654	1130	723	4430	2210	762	307	270
5	163	158	666	936	652	936	790	3730	2170	746	305	292
6	161	159	637	879	635	824	910	3100	2150	1690	298	309
7	159	160	633	773	627	787	835	2730	2110	1490	290	252
8	155	160	627	740	621	762	798	3660	2080	1750	289	233
9	151	160	573	808	613	742	743	7470	2040	1580	287	220
10	149	170	1010	1190	621	660	697	10100	2000	1180	283	215
11	147	228	1500	1660	639	687	667	22500	1920	962	276	222
12	149	200	1050	1300	649	685	639	13800	1810	870	266	234
13	148	343	906	1240	736	593	737	11000	1610	729	256	227
14	148	368	2130	1240	776	582	960	9860	1440	663	249	252
15	147	282	4200	1140	851	573	2090	8490	1350	799	239	229
16	147	236	4540	889	1250	568	2960	6760	1220	1310	235	226
17	145	213	3140	763	1970	561	2520	4620	1000	1340	227	223
18	146	203	2080	744	1560	561	1650	4120	830	1010	218	214
19	148	320	1850	753	1140	639	1340	3690	774	863	211	207
20	148	894	1620	805	1010	904	1170	3440	804	717	208	203
21	149	952	1430	966	947	1300	972	3290	1090	585	205	198
22	149	1330	1290	1280	967	1090	816	3220	1050	519	199	192
23	150	2730	1220	1300	939	1240	685	3100	1110	476	197	187
24	150	2700	1130	1130	918	1380	606	3080	1050	449	288	184
25	151	2620	1060	1010	903	1140	571	3550	1140	443	253	186
26	149	2970	1010	907	885	992	537	3490	1920	403	217	183
27	148	2440	1080	802	898	921	500	2940	1380	379	205	181
28	149	1680	973	745	892	963	467	2780	1180	356	203	180
29	158	1350	844	709	---	988	3510	2730	1160	335	201	180
30	164	1160	719	698	---	1040	6220	2720	1080	321	195	176
31	170	---	656	688	---	1050	---	2610	---	311	195	---
TOTAL	4787	24819	41924	28870	24331	27476	37949	173630	46738	25593	7708	6728
MEAN	154	827	1352	931	869	886	1265	5601	1558	826	249	224
MAX	179	2970	4540	1660	1970	1380	6220	22500	2470	1750	307	326
MIN	145	157	573	656	613	561	467	2610	774	311	195	176
AC-FT	9500	49230	83160	57260	48260	54500	75270	344400	92700	50760	15290	13340

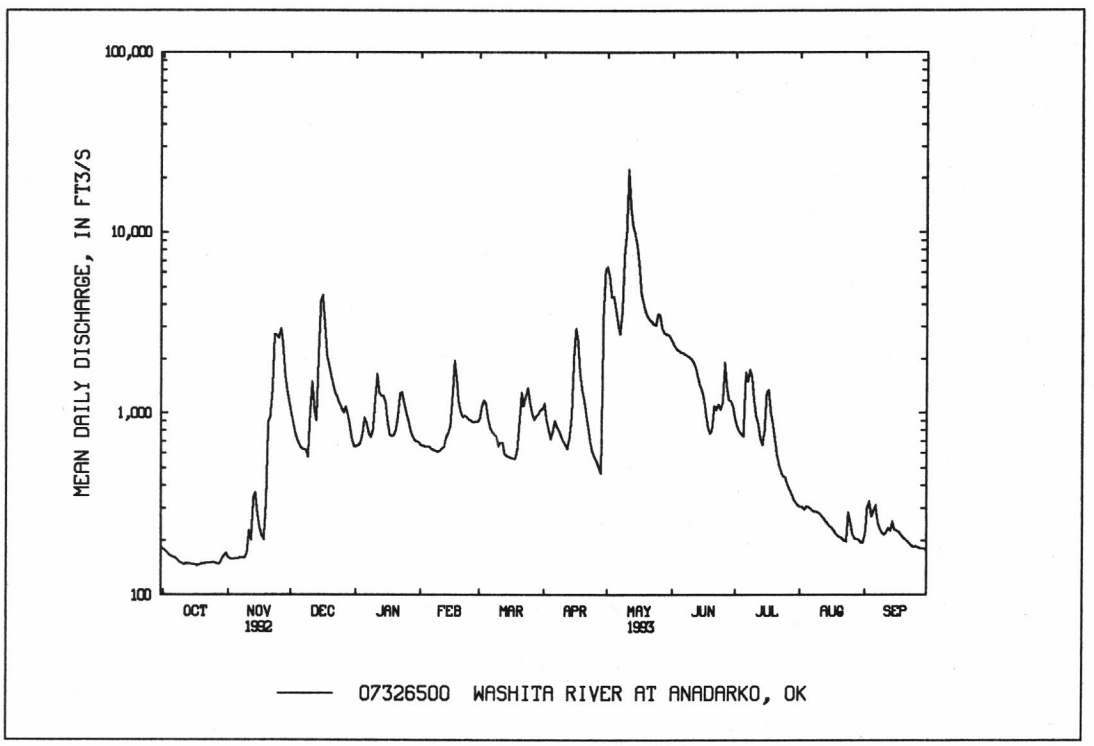
07326500 WASHITA RIVER AT ANADARKO, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	491	331	250	245	249	385	379	904	962	355	225	336
MAX	5480	2205	1352	955	1089	1903	1471	5601	4498	1459	961	1450
(WY)	1987	1987	1993	1988	1987	1990	1973	1993	1989	1989	1975	1965
MIN	21.2	37.0	41.6	52.0	55.4	50.6	16.7	9.57	85.7	12.6	19.7	32.2
(WY)	1973	1971	1971	1971	1971	1971	1971	1971	1967	1964	1972	1984

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1964-93	
ANNUAL TOTAL	225184		450553			
ANNUAL MEAN	615		1234		[a]426	
HIGHEST ANNUAL MEAN					1788	1987
LOWEST ANNUAL MEAN					72.7	1971
HIGHEST DAILY MEAN	4540	Dec 16	22500	May 11	37700	Oct 21 1983
LOWEST DAILY MEAN	145	Oct 17	145	Oct 17	.00	Aug 1 1964
ANNUAL SEVEN-DAY MINIMUM	147	Oct 13	147	Oct 13	.77	Jul 19 1964
INSTANTANEOUS PEAK FLOW			28300	May 11	44700	Oct 21 1983
INSTANTANEOUS PEAK STAGE			25.03	May 11	[b]25.20	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	446700		893700		309000	
10 PERCENT EXCEEDS	1250		2730		977	
50 PERCENT EXCEEDS	415		763		156	
90 PERCENT EXCEEDS	168		168		47	

[a]Prior to regulations, water years 1903-08, 1936-37, 595 ft^3/s.
[b]From high-water mark.



07327050 SPRING CREEK NEAR GRACEMONT, OK

LOCATION.--Lat 35°11'21", long 98°10'34", in NW 1/4 NW 1/4 sec.8, T.8 N., R.9 W., Caddo County, Hydrologic Unit 11130302, near main channel on downstream side of county road bridge, 6.8 mi east of Gracemont, and at mile 8.4.

DRAINAGE AREA.--34.4 mi^2.

PERIOD OF RECORD.--June 1991 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,198.00 ft.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e2.1	e.96	e7.0	e15	e12	23	e8.1	e7.4	e4.3	e2.0	e.74	e3.0
2	e1.8	e.96	e6.7	17	e12	20	e8.2	44	e4.1	e1.9	e.75	e1.5
3	e1.5	e.96	e6.5	25	e11	e8.6	e8.0	e8.6	e3.9	e1.8	e.74	e2.0
4	e1.3	e.95	e6.0	e15	e11	e8.2	18	e8.0	e3.7	e1.8	e.75	e1.5
5	e1.2	e.95	e5.8	e13	32	e7.9	e7.9	e7.4	e3.5	1.7	e.74	e1.5
6	e1.1	e.95	e12	e12	e12	e9.6	e7.6	e26	e3.4	3.5	e.73	e1.5
7	e1.1	e.95	e10	e13	e11	e8.0	e7.5	e7.4	3.3	36	e.75	e1.5
8	e1.0	e.95	e15	e15	11	e7.8	e7.6	e270	20	e.92	e.74	e1.4
9	e1.0	e.95	123	36	e10	e7.9	7.6	e15	e3.3	e.84	e.73	e1.4
10	e1.0	53	24	16	28	e7.8	e7.2	e7.6	e3.2	e.81	e.73	e1.4
11	e1.0	68	14	e15	20	e7.7	e7.0	e7.4	e12	e.80	e.75	e1.4
12	e.99	19	14	e14	14	e7.6	e7.1	e32	e3.2	e.79	e.76	e1.4
13	e.99	e10	37	e13	e12	e7.6	e7.0	e7.6	e3.1	e1.2	e.75	4.2
14	e1.0	e8.4	e47	e12	12	e7.7	49	e7.5	e3.0	e.81	e.74	11
15	e1.0	e7.2	e38	e12	27	e7.6	38	e7.4	e2.9	e1.4	e.73	e1.5
16	1.0	e7.8	e18	e12	23	e7.7	e14	e7.3	e16	e.82	e.75	e1.4
17	e1.0	e8.4	e12	e12	e10	e7.7	e7.0	e15	e2.8	e.78	e.76	e1.4
18	e.99	e11	e11	e12	e9.8	e7.6	e7.1	e7.6	e2.7	e.79	e.75	e1.4
19	e.99	220	e10	17	e10	47	e6.9	e7.1	e2.7	e.80	e.74	e1.4
20	e.99	33	e9.8	37	e11	14	e6.8	e12	212	e.78	e.73	e1.4
21	e.98	35	e9.3	27	e10	e12	e6.9	e6.6	21	e.79	e.74	e1.4
22	e.98	40	e8.8	e24	e10	37	e6.7	e6.2	e5.4	e.80	e.76	e1.4
23	e.98	e17	e8.8	e22	e11	e15	e6.6	e18	4.2	e.78	e.76	e1.4
24	e.97	142	e8.9	e19	20	e7.8	e6.4	e6.2	6.8	e.77	41	e1.4
25	e.97	55	e9.0	e17	25	e7.9	e6.5	e5.9	54	e.76	e1.6	e1.9
26	e.97	e15	e10	e17	e9.3	e8.0	e6.4	e5.7	e2.6	e.70	e1.5	e1.4
27	e.97	e11	e12	e15	e8.0	e8.2	e6.5	e5.5	e2.3	e.73	e1.5	e1.4
28	e.97	e8.8	e14	e14	e7.8	e8.0	9.8	e5.3	e2.2	.76	e1.5	e1.4
29	e.96	e7.8	e15	e13	---	17	47	e5.0	e2.1	e.78	e1.4	e1.4
30	e.96	e7.3	e14	e13	---	38	19	e4.8	e2.1	e.77	e1.4	e1.4
31	e.96	---	e14	e12	---	e8.8	---	e4.6	---	e.76	e7.1	---
TOTAL	33.72	793.28	550.6	526	399.9	398.7	359.4	586.1	415.8	68.64	74.12	57.7
MEAN	1.09	26.4	17.8	17.0	14.3	12.9	12.0	18.9	13.9	2.21	2.39	1.92
MAX	2.1	220	123	37	32	47	49	270	212	36	41	11
MIN	.96	.95	5.8	12	7.8	7.6	6.4	4.6	2.1	.70	.73	1.4
AC-FT	67	1570	1090	1040	793	791	713	1160	825	136	147	114

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1993, BY WATER YEAR (WY)

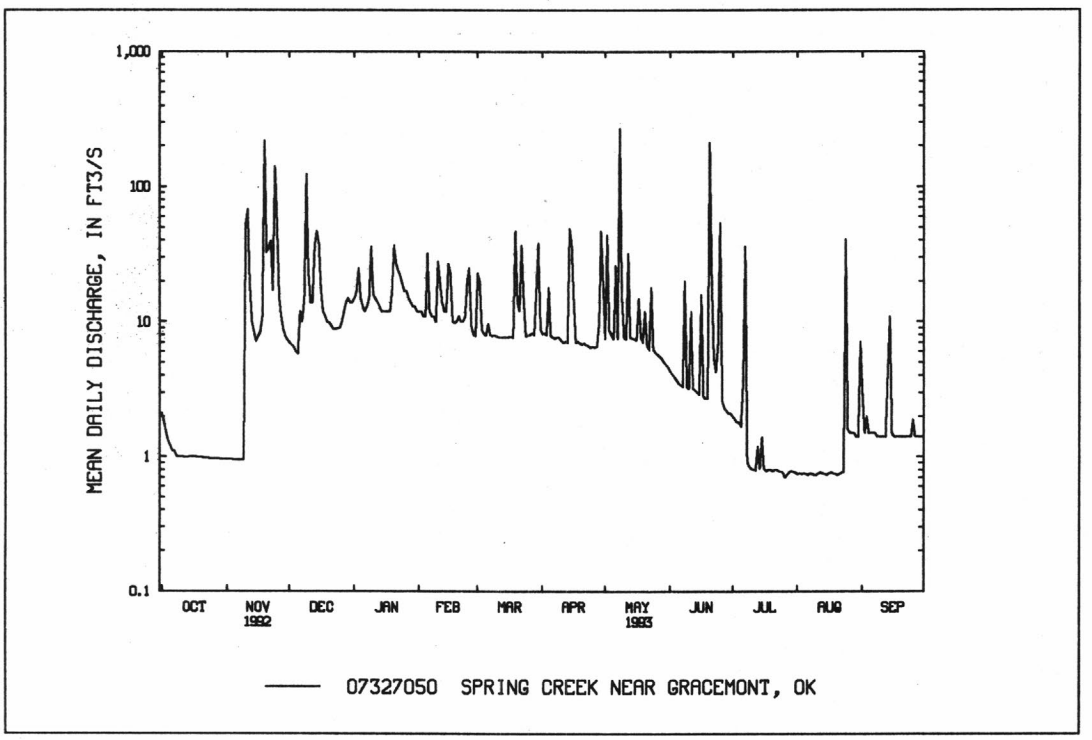
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.97	17.4	23.9	16.6	11.2	13.2	9.72	14.7	14.3	3.65	5.09	5.69
MAX	6.86	26.4	30.0	17.0	14.3	13.6	12.0	18.9	14.7	6.06	11.7	11.5
(WY)	1992	1993	1992	1993	1993	1992	1993	1993	1992	1992	1992	1991
MIN	1.09	8.28	17.8	16.3	8.21	12.9	7.45	10.5	13.9	2.21	1.19	1.92
(WY)	1993	1992	1993	1992	1992	1993	1992	1992	1993	1993	1991	1993

e Estimated

07327050 SPRING CREEK NEAR GRACEMONT, OK--Continued

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1991-93	
ANNUAL TOTAL	4190.40		4263.96			
ANNUAL MEAN	11.4		11.7		11.6	
HIGHEST ANNUAL MEAN					11.7	1993
LOWEST ANNUAL MEAN					11.5	1992
HIGHEST DAILY MEAN	220	Nov 19	270	May 8	279	Dec 19 1991
LOWEST DAILY MEAN	.95	Nov 4	.70	Jul 26	.02	Aug 9,10 1991
ANNUAL SEVEN-DAY MINIMUM	.95	Nov 3	.74	Aug 4	.04	Aug 6 1991
INSTANTANEOUS PEAK FLOW			4480	May 8	4480	May 8 1993
INSTANTANEOUS PEAK STAGE			[a]12.52	May 8	[a]12.52	May 8 1993
ANNUAL RUNOFF (AC-FT)	8310		8460		8390	
10 PERCENT EXCEEDS	22		23		21	
50 PERCENT EXCEEDS	5.1		7.1		4.9	
90 PERCENT EXCEEDS	1.1		.79		.77	

[a]From high-water mark.



07327447 LITTLE WASHITA RIVER NEAR CEMENT, OK

LOCATION.--Lat 34°50'16", long 98°07'27", in NW 1/4 NW 1/4 sec.11, T.4 N., R.9 W., Comanche County, Hydrologic Unit 11130302, on left bank near downstream side of county road bridge, 5 mi south of Cement, 7 mi east northeast of Fletcher, 8 mi northeast of Sterling, and at mile 23.7

DRAINAGE AREA.--61.9 mi^2.

PERIOD OF RECORD.--February 1992 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,183.00 ft above sea level.

REMARKS.--Records fair. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	17	34	39	43	90	62	59	41	30	14	21
2	20	17	34	39	42	82	56	264	40	28	18	19
3	20	17	35	40	42	61	56	99	41	26	20	21
4	20	16	34	39	44	54	69	58	41	24	17	17
5	20	16	34	39	43	51	60	50	38	26	17	14
6	20	16	35	39	43	51	56	90	39	26	17	13
7	20	16	35	38	42	50	54	105	37	29	17	13
8	20	16	74	36	41	49	50	240	38	29	17	14
9	19	17	118	125	40	47	49	802	71	26	16	15
10	20	16	85	e80	55	46	47	387	89	24	15	14
11	20	32	49	e55	52	45	46	215	45	23	14	12
12	21	31	44	e50	44	45	46	115	39	24	12	8.5
13	22	18	373	e48	42	45	41	84	36	27	12	22
14	22	17	414	e46	42	46	175	71	33	31	11	27
15	19	15	196	e45	285	46	164	65	32	31	10	17
16	18	16	99	e44	183	46	69	60	31	27	9.1	14
17	18	16	69	e43	74	44	53	57	30	24	9.1	13
18	18	23	60	e42	58	47	49	56	30	22	9.0	12
19	19	137	56	51	57	81	46	53	36	21	8.6	12
20	21	66	53	94	56	64	42	50	601	20	8.6	12
21	21	61	49	86	52	54	41	49	193	19	8.3	12
22	21	94	46	59	47	81	41	47	82	19	7.7	12
23	20	66	45	53	46	65	41	283	44	18	12	13
24	19	49	41	47	50	55	41	128	37	16	22	14
25	19	97	40	46	61	50	39	66	92	15	20	22
26	19	66	39	46	50	50	37	54	50	15	15	19
27	18	44	38	45	47	54	36	49	46	14	13	15
28	19	40	40	45	60	53	38	47	37	13	12	13
29	20	35	41	43	---	68	319	47	32	12	11	12
30	18	34	42	42	---	188	119	46	30	12	15	12
31	18	---	39	42	---	84	---	44	---	12	20	---
TOTAL	609	1121	2391	1586	1741	1892	2042	3840	2031	683	427.4	454.5
MEAN	19.6	37.4	77.1	51.2	62.2	61.0	68.1	124	67.7	22.0	13.8	15.1
MAX	22	137	414	125	285	188	319	802	601	31	22	27
MIN	18	15	34	36	40	44	36	44	30	12	7.7	8.5
AC-FT	1210	2220	4740	3150	3450	3750	4050	7620	4030	1350	848	902

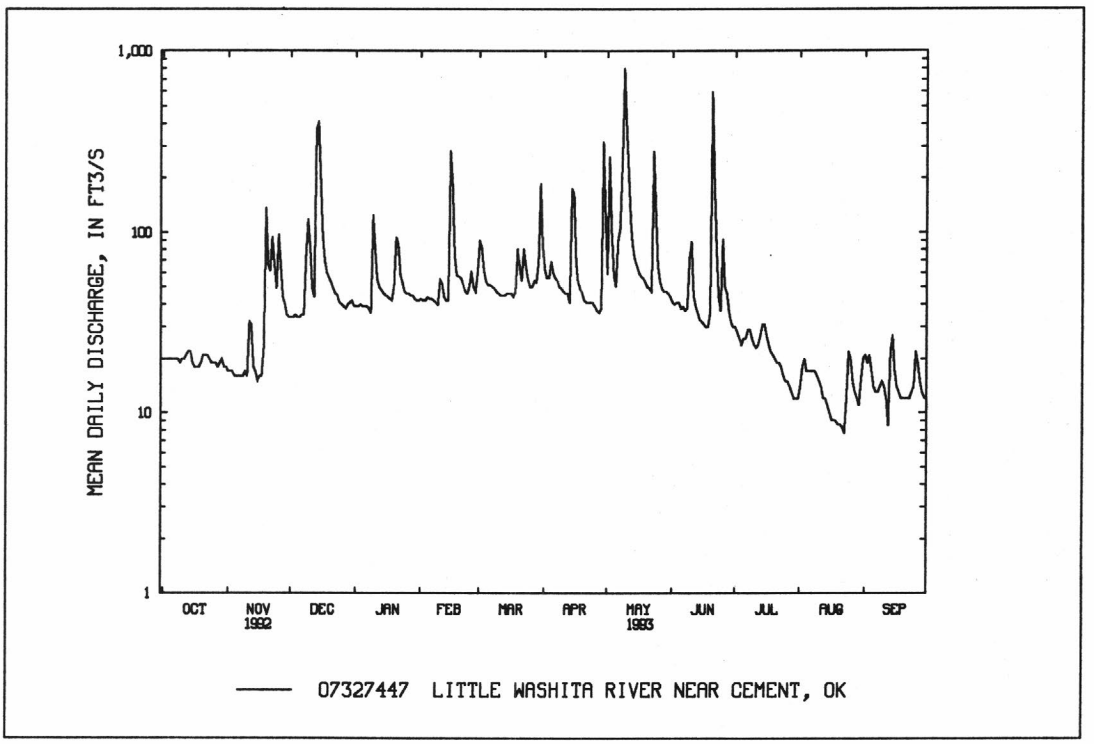
e Estimated

07327447 LITTLE WASHITA RIVER NEAR CEMENT, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	19.6	37.4	77.1	51.2	43.4	44.9	65.0	88.9	74.0	39.8	26.2	23.5
MAX	19.6	37.4	77.1	51.2	62.2	61.0	68.1	124	80.3	57.5	38.7	31.9
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1992	1992	1992	1992
MIN	19.6	37.4	77.1	51.2	25.3	28.7	61.9	53.9	67.7	22.0	13.8	15.1
(WY)	1993	1993	1993	1993	1992	1992	1992	1992	1993	1993	1993	1993

SUMMARY STATISTICS	1993 WATER YEAR		WATER YEARS 1992-93	
ANNUAL TOTAL	18817.9			
ANNUAL MEAN	51.6		51.6	
HIGHEST ANNUAL MEAN			51.6	1993
LOWEST ANNUAL MEAN			51.6	1993
HIGHEST DAILY MEAN	802	May 9	802	May 9 1993
LOWEST DAILY MEAN	7.7	Aug 22	7.7	Aug 22 1993
ANNUAL SEVEN-DAY MINIMUM	8.6	Aug 16	8.6	Aug 16 1993
INSTANTANEOUS PEAK FLOW	1430	Jun 20	1430	Jun 20 1993
INSTANTANEOUS PEAK STAGE	14.59	Jun 20	14.59	Jun 20 1993
ANNUAL RUNOFF (AC-FT)	37330		37350	
10 PERCENT EXCEEDS	84		84	
50 PERCENT EXCEEDS	40		33	
90 PERCENT EXCEEDS	14		17	



07327550 LITTLE WASHITA RIVER EAST OF EAST NINNEKAH, OK

LOCATION.--Lat 34°57'48", long 97°53'57", in NW 1/4 SW 1/4 sec.25, T.6 N., R.7 W., Grady County, Hydrologic Unit 11130302, on downstream right bank at bridge on county road 1.5 mi northeast of Ninnekah.

DRAINAGE AREA.--236 mi^2.

PERIOD OF RECORD.--February 1992 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,041.16 ft.

REMARKS.--Records poor. Flow regulated by numerous flood retarding structures.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	47	46	91	96	107	315	e205	e137	115	60	29	53
2	47	46	86	105	107	292	e157	e425	111	57	35	57
3	45	44	84	115	105	205	e130	e185	106	53	38	50
4	44	42	79	114	116	170	e165	e158	104	50	36	51
5	43	43	79	100	131	154	e140	e142	e103	47	40	53
6	43	43	86	97	126	147	e122	e195	e101	46	41	46
7	42	43	85	97	116	143	e112	e480	100	48	44	48
8	41	44	83	98	110	137	e100	e910	111	48	50	56
9	40	45	305	307	108	131	e94	e2430	153	42	55	61
10	40	47	280	286	152	123	e88	e1180	274	39	53	50
11	40	101	165	187	167	115	e83	e510	153	37	51	66
12	40	93	146	188	132	e111	e79	e210	126	36	49	72
13	40	66	307	144	117	e107	e175	e168	112	42	45	78
14	39	58	1070	132	113	e105	e420	e155	99	50	48	137
15	38	54	505	141	892	e104	e410	e147	95	55	46	115
16	37	52	322	157	526	e102	e260	e135	91	47	46	97
17	38	52	242	153	281	e101	e185	e130	86	41	47	85
18	39	53	188	144	202	e100	e143	e125	92	36	46	79
19	40	217	164	170	201	e158	e129	e121	138	34	44	74
20	39	229	142	315	210	e139	e122	e117	1210	35	45	63
21	39	142	134	250	191	e126	e117	e114	443	36	43	58
22	39	299	127	186	173	e156	111	e195	212	37	42	55
23	39	195	119	155	162	e127	e105	e390	133	39	46	51
24	40	192	111	132	171	e118	e102	e265	102	43	128	57
25	40	291	109	123	246	e111	e101	195	113	36	91	72
26	40	174	102	120	192	e101	e100	183	106	e36	75	62
27	40	125	104	116	145	e98	e160	157	94	35	60	50
28	41	108	105	115	191	e96	e302	142	82	28	63	46
29	47	100	110	109	---	e230	e570	e132	71	28	66	38
30	49	95	111	103	---	e390	e270	e124	64	30	57	45
31	47	---	103	105	---	316	---	e118	---	29	43	---
TOTAL	1283	3139	5744	4660	5490	4828	5257	10075	4900	1280	1602	1925
MEAN	41.4	105	185	150	196	156	175	325	163	41.3	51.7	64.2
MAX	49	299	1070	315	892	390	570	2430	1210	60	128	137
MIN	37	42	79	96	105	96	79	114	64	28	29	38
AC-FT	2540	6230	11390	9240	10890	9580	10430	19980	9720	2540	3180	3820

e Estimated

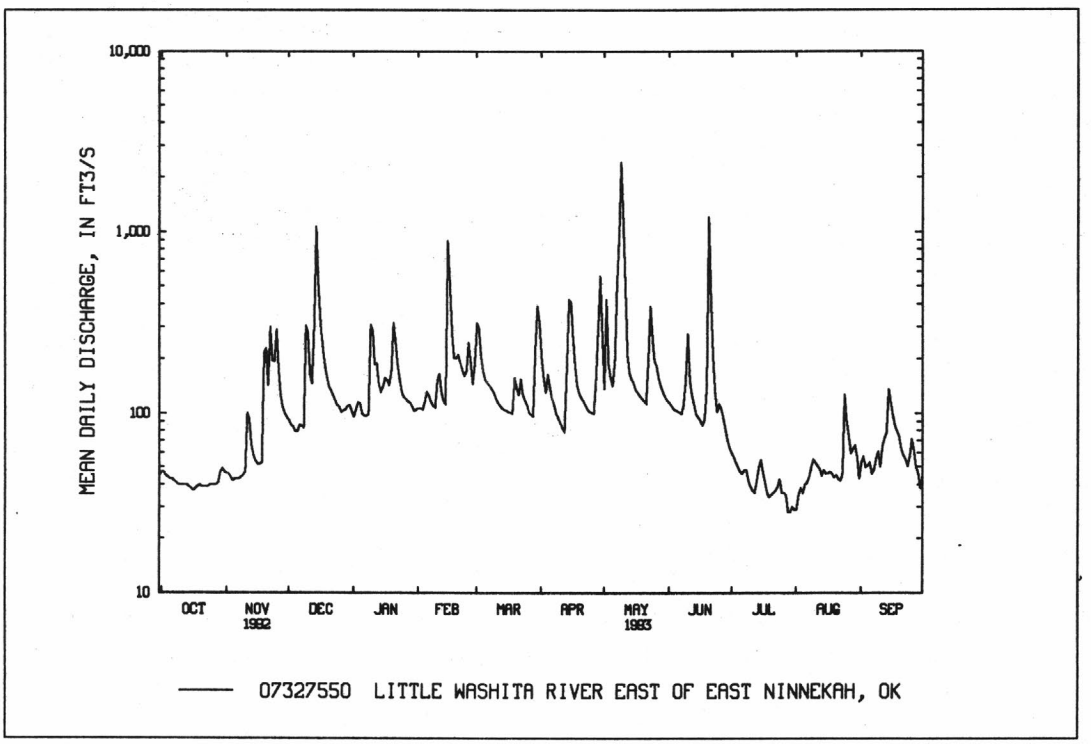
07327550 LITTLE WASHITA RIVER EAST OF EAST NINNEKAH, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	41.4	105	185	150	142	117	163	220	188	83.5	72.2	74.8
MAX	41.4	105	185	150	196	156	175	325	212	126	92.7	85.4
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1992	1992	1992	1992
MIN	41.4	105	185	150	89.6	78.8	152	116	163	41.3	51.7	64.2
(WY)	1993	1993	1993	1993	1992	1992	1992	1992	1993	1993	1993	1993

SUMMARY STATISTICS	1993 WATER YEAR		WATER YEARS 1992-93	
ANNUAL TOTAL	50183			
ANNUAL MEAN	137		137	
HIGHEST ANNUAL MEAN			137	1993
LOWEST ANNUAL MEAN			137	1993
HIGHEST DAILY MEAN	2430	May 9	2430	May 9 1993
LOWEST DAILY MEAN	[a]28	Jul 28	[a]28	Jul 28 1993
ANNUAL SEVEN-DAY MINIMUM	31	Jul 27	31	Jul 27 1993
INSTANTANEOUS PEAK FLOW	[b]9920	May 9	[b]9920	May 9 1993
INSTANTANEOUS PEAK STAGE	[c]20.70	May 9	[c]20.70	May 9 1993
ANNUAL RUNOFF (AC-FT)	99540		99600	
10 PERCENT EXCEEDS	248		225	
50 PERCENT EXCEEDS	103		90	
90 PERCENT EXCEEDS	40		44	

[a]Also occurred on July 29, 1993.
[b]From rating extended above 1,500 ft^3/s.
[c]From high-water mark on crest-stage gage.



07328100 WASHITA RIVER AT ALEX, OK

LOCATION.--Lat 34°55'33", long 97°46'25", in NW 1/4 sec.7, T.5 N., R.5 W., Grady County, Hydrologic Unit 11130303, near right bank on downstream side of county road bridge, 1.0 mi north of Alex, 3.8 mi downstream from Winter Creek, and at mile 226.5.

DRAINAGE AREA.--4,787 mi^2.

PERIOD OF RECORD.--October 1964 to September 1986, October 1988 to current year.

GAGE.--Water-stage recorder. Datum of gage is 995.00 ft above sea level. Prior to Oct. 1, 1988, datum 5.00 ft higher.

REMARKS.--Records poor. Some regulation since March 1959 by Fort Cobb Reservoir (station 07325900), since February 1961 by Foss Reservoir (07324300), and by numerous flood-retarding structures. U.S. Army Corps of Engineers' satellite telementer at station.

COOPERATION.--Records furnished by Agricultural Research Service prior to January 1978.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	390	393	2250	1040	1220	1820	2130	5530	e3330	e1220	e515	e370
2	376	396	2020	1020	1210	2090	1970	6110	e3150	e1120	e510	e380
3	366	364	1850	1100	1190	1870	1760	5760	e3070	e1070	507	e415
4	358	352	1710	1230	1190	1810	1700	5220	3000	e1030	482	e460
5	351	343	1620	1210	1420	1760	1730	4210	e2870	e990	455	e520
6	343	348	1560	1290	1570	1620	1630	3450	e2800	e970	456	e440
7	337	351	1530	1330	1310	1500	1670	3070	e2760	e1800	458	e430
8	319	346	1520	1220	1220	1420	1600	3120	e2850	e1730	458	e450
9	309	348	2730	1830	1190	1400	1510	13400	e2950	e1550	454	e475
10	300	364	3950	2820	1230	1360	1430	12300	e3150	e1400	441	e420
11	294	821	2790	2140	1490	1260	1370	11200	e2370	e1200	424	e375
12	291	1030	2860	2410	1340	1180	1330	13300	e2500	e1060	408	e365
13	290	946	2620	2090	1240	1210	1280	16600	e2180	e940	383	e480
14	285	875	5820	1850	1250	1110	2210	12900	e1960	e850	360	e760
15	278	915	6110	1850	3150	1080	3890	11000	e1870	e790	340	e990
16	269	853	5570	1780	4630	1090	3630	9610	e1780	e770	322	e590
17	273	738	5430	1610	3000	1060	3830	8470	e1700	e800	304	e520
18	273	657	4380	1400	2920	1050	3460	7020	e1670	e1200	298	e480
19	280	1420	3260	1370	2570	1270	2670	5990	e1660	e990	285	e440
20	280	3440	2830	1870	2180	1760	2210	5200	e1650	e850	272	e420
21	281	2300	2370	2030	1920	1520	1950	4740	e3100	e750	259	e460
22	284	2910	2120	1870	1710	1880	1740	4610	e1900	e690	256	e420
23	282	3010	1930	1880	1630	2200	1560	6000	e1450	e670	270	e410
24	287	3630	1790	1830	1600	1960	1430	6000	e1310	e640	815	e420
25	294	5030	1700	1670	1780	1930	1330	4960	e1270	e620	e840	e410
26	297	4520	1610	1580	1720	1730	1250	4910	e1570	e590	e790	e400
27	291	4230	1540	1510	1530	1610	1160	4740	e1850	e570	e510	e385
28	290	3710	1500	1420	1520	1540	1060	4070	e2100	e560	e445	e375
29	420	2970	1480	1320	---	1560	4860	e3820	e1530	545	e410	e365
30	383	2540	1410	1260	---	3340	5610	e3630	e1330	e535	e390	e350
31	370	---	1200	1230	---	2780	---	e3470	---	e525	e375	---
TOTAL	9741	50150	81060	50060	49930	50770	64960	214410	66680	29025	13492	13775
MEAN	314	1672	2615	1615	1783	1638	2165	6916	2223	936	435	459
MAX	420	5030	6110	2820	4630	3340	5610	16600	3330	1800	840	990
MIN	269	343	1200	1020	1190	1050	1060	3070	1270	525	256	350
AC-FT	19320	99470	160800	99290	99040	100700	128800	425300	132300	57570	26760	27320

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1993, BY WATER YEAR (WY)

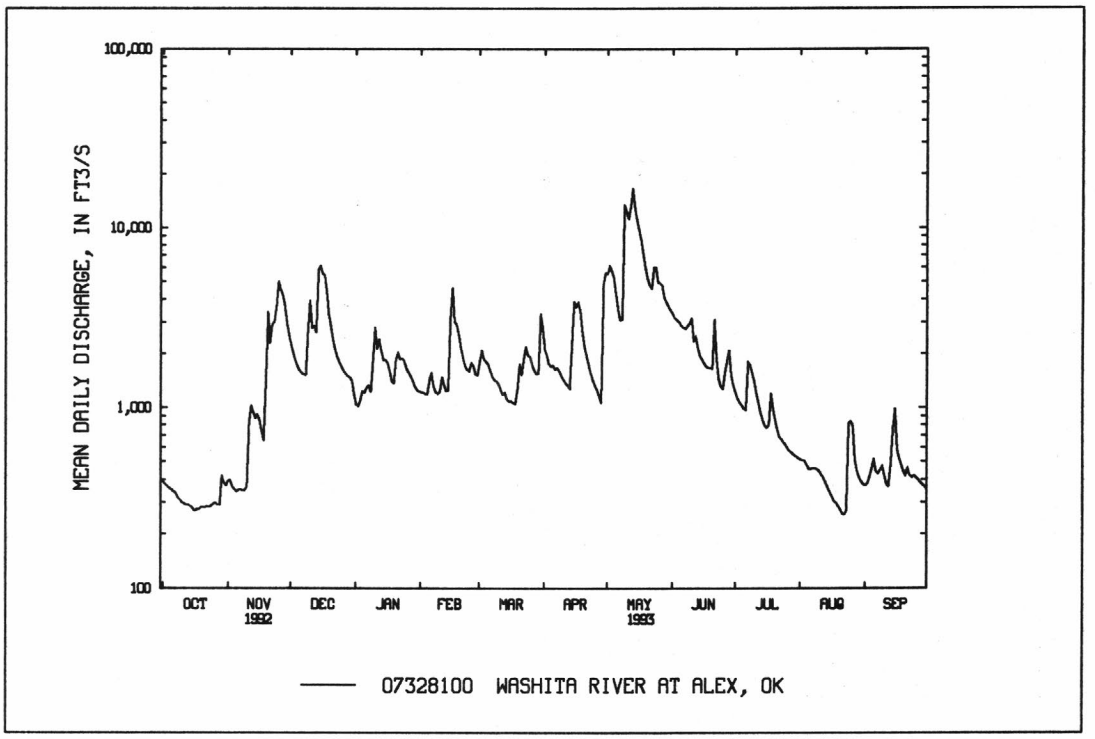
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	512	422	405	346	365	558	587	1243	1325	456	304	462
MAX	4441	1672	2615	1615	1783	3362	2165	6916	5408	1678	1465	1638
(WY)	1984	1993	1993	1993	1993	1990	1993	1993	1989	1975	1975	1991
MIN	61.1	52.9	64.5	77.3	86.1	73.8	23.9	22.9	96.9	13.9	3.88	40.0
(WY)	1979	1971	1968	1971	1967	1971	1971	1971	1967	1970	1972	1972

e Estimated

07328100 WASHITA RIVER AT ALEX, OK--Continued

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1965-93	
ANNUAL TOTAL	453679		694053			
ANNUAL MEAN	1240		1902		581	
HIGHEST ANNUAL MEAN					1902	1993
LOWEST ANNUAL MEAN					120	1971
HIGHEST DAILY MEAN	6110	Dec 15	16600	May 13	22500	Oct 21 1983
LOWEST DAILY MEAN	269	Oct 16	256	Aug 22	.00	[a]Aug 13 1970
ANNUAL SEVEN-DAY MINIMUM	276	Oct 15	276	Oct 15	.01	Aug 12 1970
INSTANTANEOUS PEAK FLOW			17800	May 13	23400	Oct 21 1983
INSTANTANEOUS PEAK STAGE			18.71	May 13	[b]28.70	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	899900		1377000		420800	
10 PERCENT EXCEEDS	2550		4000		1360	
50 PERCENT EXCEEDS	931		1400		247	
90 PERCENT EXCEEDS	369		349		66	

[a]No flow Aug. 13, 18, 1970, Aug. 30 to Sept. 1, 1971.
[b]Present datum.



07328180 NORTH CRINER CREEK NEAR CRINER, OK

LOCATION.--Lat 34°58'17", long 97°35'04", in SE 1/4 SE 1/4 sec.23, T.6 N., R.4 W., McClain County, Hydrologic Unit 11130303, near left bank on downstream side of county road bridge, 1.2 mi west of Criner, and at mile .83.

DRAINAGE AREA.--7.33 mi^2

PERIOD OF RECORD.--October 1989 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1023.66 ft above sea level.

REMARKS.--Records poor. U.S. Geological Survey's satellite telemeter at station. Flow partially regulated by retention ponds 1.5 mi northwest of gage.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	1.6	4.1	6.3	5.9	11	9.6	8.2	6.2	3.2	.83	.32
2	1.3	1.5	4.2	6.3	5.9	12	8.3	32	6.0	3.2	.86	.32
3	1.3	1.3	4.2	6.4	5.8	9.6	7.6	21	6.0	3.0	1.0	.36
4	1.2	1.2	4.3	6.5	6.1	8.4	6.9	9.9	5.9	2.9	1.4	.32
5	1.1	1.1	4.4	6.3	7.0	8.0	6.9	8.5	6.0	2.9	1.4	.32
6	1.1	1.1	4.6	6.2	7.2	7.5	6.7	7.6	6.2	2.9	1.4	.30
7	1.4	1.1	4.8	6.1	6.9	7.2	6.5	7.5	6.1	2.7	1.4	.29
8	1.6	1.1	5.1	6.0	6.7	7.2	6.5	30	5.5	2.4	1.3	.64
9	1.5	1.1	29	11	6.7	7.0	6.2	67	5.6	2.3	1.3	.32
10	1.5	1.2	14	11	8.8	7.0	6.2	31	6.0	2.2	1.2	.30
11	1.4	6.5	10	9.0	9.0	6.8	6.2	32	5.9	2.2	1.1	.33
12	1.4	3.5	8.8	9.0	7.9	6.5	6.0	31	5.8	e2.1	1.1	.34
13	1.5	2.5	13	7.7	7.2	6.2	5.8	31	5.8	e2.0	1.0	.49
14	1.4	2.2	33	7.1	7.2	6.2	10	29	5.8	e2.0	.99	5.1
15	1.3	2.0	25	7.0	34	6.2	11	25	5.7	e1.9	1.0	2.3
16	1.6	2.0	12	6.8	28	6.2	8.6	18	5.5	e1.8	1.1	1.5
17	1.4	2.0	11	6.6	21	6.2	8.1	8.7	5.4	e1.8	1.1	.98
18	1.3	2.0	9.2	6.3	9.9	6.2	7.5	7.2	5.1	e1.7	1.1	.83
19	1.4	3.9	8.8	8.3	9.0	16	7.1	6.6	4.8	e1.6	1.1	1.0
20	1.5	4.3	8.2	12	8.6	11	6.9	6.0	5.1	e1.5	1.1	3.9
21	1.5	4.5	8.0	10	8.1	8.7	6.2	5.6	4.9	e1.4	1.1	1.9
22	1.5	13	7.9	8.4	7.8	8.8	6.0	5.8	4.8	e1.4	1.0	1.3
23	1.5	6.2	7.8	7.6	7.6	8.4	6.0	92	4.7	e1.3	1.1	.94
24	1.6	5.9	7.4	7.0	7.4	7.7	6.0	43	4.6	e1.2	1.3	.88
25	1.6	6.2	7.2	6.5	7.9	6.9	6.0	36	4.1	e1.1	.32	.98
26	1.6	5.2	6.9	6.4	7.9	6.4	5.7	32	3.8	e1.1	.32	1.0
27	1.5	4.8	6.8	6.3	7.7	6.3	5.7	32	3.8	e.98	.32	1.1
28	1.5	4.3	6.8	6.3	7.6	6.3	5.7	27	3.8	e.91	.33	1.0
29	3.9	4.2	7.0	6.2	---	6.7	12	11	3.7	e.83	.31	.92
30	2.8	4.1	7.1	6.0	---	27	9.5	8.2	3.4	e.82	.33	.90
31	1.9	---	6.8	5.9	---	17	---	7.0	---	.78	.33	---
TOTAL	48.4	101.6	297.4	228.5	270.8	272.6	217.4	716.8	156.0	58.12	29.54	31.18
MEAN	1.56	3.39	9.59	7.37	9.67	8.79	7.25	23.1	5.20	1.87	.95	1.04
MAX	3.9	13	33	12	34	27	12	92	6.2	3.2	1.4	5.1
MIN	1.1	1.1	4.1	5.9	5.8	6.2	5.7	5.6	3.4	.78	.31	.29
AC-FT	96	202	590	453	537	541	431	1420	309	115	59	62

e Estimated

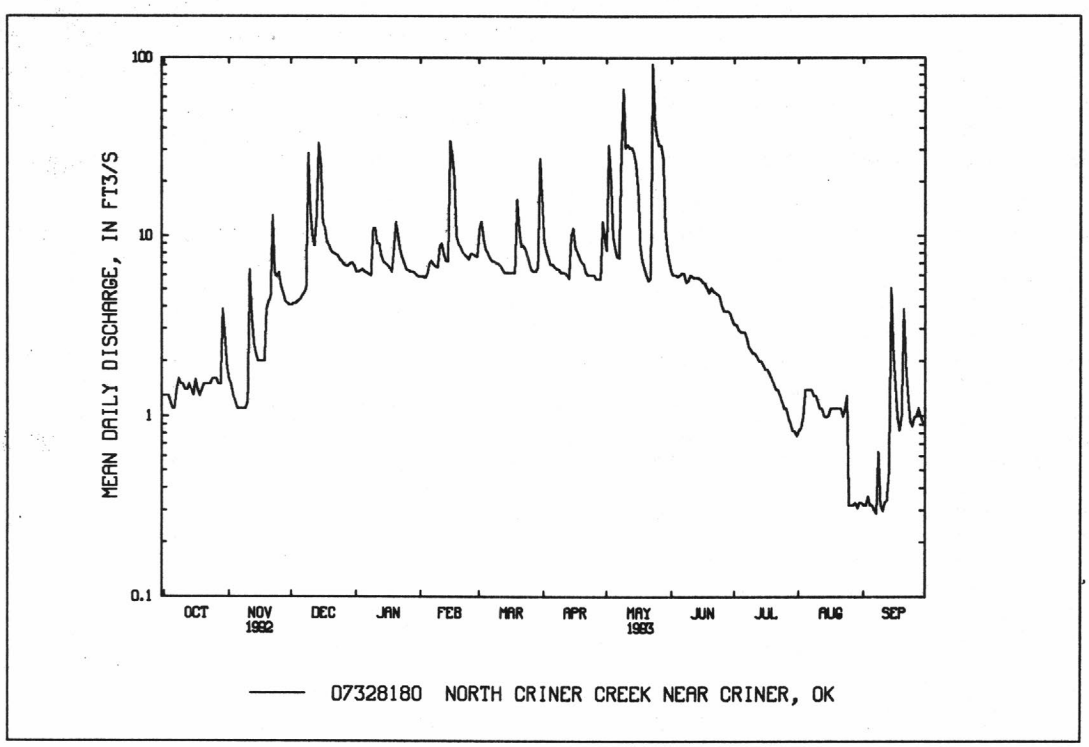
07328180 NORTH CRINER CREEK NEAR CRINER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.14	2.21	4.48	3.35	3.88	5.43	6.97	13.1	4.52	2.32	1.81	1.40
MAX	1.56	3.67	9.59	7.37	9.67	9.97	14.7	23.1	9.93	5.98	4.40	2.21
(WY)	1993	1992	1993	1993	1993	1990	1990	1993	1992	1992	1992	1992
MIN	.65	.65	.33	1.38	.89	.86	.97	3.03	.89	.44	.82	.58
(WY)	1991	1991	1991	1991	1991	1991	1991	1991	1991	1991	1990	1990

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1990-93	
ANNUAL TOTAL	1764.20		2428.34			
ANNUAL MEAN	4.82		6.65		4.23	
HIGHEST ANNUAL MEAN					6.65	1993
LOWEST ANNUAL MEAN					1.08	1991
HIGHEST DAILY MEAN	47	May 11	92	May 23	151	May 2 1990
LOWEST DAILY MEAN	.68	Apr 15	.29	Sep 7	.06	[a]Dec 29 1990
ANNUAL SEVEN-DAY MINIMUM	.88	Mar 31	.32	Sep 1	.07	Dec 26 1990
INSTANTANEOUS PEAK FLOW			605	May 23	605	May 23 1993
INSTANTANEOUS PEAK STAGE			11.24	May 23	11.24	May 23 1993
ANNUAL RUNOFF (AC-FT)	3500		4820		3060	
10 PERCENT EXCEEDS	8.1		11		7.9	
50 PERCENT EXCEEDS	3.1		5.8		1.6	
90 PERCENT EXCEEDS	1.4		1.0		.51	

[a]Minimum daily discharge, .06 ft^3/s, also occurred Dec. 30, 1990, to Jan. 1, 1991, July 26, 1991.



07328500 WASHITA RIVER NEAR PAULS VALLEY, OK

LOCATION.--Lat 34°45'17", long 97°15'04", in NE 1/4, SE 1/4 sec.1. T.3 N., R.1 W., Garvin County, Hydrologic Unit 11130303, on downstream right bank near end of bridge on U.S. Highway 77, 2.0 mi northwest of Pauls Valley, 6.0 mi downstream from Owl Creek, 7.0 mi upstream from Washington Creek, and at mile 146.5.

DRAINAGE AREA.--5,330 mi^2.

PERIOD OF RECORD.--May to December 1899 (gage heights only), October 1937 to current year. Monthly discharge only for some periods, published in WSP 1311. Published as "at Pauls Valley, Indian Territory" in 1899.

GAGE.--Water-stage recorder. Datum of gage is 854.61 ft above sea level. During 1899, nonrecording gage at site 9 mi downstream, at different datum. Mar. 29, 1938, to Jan. 25, 1939, nonrecording gage and Jan. 26, 1939, to Oct. 6, 1948, water-stage recorder at site 0.7 mi upstream, at datum 1.53 ft higher. Mar. 11, 1975, to Jan. 26, 1981, water-stage recorder at site 200 ft upstream, and at same datum.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Stream is reported to have receded to no flow in 1882 and in 1897 (information provided by local resident).

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	506	511	2360	1700	1570	2670	e3500	6010	3520	1650	568	379
2	492	485	2140	1600	1560	3160	e2800	7020	3320	1600	559	387
3	476	504	1970	1580	1530	2690	e3100	10000	3120	e1580	553	447
4	463	482	1800	1660	1540	2320	e2500	8730	2970	e1530	554	466
5	451	450	1670	1710	1700	2120	e2300	7220	2880	e1500	569	532
6	443	445	1570	1680	1870	1950	2220	6460	2770	e1480	553	496
7	439	441	1510	1740	1920	1760	2110	5750	2750	1430	533	455
8	447	442	1500	1770	1730	1630	2090	4870	2810	2140	541	458
9	426	446	3470	1900	1630	1530	2010	17900	2850	2070	527	491
10	408	463	5010	3080	1740	1490	1900	30100	2990	2050	518	487
11	394	7390	3820	3070	1850	1400	1800	26300	3250	1820	502	424
12	392	4400	3080	2890	1930	1350	1700	19500	2830	1490	482	387
13	392	3520	3030	2870	1780	1290	1620	22700	2550	1300	456	415
14	390	3350	7190	2420	1670	1280	2090	27400	2380	1140	440	1010
15	383	e2800	8960	2250	7640	1260	4450	22200	2140	1070	425	1040
16	376	e2300	6720	2210	7760	1200	4580	e16000	1970	977	414	833
17	369	e1900	6250	2140	5010	1160	4260	11300	1930	977	409	603
18	368	e1500	5700	1960	3680	1210	4230	8720	1820	1250	396	532
19	376	1220	4480	1870	3350	1490	3660	6970	1720	1330	394	482
20	381	2830	3520	2890	2840	1920	2990	5960	1760	1160	390	466
21	389	3120	3100	2870	2470	1970	2530	5130	3300	1030	372	480
22	397	4430	2830	2720	2190	1920	2320	4750	2540	899	370	532
23	408	4200	2640	2440	1970	2190	2090	6160	2080	806	345	e490
24	413	3700	2450	2360	1880	2160	1900	9430	1840	766	520	e470
25	414	4670	2280	2230	2420	2010	1770	6640	1710	728	858	e530
26	424	5120	2150	2070	2230	1930	1630	5690	1930	693	718	e535
27	428	4180	2070	1950	1950	1720	1560	5480	2330	659	615	e550
28	420	3820	2010	1850	1760	1580	1500	4880	2720	637	500	e510
29	423	3130	1970	1770	---	1480	1940	4410	2130	612	455	e480
30	472	2650	1940	1670	---	2650	6410	3980	1790	593	418	e460
31	535	---	1860	1590	---	4440	---	3740	---	581	415	---
TOTAL	13095	74899	101050	66510	71170	58930	79560	331400	74700	37548	15369	15827
MEAN	422	2497	3260	2145	2542	1901	2652	10690	2490	1211	496	528
MAX	535	7390	8960	3080	7760	4440	6410	30100	3520	2140	858	1040
MIN	368	441	1500	1580	1530	1160	1500	3740	1710	581	345	379
AC-FT	25970	148600	200400	131900	141200	116900	157800	657300	148200	74480	30480	31390

e Estimated

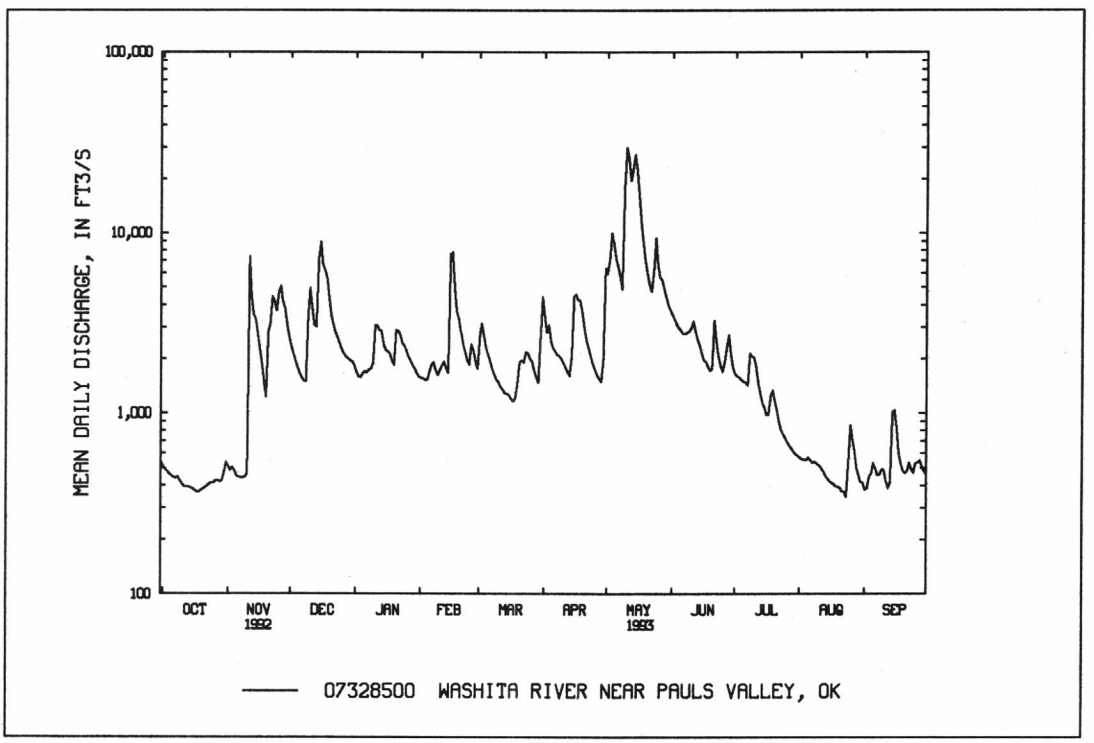
07328500 WASHITA RIVER NEAR PAULS VALLEY, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	887	696	592	549	634	924	898	1825	1825	626	351	540
MAX	7934	3608	3347	2145	3149	4552	3949	10690	7766	3174	1921	1747
(WY)	1987	1987	1992	1993	1987	1990	1990	1993	1987	1987	1975	1991
MIN	35.2	61.7	69.6	91.3	87.8	78.9	58.9	38.1	151	16.3	.28	23.6
(WY)	1964	1968	1968	1967	1967	1967	1982	1971	1966	1964	1972	1972

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	586301		940058			
ANNUAL MEAN	1602		2576		[a]863	
HIGHEST ANNUAL MEAN					3661	1987
LOWEST ANNUAL MEAN					181	1967
HIGHEST DAILY MEAN	8960	Dec 15	30100	May 10	41700	May 29 1987
LOWEST DAILY MEAN	368	Oct 18	345	Aug 23	[b].00	Jul 21 1964
ANNUAL SEVEN-DAY MINIMUM	377	Oct 15	377	Oct 15	.00	Jul 21 1964
INSTANTANEOUS PEAK FLOW			31200	May 10	43600	May 29 1987
INSTANTANEOUS PEAK STAGE			21.49	May 10	[c]28.72	May 29 1987
ANNUAL RUNOFF (AC-FT)	1163000		1865000		624900	
10 PERCENT EXCEEDS	3140		5010		1960	
50 PERCENT EXCEEDS	1240		1790		357	
90 PERCENT EXCEEDS	490		427		78	

[a]Prior to regulation, water years 1938-50, 829 ft^3/s.
[b]No flow in 1956, 1964, 1966, 1967, 1970, 1972.
[c]Maximum gage height for period of record, 29.08 ft, May 11, 1950.



07328550 WASHINGTON CREEK NEAR PAULS VALLEY, OK

LOCATION.--Lat 34°49'33", long 97°12'07", in NW 1/4 NE 1/4 sec.16, T.4 N., R.1 E., Garvin County, Hydrologic Unit 11130303, on downstream right bridge wingwall on county road, 4 mi upstream from Pauls Valley Lake and 7 mi north of Pauls Valley, OK.

DRAINAGE AREA.--7.56 mi^2.

PERIOD OF RECORD.--June 1991 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 937 ft above sea level, from topographic map.

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.09	e.15	6.5	e1.1	e1.7	61	11	4.8	4.2	e2.4	e.40	e.40
2	e.08	e.14	6.2	e1.1	e1.6	39	e8.0	4.6	e4.2	2.4	.43	e.40
3	e.07	e.13	6.1	e1.2	e1.6	20	e7.0	5.5	e4.1	e2.4	e.40	.34
4	e.06	e.12	6.1	1.2	3.0	15	22	4.2	e4.1	e2.3	e.40	e.40
5	.05	e.11	5.5	e1.2	6.5	10	19	3.7	e4.0	e2.3	e.40	e.40
6	e.05	e.20	5.3	e1.1	3.2	9.0	13	14	e3.9	2.4	e.40	e.40
7	e.05	e.30	5.3	e1.0	e2.0	e8.0	9.0	23	3.8	e2.4	e.40	.37
8	e.06	e.30	5.1	e.90	e1.5	e7.0	e8.0	10	e3.7	e2.4	e.40	e.40
9	e.07	.29	87	25	e1.5	e6.0	e7.0	107	11	e2.3	.37	e.40
10	e.08	e.30	67	17	10	e5.0	e6.0	84	11	e2.3	e.40	e.40
11	e.09	73	24	10	6.4	e4.0	e5.0	70	5.4	e2.3	.37	e.40
12	.10	107	15	17	3.2	e3.0	e4.0	43	4.7	2.3	e.40	e.40
13	.08	47	19	8.0	e2.3	e2.0	e3.0	18	4.6	e2.1	e.40	11
14	e.08	14	137	5.6	e1.5	e1.0	32	12	3.7	e1.7	e.40	32
15	e.07	7.2	87	3.6	179	e1.0	25	10	e3.3	e1.4	e.40	5.2
16	e.08	5.7	29	3.1	103	e.90	13	7.4	e2.9	e1.1	.40	e3.0
17	e.09	4.6	10	3.0	77	e.80	9.1	6.2	2.6	e.80	e.40	e2.0
18	e.10	3.9	5.7	2.8	32	e.80	e7.5	6.0	2.8	e.70	e.40	e1.0
19	.10	23	4.3	16	17	15	e6.0	5.7	71	.50	e.40	e.50
20	e.10	41	3.2	46	14	12	e4.5	5.5	107	e.50	e.40	.43
21	e.20	18	2.9	14	10	e8.0	3.7	5.5	69	e.50	e.40	e.40
22	e.30	105	e2.0	6.7	e8.0	25	3.7	5.3	17	e.50	e.40	e.40
23	.29	62	e1.0	4.7	e6.0	18	3.7	7.9	5.5	e.50	.37	e.40
24	e.30	33	.67	3.1	32	11	3.7	7.6	4.5	e.40	e.40	e.40
25	e.30	78	e.70	2.4	77	8.6	3.7	5.7	2.4	e.40	e.40	e.40
26	e.30	28	e.60	e2.1	25	e7.0	3.7	5.3	e2.2	.43	e.40	e.40
27	e.20	15	e.80	e1.9	16	e6.0	3.6	5.1	e2.2	e.40	e.40	.37
28	e.20	9.7	1.0	e1.9	13	e5.0	4.9	4.9	2.2	e.40	e.40	e.40
29	e.19	7.9	e1.0	e1.8	---	e4.0	14	4.8	e2.3	e.40	e.40	e.40
30	e.17	6.9	e1.0	e1.8	---	58	7.3	4.7	e2.3	e.40	.37	e.40
31	e.16	---	e1.0	e1.7	---	21	---	e4.5	---	e.40	e.40	---
TOTAL	4.16	691.94	546.97	208.00	655.0	392.10	271.1	505.9	371.6	41.73	12.31	63.81
MEAN	.13	23.1	17.6	6.71	23.4	12.6	9.04	16.3	12.4	1.35	.40	2.13
MAX	.30	107	137	46	179	61	32	107	107	2.4	.43	32
MIN	.05	.11	.60	.90	1.5	.80	3.0	3.7	2.2	.40	.37	.34
AC-FT	8.3	1370	1080	413	1300	778	538	1000	737	83	24	127

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1993, BY WATER YEAR (WY)

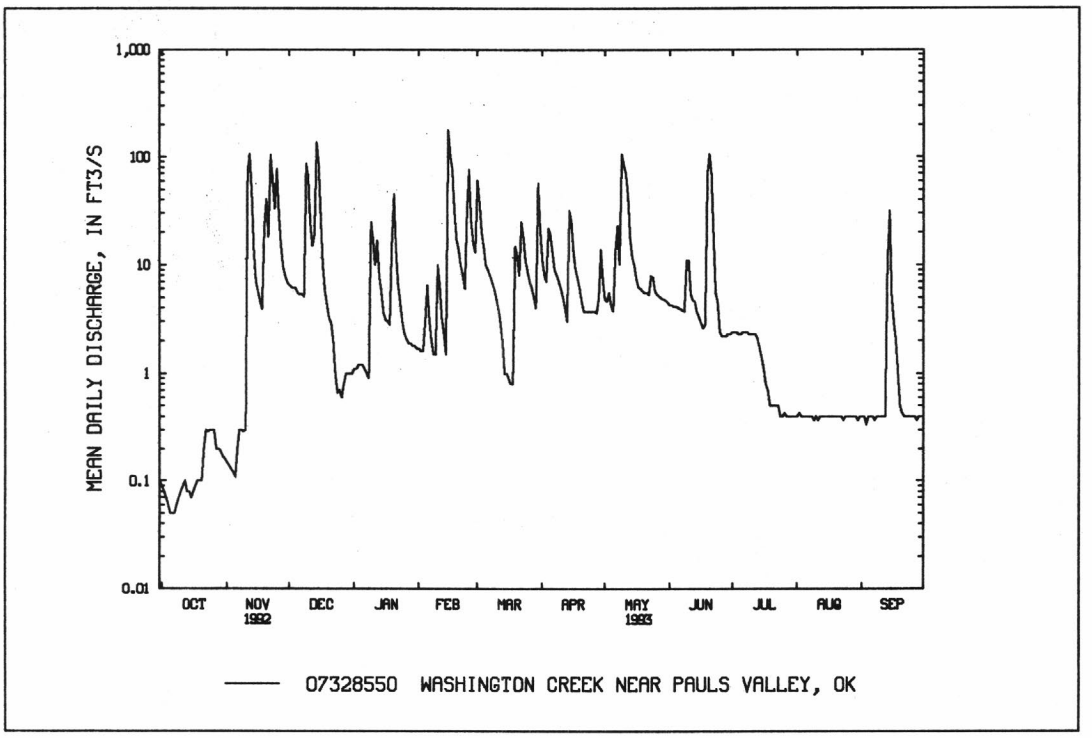
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.19	12.2	18.3	4.64	12.2	8.05	6.83	12.6	10.4	1.33	.47	1.10
MAX	.24	23.1	19.0	6.71	23.4	12.6	9.04	16.3	12.4	2.42	.96	2.13
(WY)	1992	1993	1992	1993	1993	1993	1993	1993	1993	1992	1992	1993
MIN	.13	1.37	17.6	2.57	1.48	3.45	4.63	8.98	8.45	.23	.063	.31
(WY)	1993	1992	1993	1992	1992	1992	1992	1992	1992	1991	1991	1992

e Estimated

07328550 WASHINGTON CREEK NEAR PAULS VALLEY, OK--Continued

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1991-93	
ANNUAL TOTAL	2257.41		3764.62			
ANNUAL MEAN	6.17		10.3		7.41	
HIGHEST ANNUAL MEAN					10.3	1993
LOWEST ANNUAL MEAN					4.51	1992
HIGHEST DAILY MEAN	137	Dec 14	179	Feb 15	189	Dec 20 1991
LOWEST DAILY MEAN	.05	Oct 5	.05	Oct 5-7	.00	[a]Aug 26 1991
ANNUAL SEVEN-DAY MINIMUM	.06	Oct 3	.06	Oct 3	.00	Aug 26 1991
INSTANTANEOUS PEAK FLOW			946	Jun 19	946	Jun 19 1993
INSTANTANEOUS PEAK STAGE			14.54	Jun 19	14.54	Jun 19 1993
ANNUAL RUNOFF (AC-FT)	4480		7470		5370	
10 PERCENT EXCEEDS	11		25		14	
50 PERCENT EXCEEDS	1.4		3.0		1.3	
90 PERCENT EXCEEDS	.14		.30		.11	

[a]Aug. 26-Sept. 3, 1991



07329000 RUSH CREEK AT PURDY, OK

LOCATION.--Lat 34°41'46", long 97°35'55", in SE 1/4 SE 1/4 sec.27, T.3 N., R.4 W., on left downstream bank near end of bridge on State Highway 76, 1.6 mi southwest of Purdy, 9.7 mi south of Lindsay, and at mile 27.3.

DRAINAGE AREA.--145 mi^2.

PERIOD OF RECORD.--October 1939 to December 1953, February 1982 to September 1993 (discontinued). Prior to May 1940 monthly discharges only, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,004.12 ft above sea level. Prior to Oct. 1, 1942, nonrecording gage, at site 1.2 mi downstream, at datum 9.42 ft lower. Oct. 1, 1942 to Aug. 22, 1943, and May 11, 1950, to Sept. 18, 1952, nonrecording gage, 1.2 mi downstream, at datum 14.42 ft lower. Aug. 23, 1943, to May 10, 1950, and Sept. 19, 1952, to Dec. 31, 1953, water-stage recorder, at site 1.2 mi downstream, at datum 14.42 ft lower.

REMARKS.--Records fair. Flow partially regulated since 1960 by numerous soil-conservation reservoirs.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	17	22	65	63	66	498	144	141	132	46	7.8	9.3
2	16	22	62	62	66	417	135	372	126	43	9.5	8.9
3	16	21	60	65	65	262	132	292	123	40	9.0	12
4	16	20	59	68	67	213	198	203	119	38	15	11
5	16	19	56	64	70	187	221	164	118	36	13	9.8
6	15	19	58	62	71	170	177	185	116	35	13	8.9
7	18	19	58	62	69	158	160	192	109	33	12	8.7
8	23	20	57	63	67	148	146	241	139	31	12	48
9	18	21	560	136	65	142	136	2090	134	29	12	19
10	17	23	475	151	81	136	132	1040	149	28	10	13
11	15	1790	211	113	88	132	127	916	122	26	9.0	10
12	15	851	145	123	76	129	125	768	108	25	8.0	8.1
13	15	732	202	96	70	126	122	619	99	26	7.3	29
14	17	576	840	82	67	126	428	451	91	27	6.7	157
15	18	444	541	77	1160	127	505	287	86	29	6.3	49
16	17	326	257	74	829	133	301	215	81	27	6.0	32
17	17	255	175	71	533	131	219	181	76	25	5.7	24
18	18	201	143	68	283	129	184	171	75	23	5.7	20
19	17	229	122	84	219	153	161	162	77	22	5.5	17
20	18	228	102	220	198	201	140	153	78	19	5.4	16
21	17	205	89	159	182	173	125	148	76	18	5.2	14
22	17	798	83	122	167	226	120	144	72	17	5.0	13
23	18	398	77	101	157	225	118	332	68	15	6.0	12
24	18	210	71	85	160	187	119	394	62	14	223	12
25	19	205	70	77	205	165	115	248	58	13	60	70
26	19	143	67	74	170	151	111	200	60	12	27	40
27	19	108	67	71	154	146	109	172	59	10	18	27
28	19	88	72	70	179	143	110	166	55	9.4	14	21
29	20	75	72	68	---	143	145	162	51	8.9	11	17
30	20	68	72	65	---	170	149	149	48	8.4	9.4	15
31	21	---	68	65	---	160	---	140	---	7.9	8.5	---
TOTAL	546	8136	5056	2761	5584	5607	5114	11098	2767	741.6	566.0	751.7
MEAN	17.6	271	163	89.1	199	181	170	358	92.2	23.9	18.3	25.1
MAX	23	1790	840	220	1160	498	505	2090	149	46	223	157
MIN	15	19	56	62	65	126	109	140	48	7.9	5.0	8.1
AC-FT	1080	16140	10030	5480	11080	11120	10140	22010	5490	1470	1120	1490

07329000 RUSH CREEK AT PURDY, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

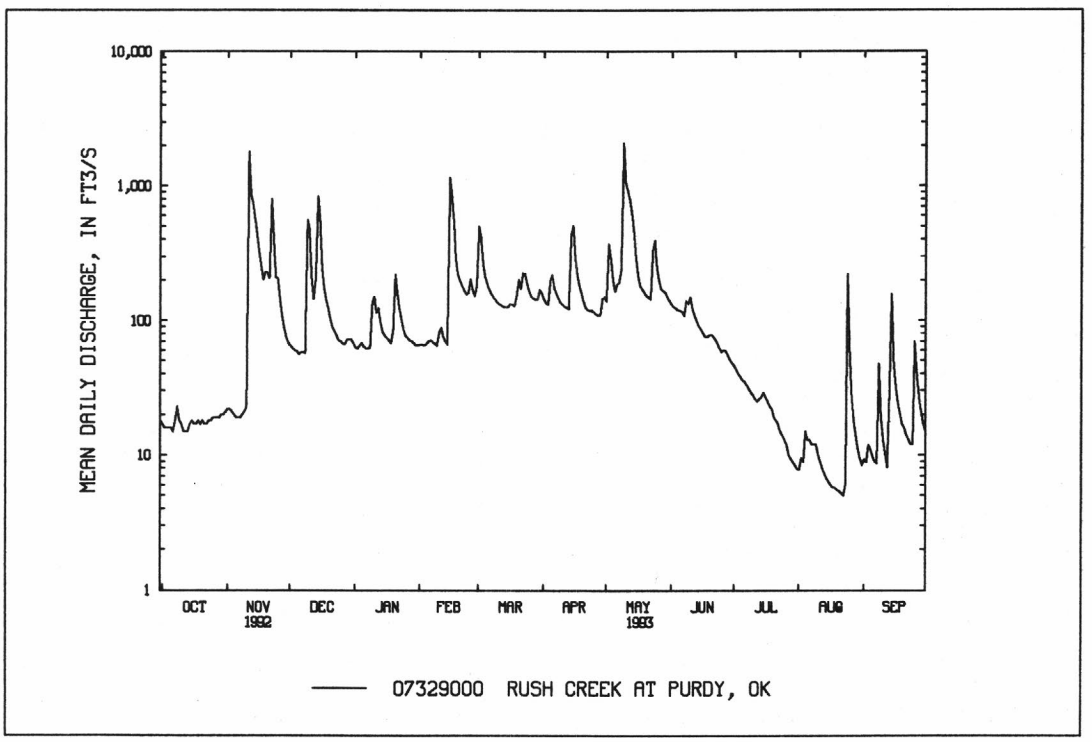
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	109	65.6	69.8	66.1	89.0	128	123	182	145	38.3	15.1	40.5
MAX	572	271	237	224	330	399	342	529	551	166	51.2	209
(WY)	1984	1993	1992	1985	1985	1985	1990	1987	1987	1987	1992	1991
MIN	3.36	8.46	14.3	20.1	18.1	22.6	20.8	8.18	17.3	2.11	.34	.32
(WY)	1983	1983	1990	1984	1984	1991	1983	1984	1988	1984	1984	1984

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1983-93	
ANNUAL TOTAL	36466		48728.3			
ANNUAL MEAN	99.6		134		[a]89.2	
HIGHEST ANNUAL MEAN					196	1987
LOWEST ANNUAL MEAN					20.9	1983
HIGHEST DAILY MEAN	1790	Nov 11	2090	May 9	8740	May 28 1987
LOWEST DAILY MEAN	15	Oct 6	5.0	Aug 22	.00	Jul 10 1984
ANNUAL SEVEN-DAY MINIMUM	16	Sep 30	5.5	Aug 16	.00	Aug 18 1984
INSTANTANEOUS PEAK FLOW			3940	May 9	[b]17000	May 28 1987
INSTANTANEOUS PEAK STAGE			18.39	May 9	[c]33.69	May 28 1987
ANNUAL RUNOFF (AC-FT)	72330		96650		64640	
10 PERCENT EXCEEDS	171		244		169	
50 PERCENT EXCEEDS	64		72		28	
90 PERCENT EXCEEDS	20		12		6.6	

[a]Prior to regulation, water years 1940-53, 23.1 ft^3/s.

[b]Maximum discharge for period of record 30,000 ft^3/s, May 10, 1950, from rating extended above 5,000 ft^3/s on the basis of a slope-area measurement at peak flow.

[c]Maximum gage height for period of record 27.00 ft, from flood mark, May 10, 1950, at site and datum then in use.



07329700 WILDHORSE CREEK NEAR HOOVER, OK

LOCATION.--Lat 34°32'29", long 97°14'49", on west line of SW 1/4 sec.19, T.1 N., R.1 E., Garvin County, Hydrologic Unit 11130303, on downstream left bank at bridge on State Highway 19A, 1.5 mi north of Hoover, 1.8 mi downstream from Sandy Creek, and at mile 7.9.

DRAINAGE AREA.--604 mi^2.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1944, 1951-69. October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 803.3 ft above sea level.

REMARKS.--Records fair. Flow regulated by Duncan, Clear Creek, Humphries and Fuqua Lakes, combined surface-area, 3,340 acres, and capacity, 44,800 acre-ft, and numerous flood-retarding structures.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Dec. 14	1200	5,360	12.52	Apr. 14	1100	5,940	12.35
Feb. 15	----	[a]6,500	unknown	May 9	1300	22,200	22.41
Feb. 25	0400	4,420	10.63	Sept. 14	0600	9,220	15.41
Mar. 1	1500	6,960	13.39				
Mar. 30	0500	21,200	22.20				

[a]Estimated from partial graphic record.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	20	84	221	191	3770	1410	375	244	84	24	17
2	19	19	77	191	189	2810	1040	1030	211	79	23	15
3	19	19	73	183	186	1620	808	1180	196	74	24	23
4	18	18	64	185	191	1170	1830	638	188	68	24	21
5	18	18	77	195	212	908	1590	474	178	62	29	17
6	18	18	64	173	214	711	1010	406	167	58	36	13
7	17	18	57	166	198	603	823	474	153	56	35	12
8	16	18	54	159	188	520	705	428	196	55	26	48
9	16	19	705	169	183	465	620	9180	231	52	23	36
10	19	19	723	e160	276	424	543	5090	493	50	21	21
11	18	21	378	e175	363	391	490	2470	291	48	19	15
12	18	128	261	e180	270	351	440	2020	228	48	16	13
13	20	147	325	e170	237	344	469	1540	196	46	15	79
14	21	101	3500	e165	210	320	3780	1230	175	46	16	5140
15	22	88	2010	e161	4500	298	1870	1020	160	48	15	1200
16	22	74	1210	e158	e4300	296	1120	906	149	47	15	498
17	21	64	895	e155	e2300	280	941	812	140	43	14	291
18	22	59	670	e151	1560	270	818	714	128	41	14	195
19	23	89	544	e250	1250	268	638	640	130	40	13	149
20	23	121	463	e450	1020	290	512	572	129	38	12	113
21	22	89	380	e400	878	281	445	491	120	37	12	90
22	23	687	328	e330	735	427	387	412	115	36	11	74
23	22	409	296	e300	605	451	355	1330	108	34	12	64
24	24	261	274	e270	567	347	337	1490	101	33	167	58
25	21	243	255	264	2890	313	322	773	94	31	66	562
26	21	193	239	246	1280	290	306	573	98	30	29	280
27	20	137	625	235	914	271	281	440	100	28	18	147
28	18	111	217	226	856	260	271	361	97	26	15	111
29	25	96	215	215	---	261	906	401	90	25	13	90
30	32	88	213	216	---	9810	529	321	83	25	12	76
31	21	---	204	196	---	3140	---	277	---	25	15	---
TOTAL	638	3392	15480	6715	26763	31960	25596	38068	4989	1413	784	9468
MEAN	20.6	113	499	217	956	1031	853	1228	166	45.6	25.3	316
MAX	32	687	3500	450	4500	9810	3780	9180	493	84	167	5140
MIN	16	18	54	151	183	260	271	277	83	25	11	12
AC-FT	1270	6730	30700	13320	53080	63390	50770	75510	9900	2800	1560	18780

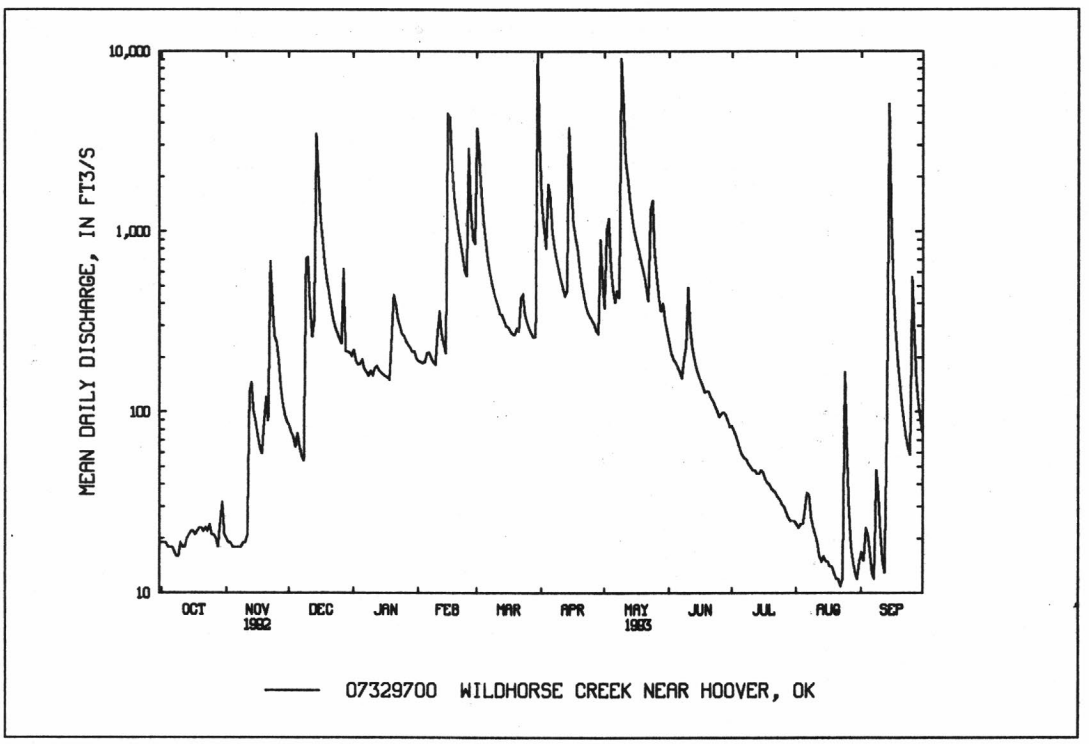
e Estimated

07329700 WILDHORSE CREEK NEAR HOOVER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1993, BY WATER YEAR (WY)

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
MEAN	189	170	247	187	221	381	393	703	474	110	34.6	131
MAX	647	920	1614	1371	1023	1283	2564	2937	1385	640	249	750
(WY)	1986	1974	1988	1988	1987	1990	1990	1982	1975	1975	1975	1991
MIN	1.14	3.33	2.00	4.88	8.76	8.48	6.73	35.8	16.5	.92	.16	.33
(WY)	1979	1978	1978	1978	1970	1972	1982	1984	1970	1980	1970	1971

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1970-93	
ANNUAL TOTAL	120890		165266			
ANNUAL MEAN	330		453		270	
HIGHEST ANNUAL MEAN					631	1987
LOWEST ANNUAL MEAN					35.3	1970
HIGHEST DAILY MEAN	3500	Dec 14	9810	Mar 30	27000	May 29 1987
LOWEST DAILY MEAN	16	Oct 8	11	Aug 22	.00	at times
ANNUAL SEVEN-DAY MINIMUM	17	Oct 3	13	Aug 17	.00	Sep 8 1980
INSTANTANEOUS PEAK FLOW			22200	May 9	40600	May 3 1990
INSTANTANEOUS PEAK STAGE			22.41	May 9	26.13	May 3 1990
ANNUAL RUNOFF (AC-FT)	239800		327800		195700	
10 PERCENT EXCEEDS	736		1020		572	
50 PERCENT EXCEEDS	172		183		46	
90 PERCENT EXCEEDS	22		18		4.1	



07329852 ROCK CREEK AT SULPHUR, OK

LOCATION.--Lat 34°29'43", long 96°59'18", in SE 1/4 SE 1/4 sec.4, T.1 S., R.3 E., Murray County, Hydrologic Unit 11130303, 80 ft west of campsite 69 in Rock Creek Campground, in the Chickasaw National Park at Sulphur, OK, and at mile 11.0.

DRAINAGE AREA.--44.1 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1, 1989, to current year.

GAGE.--Water-stage recorder. Datum of gage is 896.97 ft above sea level.

REMARKS.--No estimated daily discharges. Records fair. Flow regulated by numerous flood-retarding structures.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

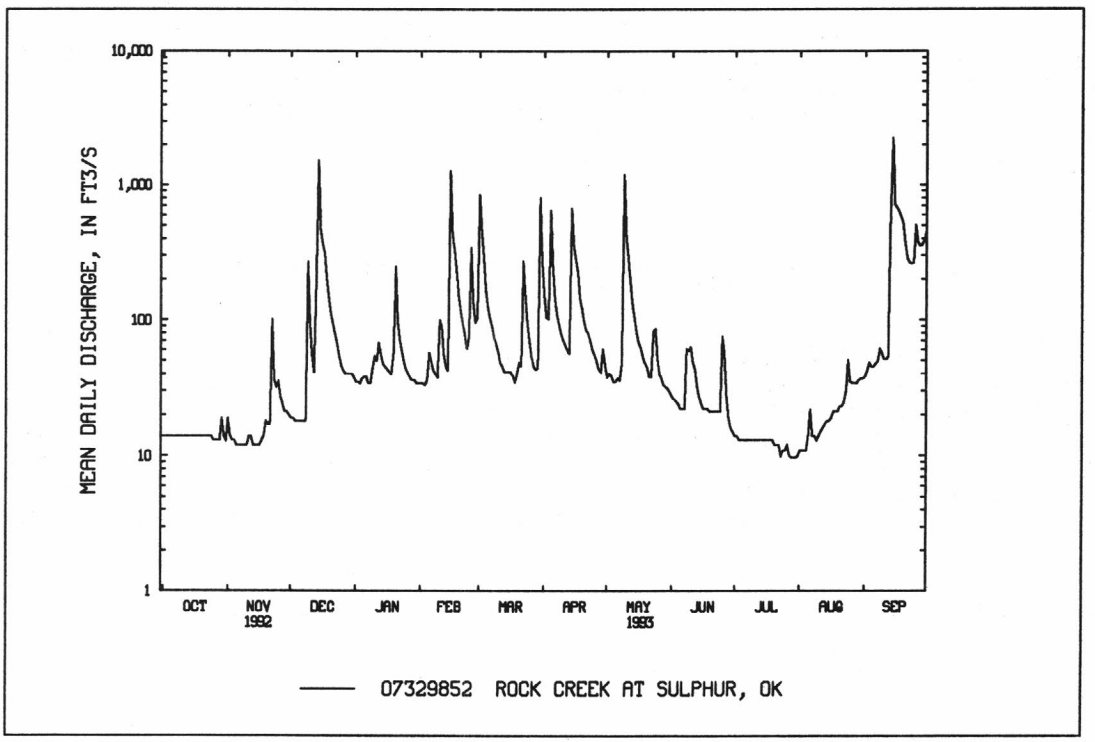
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	19	19	35	34	854	152	38	27	14	11	38
2	14	14	19	35	34	468	104	40	26	14	11	42
3	14	13	18	34	33	287	102	39	25	13	11	48
4	14	13	18	37	36	168	656	35	24	13	11	45
5	14	12	18	38	57	125	258	35	22	13	14	45
6	14	12	18	38	50	103	148	37	22	13	22	47
7	14	12	18	34	42	90	111	36	22	13	14	49
8	14	12	18	34	40	74	93	47	61	13	14	61
9	14	12	269	44	38	66	79	1190	59	13	13	57
10	14	12	96	54	101	58	71	417	63	13	14	51
11	14	14	55	49	89	48	65	289	48	13	15	51
12	14	14	41	68	55	45	60	190	43	13	16	53
13	14	12	197	56	45	41	56	133	32	13	17	650
14	14	12	1540	47	42	41	680	105	27	13	18	2280
15	14	12	464	45	1270	41	357	81	24	13	18	715
16	14	12	371	43	434	41	279	68	22	13	19	678
17	14	13	315	41	331	39	229	62	22	13	21	635
18	14	14	202	40	239	35	144	53	22	13	21	579
19	14	18	146	55	153	40	122	48	21	13	21	515
20	14	17	112	251	117	48	97	45	21	12	23	370
21	14	17	93	96	95	45	84	38	21	12	23	286
22	14	102	79	71	77	272	79	38	21	12	25	265
23	14	36	67	59	61	151	70	82	21	10	30	259
24	14	32	54	49	74	94	60	86	21	11	51	263
25	13	35	46	43	343	69	55	53	76	11	35	510
26	13	27	42	40	134	53	49	40	56	12	34	377
27	13	24	40	37	96	45	43	37	27	10	34	354
28	13	21	40	36	103	43	41	33	19	9.7	34	359
29	19	21	40	36	---	44	61	32	16	9.7	36	388
30	14	20	40	34	---	805	47	31	15	9.7	37	454
31	13	---	38	34	---	274	---	29	---	10	37	---
TOTAL	434	604	4533	1613	4223	4607	4452	3487	926	378.1	700	10524
MEAN	14.0	20.1	146	52.0	151	149	148	112	30.9	12.2	22.6	351
MAX	19	102	1540	251	1270	854	680	1190	76	14	51	2280
MIN	13	12	18	34	33	35	41	29	15	9.7	11	38
AC-FT	861	1200	8990	3200	8380	9140	8830	6920	1840	750	1390	20870

07329852 ROCK CREEK AT SULPHUR, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	32.8	50.3	97.8	69.6	67.5	164	158	156	111	51.5	19.9	142
MAX	64.5	115	210	88.7	151	261	390	406	211	121	22.6	351
(WY)	1990	1992	1992	1990	1993	1990	1990	1990	1991	1992	1993	1993
MIN	14.0	20.1	11.9	52.0	30.7	28.0	46.2	32.3	30.9	12.2	16.6	16.6
(WY)	1993	1993	1990	1993	1991	1991	1992	1992	1993	1993	1990	1992

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1990-93	
ANNUAL TOTAL	27871		36481.1			
ANNUAL MEAN	76.2		99.9		93.3	
HIGHEST ANNUAL MEAN					129	1990
LOWEST ANNUAL MEAN					52.6	1991
HIGHEST DAILY MEAN	1560	Mar 4	2280	Sep 14	3450	May 2 1990
LOWEST DAILY MEAN	12	Nov 5	9.7	Jul 28-30	6.8	Jan 14 1990
ANNUAL SEVEN-DAY MINIMUM	12	Nov 4	10	Jul 27	7.4	Jan 11 1990
INSTANTANEOUS PEAK FLOW			7840	Sep 14	10400	Apr 26 1990
INSTANTANEOUS PEAK STAGE			17.50	Sep 14	19.65	Apr 26 1990
ANNUAL RUNOFF (AC-FT)	55280		72360		67610	
10 PERCENT EXCEEDS	152		270		201	
50 PERCENT EXCEEDS	35		38		32	
90 PERCENT EXCEEDS	14		13		14	



07329852 ROCK CREEK AT SULPHUR, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April 1990 to current year.

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

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
MAY											
05...	1517	2.00	20.5	742	1028	1028	37	5.82	635	13.8	8.5
05...	1518	6.00	20.5	742	1028	1028	37	5.82	634	13.9	8.5
05...	1519	10.0	20.5	742	1028	1028	37	5.82	632	13.9	8.5
05...	1520	14.0	20.5	742	1028	1028	37	5.82	632	13.9	8.5
05...	1521	18.0	20.5	742	1028	1028	37	5.82	632	13.8	8.5
05...	1522	22.0	20.5	742	1028	1028	37	5.82	634	13.8	8.5
05...	1523	26.0	20.5	742	1028	1028	37	5.82	635	13.8	8.5
05...	1524	30.0	20.5	742	1028	1028	37	5.82	635	13.8	8.5
05...	1525	34.0	20.5	742	1028	1028	37	5.82	635	13.8	8.5
05...	1526	38.0	20.5	742	1028	1028	37	5.82	634	13.9	8.5
05...	1527	42.0	20.5	742	1028	1028	37	5.82	634	13.9	8.5
05...	1528	46.0	20.5	742	1028	1028	37	5.82	634	13.9	8.5
05...	1529	50.0	20.5	742	1028	1028	37	5.82	635	13.9	8.5
05...	1530	54.0	20.5	742	1028	1028	37	5.82	635	13.8	8.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
DEC												
01...	1530	1028	80020	19	888	8.5	16.0	10.5	740	11.6	107	280
FEB												
09...	0900	1028	80020	37	703	8.4	6.0	9.5	740	11.9	108	270
MAY												
05...	1500	1028	80020	37	635	8.3	21.0	20.5	742	13.8	158	240
AUG												
05...	1500	1028	80020	11	959	8.0	31.0	25.5	741	10.4	131	300

07329852 ROCK CREEK AT SULPHUR, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CARBONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	ALKALINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DISSOLVED (MG/L AS SO4) (00945)
DEC 01...	0	67	27	68	34	2	3.3	340	10	295	21
FEB 09...	0	72	21	36	23	1	2.1	326	7	279	20
MAY 05...	0	61	22	39	26	1	2.2	300	0	246	18
AUG 05...	47	63	34	88	39	2	3.5	305	0	250	21

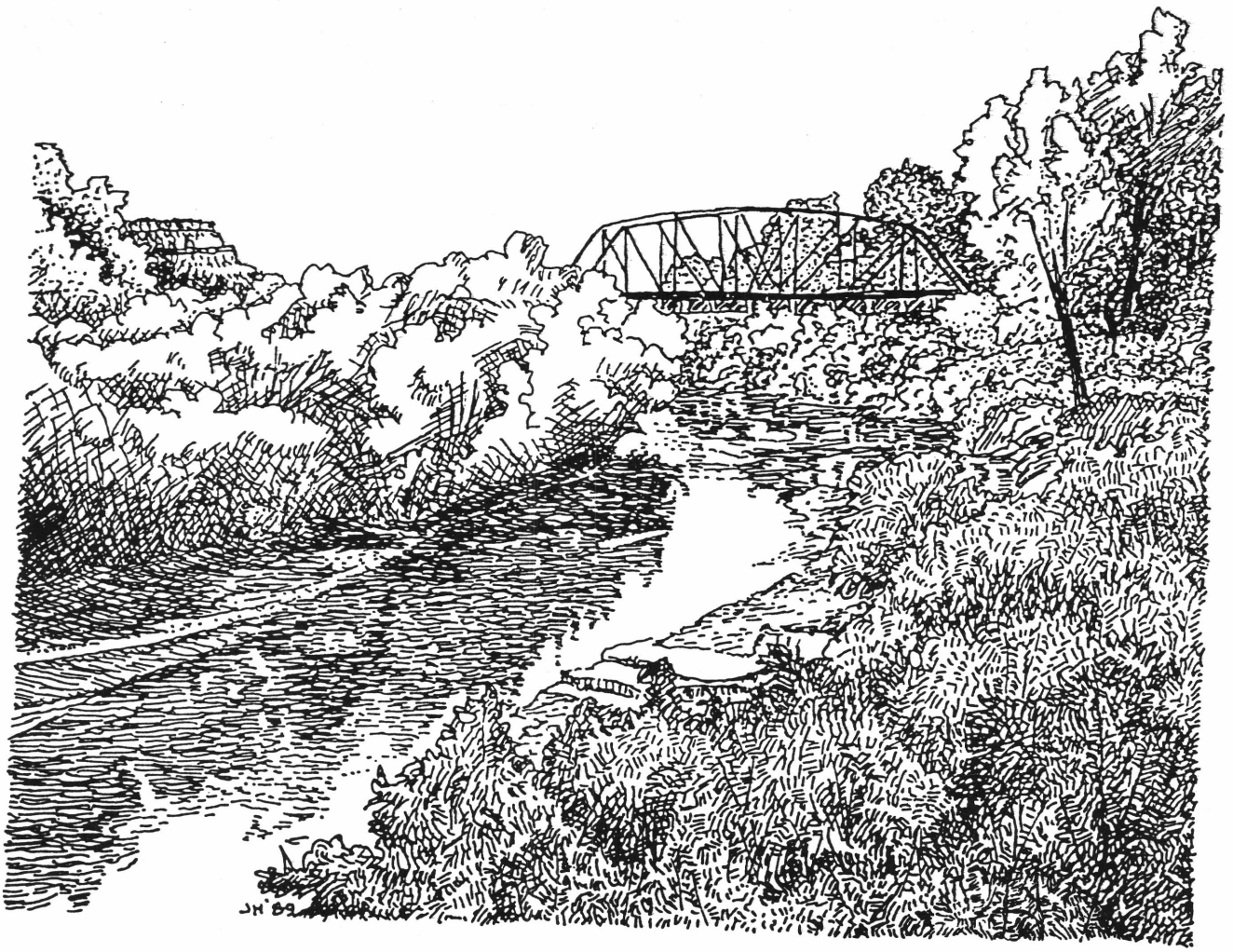
DATE	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)
DEC 01...	110	0.20	9.4	457	483	0.62	23.6	0.090	0.010	--	0.100
FEB 09...	57	0.20	7.6	371	383	0.50	37.1	--	--	--	--
MAY 05...	62	0.20	7.1	349	359	0.47	34.9	--	--	<0.010	--
AUG 05...	140	0.20	11	497	511	0.68	14.8	0.130	--	<0.010	--

DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)
DEC 01...	--	0.010	--	0.01	--	--	<0.20	--	<0.010	<0.010	--
FEB 09...	--	--	--	--	--	--	<0.20	--	<0.010	--	--
MAY 05...	<0.050	--	0.010	--	0.01	0.29	0.30	0.30	0.010	--	<0.010
AUG 05...	0.130	--	0.030	--	0.04	0.17	0.20	0.33	<0.010	--	<0.010

07329852 ROCK CREEK AT SULPHUR, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
DEC											
01...	<1	140	<1	<8	<1	31	<1	16	0.10	<1	<10
FEB											
09...	<1	80	<1	10	<1	43	<1	19	<0.10	<1	<10
MAY											
05...	<1	90	<1	<1	1	8	<1	7	<0.10	<1	<10
AUG											
05...	<1	150	<1	<1	1	3	<1	4	<0.10	<1	<10



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.

WATER-DISCHARGE RECORDS

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 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e800	e900	e3800	2190	2180	12300	12600	8680	e6000	e2500	743	e580
2	e720	792	e3300	2160	e2050	21400	8680	8980	5160	e2200	731	e560
3	e650	733	e2800	2130	1930	13300	6290	13100	4900	e2100	703	e600
4	e600	728	e2750	2120	2130	9840	8390	13600	e4700	e1900	700	e720
5	e585	719	e2650	2070	2310	7630	9480	12000	e4300	e1800	685	e780
6	e570	686	e2600	2060	2600	6100	7450	12400	e4000	e1700	e670	e700
7	e565	e650	e2450	2050	2490	5230	6160	14600	e4100	e1600	e660	e620
8	e580	634	e2500	2060	2410	4630	5410	11100	e4300	e2500	e670	e600
9	e560	648	2970	2170	2210	4190	4660	29900	e4500	e2480	e660	e640
10	S552	671	9970	2970	2480	3850	3740	53300	e5000	e2400	658	e600
11	e548	1260	8380	4590	e3000	3540	3410	46200	e5400	e2200	633	e560
12	e542	10900	5860	e5600	e2950	3230	3170	37100	e5200	e2000	602	e520
13	538	5430	5360	e5900	e2900	2860	3230	31000	e4500	e1800	575	e500
14	531	3940	19800	e4500	2860	2420	11000	33500	e4200	e1650	554	17500
15	533	3140	23000	e3700	14600	2340	14800	32100	e4000	e1500	525	12900
16	535	2600	16500	e3300	17500	2230	12100	23800	e3900	e1400	508	7150
17	525	2310	13400	e3000	13600	2150	10100	19300	e3700	e1400	477	4920
18	517	1990	11600	e2900	13400	2020	9650	17400	e3500	e1600	454	3820
19	511	1860	9610	e2700	11300	1990	8630	15100	e3400	e1900	435	3220
20	e504	2360	7480	5710	9020	2960	7050	13600	e3300	e1700	417	2890
21	497	4180	6210	6360	7360	3440	5740	12300	e3200	e1500	405	2570
22	e492	5600	5420	5210	6000	4030	4880	11000	e5000	e1400	387	2280
23	e485	8740	4680	4380	4930	5830	4230	11800	e4200	1310	388	1860
24	e480	6190	3790	3770	4050	5310	3860	21100	e4000	1120	e650	1700
25	538	6080	3440	3590	10400	e4700	3630	17700	e3000	1030	e1300	1990
26	538	6810	3130	3410	9290	e4100	3330	13300	e3200	980	e1700	3680
27	537	6170	2950	3040	6430	e3800	3050	12000	e3700	970	e1200	2180
28	545	5410	2800	2820	5050	e3500	2880	e10500	e4000	898	e1000	1720
29	596	e5000	2640	2640	---	e3300	3340	e9000	e3300	870	e800	1410
30	589	e4600	2440	2500	---	17100	6550	e8000	e2700	802	e700	1170
31	615	---	2340	2380	---	20200	---	e7000	---	774	e640	---
TOTAL	17378	101731	196620	103980	167430	189520	197490	580460	124360	49984	21230	80940
MEAN	561	3391	6343	3354	5980	6114	6583	18720	4145	1612	685	2698
MAX	800	10900	23000	6360	17500	21400	14800	53300	6000	2500	1700	17500
MIN	480	634	2340	2050	1930	1990	2880	7000	2700	774	387	500
AC-FT	34470	201800	390000	206200	332100	375900	391700	1151000	246700	99140	42110	160500

e Estimated

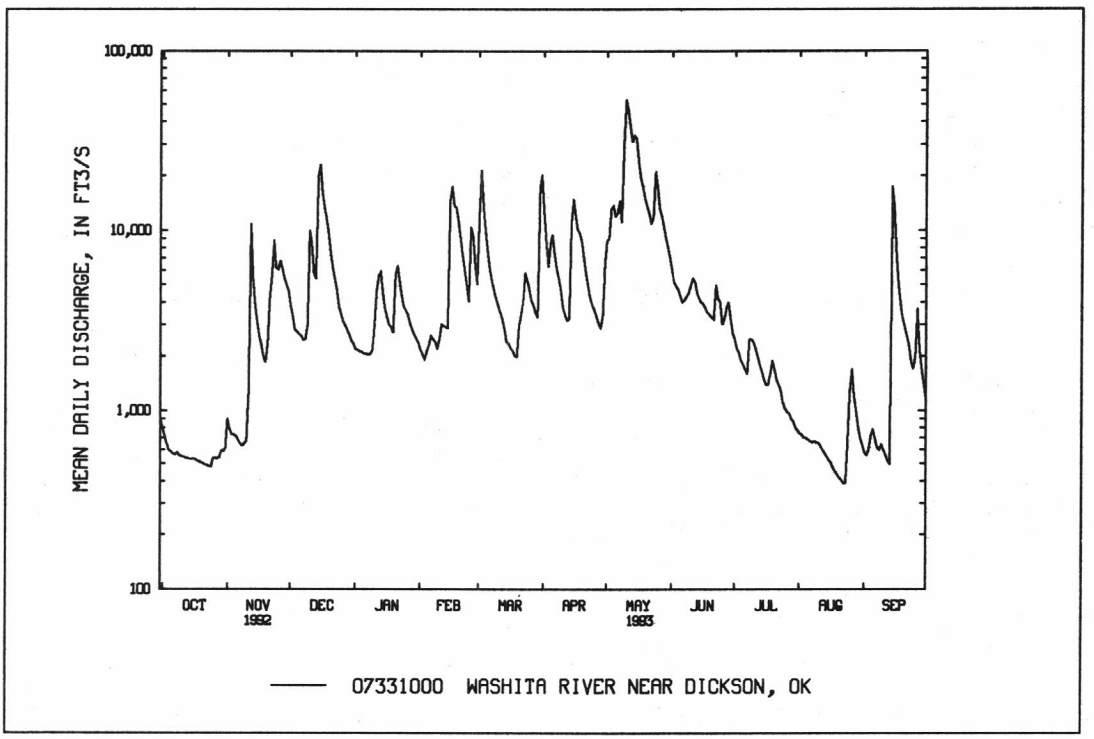
07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1533	1476	1341	1073	1327	2183	2252	3971	3380	924	488	1050
MAX	8274	5879	9324	4081	5980	10890	15940	18720	12660	4042	2611	5236
(WY)	1987	1987	1992	1985	1993	1990	1990	1993	1987	1987	1975	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

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	1111907		1831123			
ANNUAL MEAN	3038		5017		[a]1750	
HIGHEST ANNUAL MEAN					5644	1987
LOWEST ANNUAL MEAN					340	1964
HIGHEST DAILY MEAN	23000	Dec 15	53300	May 10	94400	May 3 1990
LOWEST DAILY MEAN	480	Oct 24	387	Aug 22	[b].10	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	498	Oct 18	423	Aug 17	.30	Aug 8 1964
INSTANTANEOUS PEAK FLOW			56500	May 10	[c]118000	May 3 1990
INSTANTANEOUS PEAK STAGE			31.64	May 10	45.24	May 30 1987
ANNUAL RUNOFF (AC-FT)	2205000		3632000		1268000	
10 PERCENT EXCEEDS	6180		12300		4010	
50 PERCENT EXCEEDS	2160		2970		609	
90 PERCENT EXCEEDS	718		573		116	

[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 was 44.26 ft.



07331000 WASHITA RIVER NEAR DICKSON, OK--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1944 to current year.
PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1944 to January 1982, February 1984 to April 1990.
WATER TEMPERATURE: April 1947 to January 1982, February 1984 to April 1990.
REMARKS.--Samples were collected bimonthly and specific conductance, pH, water temperature, alkalinity, and dissolved oxygen were determined in the field.
EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,120 microsiemens, Nov. 15, 1963; minimum daily, 95 microsiemens, Nov. 2, 1951.
WATER TEMPERATURE: Maximum daily, 38.0°C, July 16, 1985; minimum daily, 0.0°C on many days during winter periods.

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
AUG											
05...	1133	20.0	28.5	749	1028	1028	685	10.29	1480	9.0	8.2
05...	1136	35.0	28.5	749	1028	1028	685	10.29	1480	9.0	8.2
05...	1139	50.0	28.5	749	1028	1028	685	10.29	1490	9.0	8.2
05...	1142	65.0	28.5	749	1028	1028	685	10.29	1480	8.9	8.2
05...	1145	80.0	28.0	749	1028	1028	685	10.29	1480	9.0	8.2
05...	1148	95.0	28.0	749	1028	1028	685	10.29	1480	9.0	8.2
05...	1151	110	28.0	749	1028	1028	685	10.29	1480	9.0	8.2
05...	1154	125	28.0	749	1028	1028	685	10.29	1480	9.0	8.2
05...	1157	140	28.0	749	1028	1028	685	10.29	1480	9.0	8.2
05...	1200	155	28.0	749	1028	1028	685	10.29	1480	8.9	8.2
05...	1203	170	28.0	749	1028	1028	685	10.29	1480	8.9	8.2
05...	1206	185	28.0	749	1028	1028	685	10.29	1480	8.8	8.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT												
21...	1100	1028	80020	497	1450	8.2	22.5	15.5	17	725	8.7	92
MAR												
01...	1100	1028	80020	10400	618	8.2	6.5	6.5	480	745	11.3	95
APR												
21...	1045	1028	80020	5740	941	8.2	15.0	16.0	380	756	9.2	94
JUN												
03...	1030	1028	80020	4900	1080	8.2	30.5	24.5	490	734	7.7	97
AUG												
05...	1230	1028	80020	685	1480	8.2	30.5	28.0	2.2	749	9.0	118

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CARBONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)
OCT												
21...K16	51	670	430	150	70	91	23	2	3.6	280	2	
MAR												
01...K9000	5700	260	120	67	23	28	19	0.8	2.8	180	0	
APR												
21...530	550	400	200	100	37	50	21	1	3.7	246	0	
JUN												
03...K250	1400	480	270	120	44	44	16	0.9	4.5	260	0	
AUG												
05...84	49	720	540	170	72	90	21	1	4.7	225	0	

DATE	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)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)
OCT												
21...	232	480	95	0.40	8.9	1140	1040	1.55	1530	0.031	0.044	0.19
MAR												
01...	147	140	27	0.20	7.5	394	387	0.54	11100	0.440	0.440	1.9
APR												
21...	202	230	58	0.30	9.6	641	612	0.87	9930	0.530	0.530	2.3
JUN												
03...	213	330	41	0.40	11	760	728	1.03	10100	0.720	--	--
AUG												
05...	184	600	85	0.50	13	1190	1150	1.62	2200	--	--	--

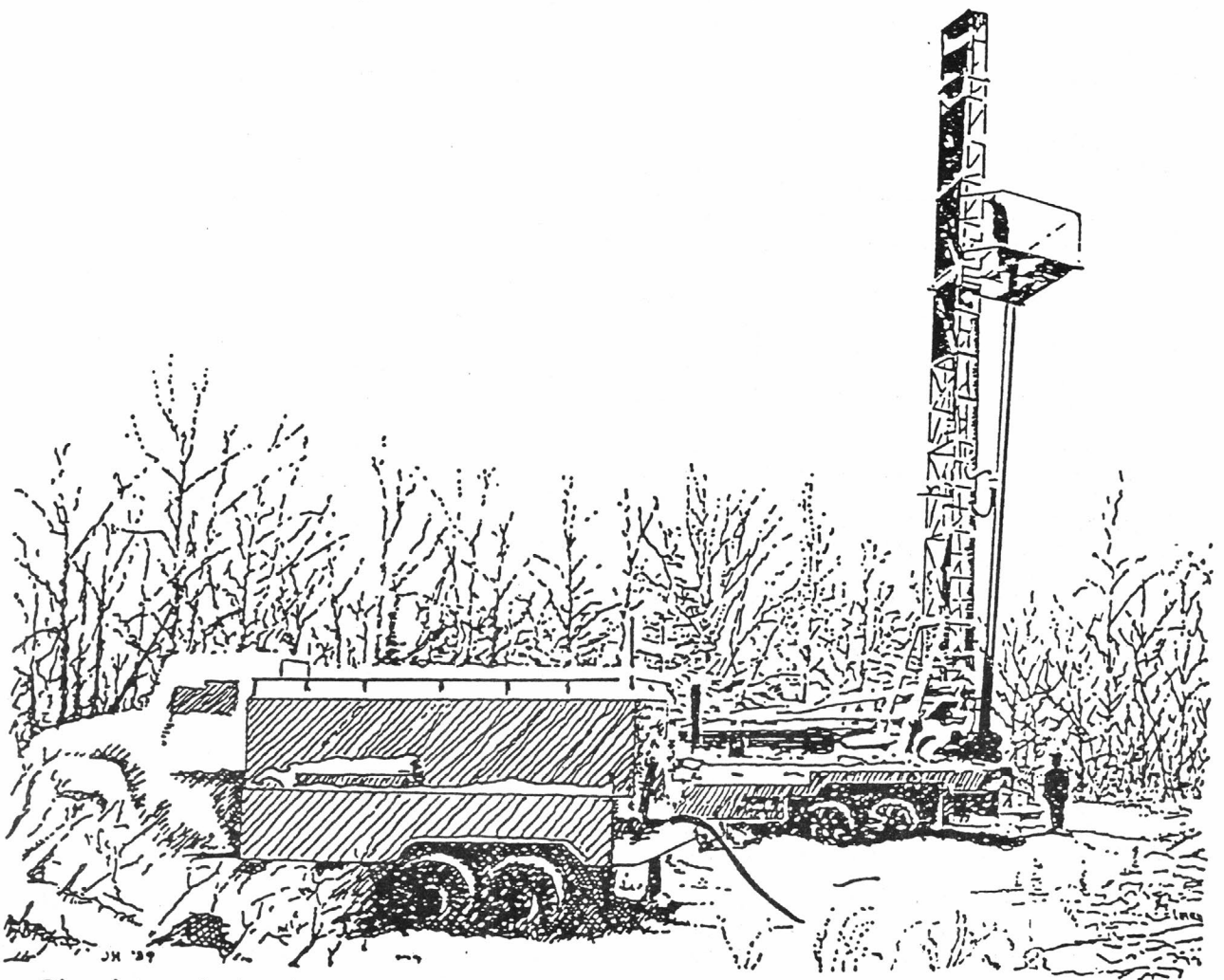
DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
OCT												
21...	0.020	0.07	0.051	0.064	0.030	0.020	0.04	0.03	0.67	0.70	0.75	3.3
MAR												
01...	0.010	0.03	--	0.450	--	0.060	--	0.08	1.9	2.0	2.5	--
APR												
21...	0.020	0.07	--	0.550	--	0.030	--	0.04	0.47	0.50	1.0	--
JUN												
03...	<0.010	--	--	0.720	--	0.020	--	0.03	0.28	0.30	1.0	--
AUG												
05...	<0.010	--	--	<0.050	--	0.030	--	0.04	1.2	1.2	1.2	--

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	PHOS-PHORUS ORGANIC TOTAL (MG/L AS P) (00670)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	IRON, DIS-SOLVED (UG/L AS FE) (01046)
OCT											
21...	0.160	0.15	0.050	0.050	0.030	0.09	0.11	20	200	<3	4
MAR											
01...	0.920	--	0.060	--	0.050	0.15	--	<10	100	<3	13
APR											
21...	--	--	0.090	--	0.050	0.15	--	--	--	--	--
JUN											
03...	0.060	--	0.060	--	0.050	0.15	--	<10	220	<3	<3
AUG											
05...	0.180	--	0.060	--	0.030	0.09	--	<10	230	<3	3

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT											
21...	28	6	<10	1	<1	<1.0	1900	<6	264	354	63
MAR											
01...	6	45	<10	1	<1	<1.0	560	<6	7610	214000	44
APR											
21...	--	--	--	--	--	--	--	--	1500	23200	83
JUN											
03...	13	1	<10	1	1	<1.0	1300	9	4060	53700	63
AUG											
05...	28	10	<10	2	1	<1.0	2100	14	--	--	--



Cleaning and plugging wells, winter 1984

07331500 LAKE TEXOMA NEAR DENISON, TX

LOCATION.--Lat 33o49'05", long 96o34'20", in NE 1/4 sec.33, T.8 S., R.7 E., Bryan County, OK, Hydrologic Unit 11130210, in control tower of Denison Dam on Red River, 1.2 mi upstream from Shawnee Creek, 1.8 mi upstream from Sand Creek, 4.0 mi northwest of Denison, 6.0 mi southwest of Colbert, and at mile 725.9.

DRAINAGE AREA.--39,719 mi^2 of which 5,936 mi^2 is probably noncontributing.

PERIOD OF RECORD.--July 1942 to September 1993 (discontinued). Month-end contents only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Mar. 30, 1944, nonrecording gage at same site and datum. Prior to Oct. 1, 1948, supplementary nonrecording gage in Cumberland pool at the same datum.

REMARKS.--See next page.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,028,000 acre-ft, May 6, 1990, elevation, 644.76 ft. Minimum contents since power pool was first filled, 1,565,100 acre-ft, Sept. 16, 1964; minimum elevation, 599.96 ft, Mar. 1, 2, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,427,000 acre-ft, May 16, elevation, 633.49 ft. Minimum, 2,496,000 acre-ft, Nov. 8, elevation, 615.24 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2569000	2510000	2816000	2828000	2637000	2903000	2679000	2623000	3484000	2831000	2720000	2539000
2	2569000	2505000	2797000	2817000	2624000	2959000	2704000	2649000	3428000	2828000	2715000	2538000
3	2571000	2513000	2783000	2810000	2618000	3015000	2700000	2659000	3366000	2822000	2700000	2539000
4	2572000	2504000	2775000	2802000	2615000	3033000	2703000	2679000	3307000	2817000	2689000	2536000
5	2573000	2501000	2763000	2790000	2606000	3016000	2694000	2692000	3240000	2813000	2685000	2533000
6	2570000	2498000	2757000	2778000	2597000	2975000	2672000	2706000	3175000	2805000	2668000	2532000
7	2576000	2499000	2759000	2767000	2591000	2925000	2668000	2704000	3109000	2802000	2657000	2525000
8	2565000	2500000	2752000	2751000	2585000	2879000	2653000	2711000	3065000	2797000	2648000	2531000
9	2562000	2501000	2757000	2753000	2577000	2842000	2647000	3040000	3017000	2797000	2643000	2531000
10	2561000	2499000	2754000	2736000	2574000	2804000	2645000	3315000	3008000	2798000	2640000	2527000
11	2560000	2506000	2747000	2730000	2570000	2767000	2641000	3656000	3020000	2799000	2639000	2520000
12	2556000	2512000	2742000	2728000	2558000	2749000	2636000	3986000	3008000	2799000	2636000	2515000
13	2553000	2520000	2771000	2721000	2550000	2724000	2631000	4219000	2991000	2799000	2633000	2525000
14	2550000	2533000	2903000	2711000	2547000	2703000	2657000	4374000	2971000	2804000	2626000	2564000
15	2538000	2552000	2992000	2708000	2603000	2688000	2660000	4421000	2943000	2807000	2619000	2593000
16	2533000	2565000	3095000	2700000	2669000	2682000	2650000	4421000	2921000	2807000	2614000	2616000
17	2533000	2577000	3167000	2694000	2758000	2666000	2655000	4399000	2903000	2806000	2607000	2635000
18	2533000	2584000	3202000	2687000	2840000	2646000	2655000	4361000	2888000	2805000	2601000	2646000
19	2528000	2602000	3205000	2681000	2879000	2643000	2659000	4300000	2875000	2806000	2595000	2653000
20	2527000	2608000	3186000	2690000	2884000	2642000	2646000	4232000	2860000	2813000	2589000	2664000
21	2525000	2631000	3160000	2689000	2877000	2639000	2639000	4158000	2848000	2815000	2582000	2665000
22	2524000	2650000	3123000	2687000	2859000	2647000	2638000	4085000	2838000	2814000	2573000	2665000
23	2522000	2693000	3083000	2696000	2835000	2641000	2636000	4030000	2827000	2809000	2562000	2667000
24	2517000	2771000	3043000	2689000	2826000	2643000	2635000	3967000	2823000	2800000	2577000	2666000
25	2516000	2814000	3013000	2690000	2872000	2642000	2630000	3912000	2823000	2790000	2564000	2669000
26	2517000	2824000	2978000	2686000	2885000	2638000	2623000	3852000	2829000	2782000	2562000	2670000
27	2513000	2830000	2943000	2682000	2877000	2635000	2614000	3789000	2828000	2772000	2559000	2664000
28	2510000	2840000	2905000	2678000	2862000	2634000	2610000	3738000	2830000	2763000	2554000	2659000
29	2509000	2844000	2879000	2669000	---	2631000	2618000	3684000	2834000	2748000	2551000	2657000
30	2507000	2828000	2854000	2660000	---	2625000	2616000	3621000	2834000	2738000	2549000	2652000
31	2504000	---	2840000	2649000	---	2635000	---	3556000	---	2728000	2543000	---

07331500 LAKE TEXOMA NEAR DENISON, TX--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MAX	2576000	2844000	3205000	2828000	2885000	3033000	2704000	4421000	3484000	2831000	2720000	2670000
MIN	2504000	2498000	2742000	2649000	2547000	2625000	2610000	2623000	2823000	2728000	2543000	2515000
(‡)	615.34	619.03	619.15	617.06	619.38	616.91	616.68	626.16	619.09	617.94	615.83	617.10
(‡‡)	-65	+324	+12	-191	+213	-227	-19	+940	-722	-106	-185	+109

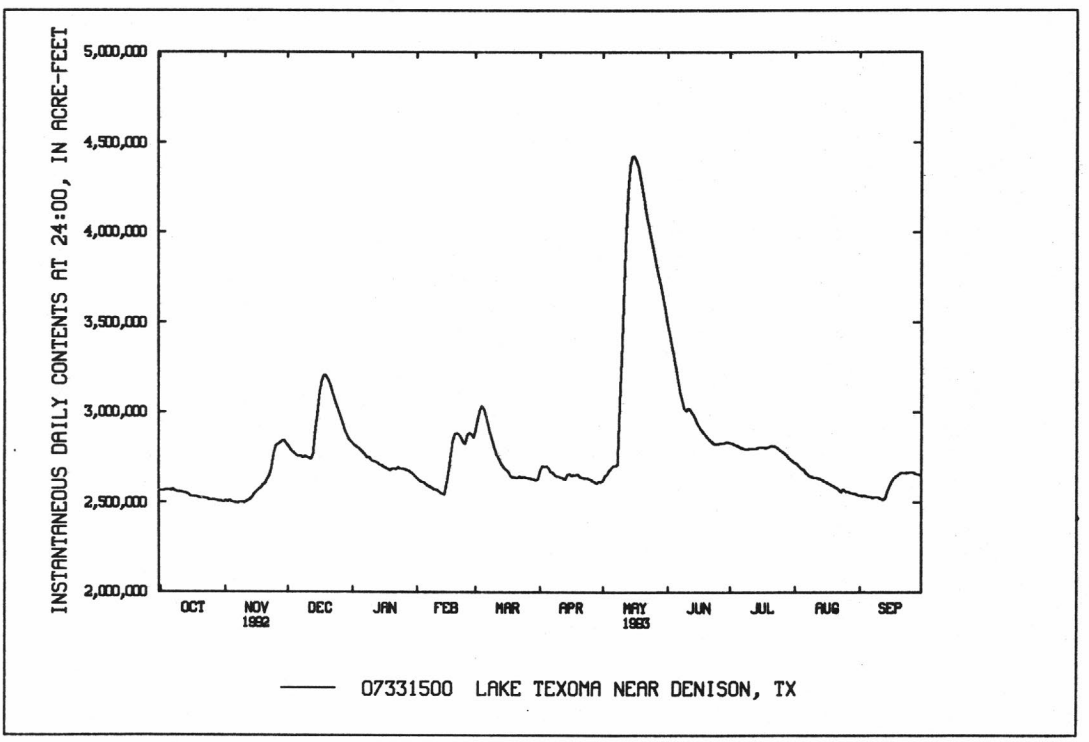
CAL YR 1992 MAX 3820000 MIN 2498000 ‡‡ +1,041
WTR YR 1993 MAX 4421000 MIN 2498000 ‡‡ +83

‡ELEVATION, IN FEET, AT END OF MONTH
‡‡CHANGE IN CONTENTS, IN THOUSANDS OF ACRE-FEET

REMARKS.--Reservoir is formed by a rolled earthfill dam. The controlled outlet consists of eight 20-foot diameter conduits and the uncontrolled outlet is a concrete, ogee-type weir spillway. Flow was diverted through conduits July 27, 1942; regulated storage began Oct. 31, 1943; power pool was first filled March 15, 1945. Capacity, based on 1969 survey, 5,312,000 acre-ft at elevation 640.0 ft, crest of spillway, 2,643,000 acre-ft at elevation 617.0 ft maximum power pool; 1,031,000 acre-ft at elevation 590.0 ft, minimum power pool, in Denison pool. Dead storage, 11,000 acre-ft at elevation 610.0 ft in Cumberland pool. When contents are below 2,105,000 acre-ft, the reservoir is divided into two pools by protective levees around the Cumberland oil field on the Washita River arm with bottom outlet channel for the upper pool (known as Cumberland pool) at elevation 610 ft. At higher elevations the two pools are considered as being at a common level, contents being computed from gage in Denison pool. Figures given represent total contents of both pools. Reservoir is used principally for flood control and power development. Revised capacity table, based on survey in 1969, use since Oct. 1, 1977. U.S. Army Corps of Engineers' satellite telemeter at station.

Capacity table (elevation, in feet, and contents, in acre-ft)

614	2,399,000	632	4,240,000
620	2,920,000	638	5,029,000
626	3,538,000	645	6,066,000



07332500 BLUE RIVER NEAR BLUE, OK

LOCATION.--Lat 33°59'49", long 96°14'27", on line between sec.27 and 34, T.6 S., R.10 E., Bryan County, Hydrologic Unit 11140102, on left bank on downstream side near end of bridge on U.S. Highway 70, 1.0 mi west of Blue, 7.0 mi east of Durant, 7.7 mi upstream from Caddo Creek, and at mile 38.8.

DRAINAGE AREA.--476 mi^2.

PERIOD OF RECORD.--June 1936 to current year. Monthly discharge only for some periods, published in WSP 1311, 1731.

REVISED RECORDS.--WSP 957: 1938. WSP 1241: 1936, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 503.60 ft above sea level. Prior to Mar. 13, 1945, nonrecording gage and Mar. 13, 1945, to Feb. 2, 1960, water-stage recorder at site 1.2 mi downstream at datum 5.00 ft lower.

REMARKS.--Records fair. Some regulation at low flow by a State fish hatchery, 16.0 mi upstream from station. Small diversion for municipal water supply for city of Durant upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station. No flow also occurred Aug. 4, 1936, result of regulation at fish hatchery, and no flow Sept. 19 to Oct. 16, 1956.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Dec. 15	2400	11,200	24.84	May 7	2000	6,650	20.45
Feb 16	0400	6,550	20.32	May 9	2400	34,100	35.15
Mar. 2	0400	5,970	19.54	June 11	0030	5,030	18.17

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	78	103	139	268	218	2690	707	383	236	e135	41	28
2	77	426	129	252	215	5630	379	298	216	e125	41	28
3	76	127	122	250	224	3960	333	272	204	e115	43	30
4	75	91	115	262	291	1010	1120	262	192	e110	47	39
5	73	71	109	267	362	702	1980	242	181	e105	47	36
6	72	65	111	251	369	597	853	507	173	e100	46	29
7	68	62	112	212	330	543	559	5760	168	e98	53	28
8	67	62	113	183	263	502	475	2420	163	e94	63	28
9	66	61	417	170	233	463	415	12300	e160	e90	50	29
10	65	62	750	e165	641	423	367	21500	2290	e86	47	30
11	64	69	500	e210	1440	384	340	8490	4490	e84	43	30
12	64	105	259	e330	673	358	317	2370	3340	e80	40	29
13	63	154	212	e300	395	338	301	1100	1340	e78	35	28
14	63	92	4070	e260	313	324	1010	812	555	e74	37	328
15	61	73	8020	e250	3210	328	2910	659	386	e70	35	1770
16	61	65	9040	e240	6160	1210	1460	575	343	e68	32	1270
17	61	62	2810	e230	4620	649	622	516	303	e64	32	205
18	59	60	822	e230	952	408	507	466	289	e62	30	123
19	60	70	639	242	633	509	471	525	276	61	28	92
20	61	108	551	2640	572	2050	403	416	262	e60	28	79
21	61	110	486	1630	529	948	342	375	216	e58	28	77
22	61	812	437	653	466	823	308	352	201	e56	28	76
23	61	1260	401	449	400	1780	293	341	188	e54	27	72
24	61	555	366	362	374	912	287	1810	178	e52	32	64
25	62	732	337	313	2750	564	286	1190	194	e50	143	58
26	63	530	320	281	2430	452	382	425	382	e48	47	62
27	58	285	307	268	803	389	301	316	376	e47	37	93
28	57	199	295	258	568	359	257	278	222	e46	31	113
29	57	170	293	248	---	339	646	357	e170	e45	30	63
30	59	152	292	234	---	326	622	336	e150	44	28	58
31	60	---	286	223	---	1190	---	268	---	42	28	---
TOTAL	1994	6793	32860	12131	30434	31160	19253	65921	17844	2301	1277	4995
MEAN	64.3	226	1060	391	1087	1005	642	2126	595	74.2	41.2	166
MAX	78	1260	9040	2640	6160	5630	2910	21500	4490	135	143	1770
MIN	57	60	109	165	215	324	257	242	150	42	27	28
AC-FT	3960	13470	65180	24060	60370	61810	38190	130800	35390	4560	2530	9910

e Estimated

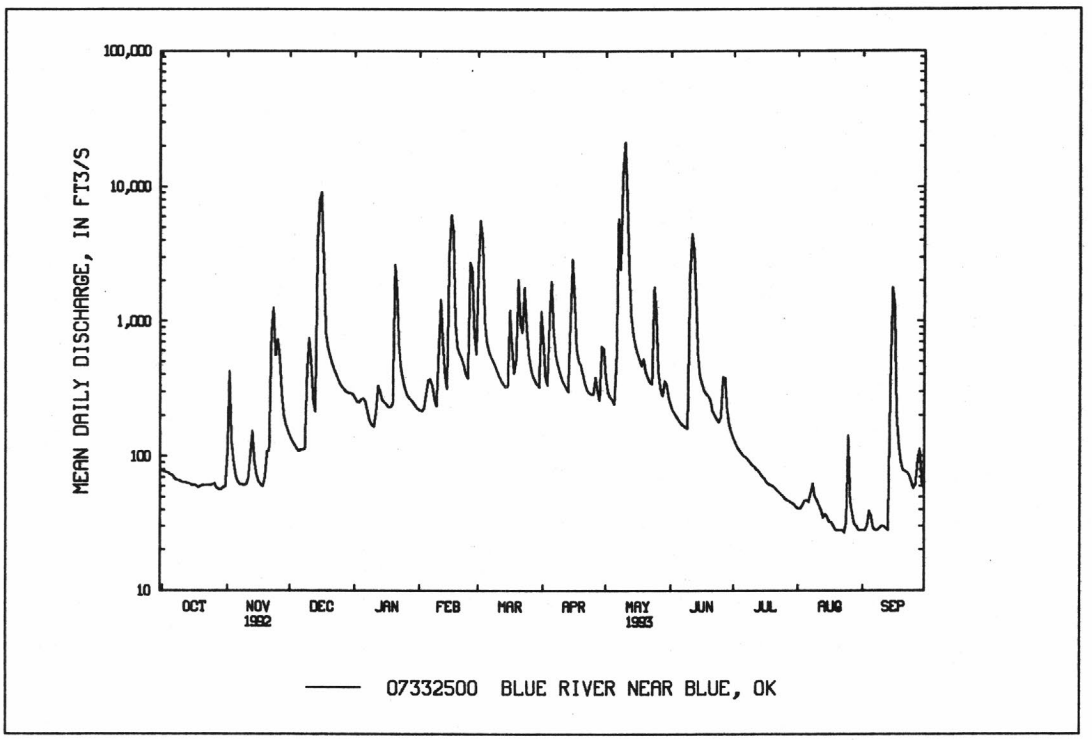
07332500 BLUE RIVER NEAR BLUE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	248	248	246	222	381	456	586	642	452	154	76.6	163
MAX	3613	1371	1384	849	2156	3089	3846	2953	2510	780	755	1501
(WY)	1982	1975	1972	1968	1938	1945	1990	1990	1945	1950	1950	1957
MIN	4.37	11.3	17.8	18.1	27.0	22.8	51.5	33.2	24.2	5.23	.94	.42
(WY)	1940	1940	1940	1940	1967	1940	1956	1939	1939	1956	1956	1956

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1936-93	
ANNUAL TOTAL	177480		226963			
ANNUAL MEAN	485		622		323	
HIGHEST ANNUAL MEAN					972	1945
LOWEST ANNUAL MEAN					30.8	1956
HIGHEST DAILY MEAN	9040	Dec 16	21500	May 10	45500	Oct 14 1981
LOWEST DAILY MEAN	57	Oct 28	27	Aug 23	[a].00	Aug 3 1936
ANNUAL SEVEN-DAY MINIMUM	59	Oct 25	29	Aug 17	.00	Sep 19 1956
INSTANTANEOUS PEAK FLOW			34100	May 9	65200	Oct 14 1981
INSTANTANEOUS PEAK STAGE			35.15	May 9	[b]44.20	Oct 14 1981
ANNUAL RUNOFF (AC-FT)	352000		450200		233800	
10 PERCENT EXCEEDS	900		1190		542	
50 PERCENT EXCEEDS	221		240		86	
90 PERCENT EXCEEDS	72		44		27	

[a]Result of regulation at fish hatchery and no flow Sept. 19 to Oct. 16, 1956.
[b]From high-water mark.



07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK

LOCATION.--Lat 34°16'17", long 95°54'43", in NE 1/4 NW 1/4 sec.26, T.3 S., R.13 E., Atoka County, Hydrologic Unit 11140103, on downstream left bank of bridge on State Highway 3, 1.3 mi downstream from McGee Creek, 2.8 mi northwest of Farris, and at mile 57.7.

DRAINAGE AREA.--1,087 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 439.58 ft above sea level. Prior to Mar. 13, 1945, nonrecording gage, and Mar. 13, 1945, to Sept. 30, 1961, water-stage recorder at same site at datum 7 ft higher. Prior to Oct. 1, 1989, water-stage recorder at same site and datum 5 ft higher.

REMARKS.--No estimated daily discharges. Records good. Some regulation since June 1959 by Atoka Reservoir, drainage area, 176 mi^2; pipeline diversions to Oklahoma City since November 1963, and since April 1987 by McGee Creek Lake, drainage area 178 mi^2. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	65	204	1470	510	199	2990	1870	2820	1590	234	20	17
2	58	165	1420	406	179	7930	803	1590	1520	182	19	16
3	53	79	1370	352	164	7650	446	1180	1490	147	19	19
4	49	149	1130	509	168	5670	1930	974	1320	117	20	18
5	46	113	848	670	207	2510	6340	594	991	95	20	17
6	44	81	807	586	320	1780	7260	396	984	94	26	18
7	42	64	710	553	565	1550	5450	641	838	115	26	20
8	41	54	496	516	455	1300	2080	505	643	102	31	23
9	39	50	1700	552	314	940	1370	12000	1120	59	31	23
10	39	49	3920	872	648	497	979	18000	5330	52	43	24
11	39	74	4700	1320	2940	409	775	15600	6930	47	36	23
12	37	362	2980	1380	3570	332	445	14900	4590	43	30	21
13	35	1340	1720	1570	1960	328	342	11400	2280	40	27	22
14	34	1180	8180	1350	998	254	4200	6270	1650	38	24	782
15	34	450	14200	872	4520	219	10700	2920	1700	36	23	2120
16	32	246	15200	621	10200	561	9910	1900	1640	34	22	3970
17	31	173	15400	536	9810	451	8920	1690	2150	32	20	5070
18	318	137	14000	499	9970	355	4770	1490	1860	31	19	3580
19	187	158	7240	447	6770	510	2350	1340	1160	30	18	596
20	104	248	2760	3660	2510	1830	2280	718	1110	29	18	2990
21	69	249	2370	5740	1920	3070	1950	452	970	28	17	3680
22	53	4760	2180	4730	1730	2420	1730	659	875	27	17	1690
23	45	5060	2080	2210	1460	3560	1360	1240	809	27	16	702
24	41	5420	2140	1550	1120	3780	813	5630	654	26	20	326
25	38	4870	2020	1230	2980	2350	1950	3410	513	24	18	296
26	35	3270	1950	1050	5720	1540	2840	2100	1970	23	17	437
27	34	2220	1960	937	5420	1150	2060	1630	1730	22	17	932
28	33	1380	1850	861	2410	1000	1390	1440	794	22	19	691
29	34	1140	1820	696	---	923	1780	1600	470	22	20	404
30	34	1170	1560	547	---	706	3130	1720	323	21	19	303
31	37	---	878	424	---	1050	---	1650	---	21	18	---
TOTAL	1780	34915	121059	37756	79227	59615	92223	118459	50004	1820	690	28830
MEAN	57.4	1164	3905	1218	2830	1923	3074	3821	1667	58.7	22.3	961
MAX	318	5420	15400	5740	10200	7930	10700	18000	6930	234	43	5070
MIN	31	49	496	352	164	219	342	396	323	21	16	16
AC-FT	3530	69250	240100	74890	157100	118200	182900	235000	99180	3610	1370	57180

07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1993, BY WATER YEAR (WY)

OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	
MEAN	316	781	2075	1166	1364	2093	2150	3090	1794	440	323	639
MAX	1489	2502	4223	1563	2830	4541	6622	8384	2764	1854	1525	1026
(WY)	1992	1992	1992	1991	1993	1990	1990	1990	1991	1992	1992	1992
MIN	15.9	27.6	25.5	709	124	1020	484	34.7	25.0	26.8	15.3	13.8
(WY)	1989	1990	1990	1989	1991	1991	1988	1988	1988	1988	1988	1988

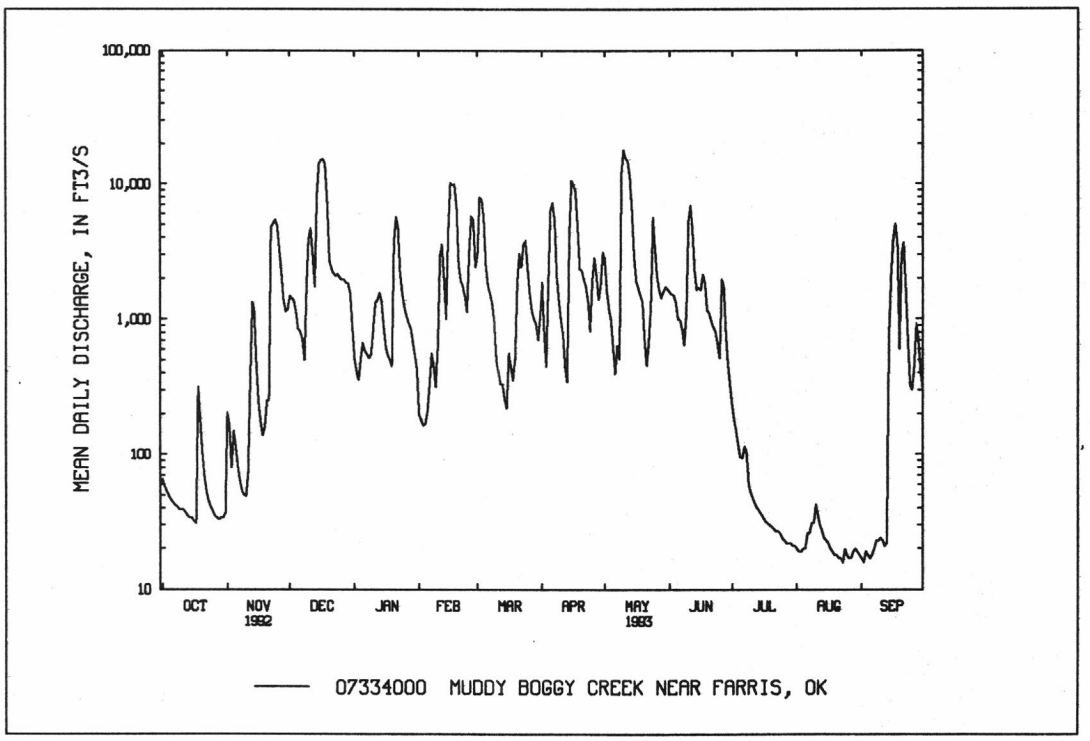
SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1988-93	
ANNUAL TOTAL	599599		626378			
ANNUAL MEAN	1638		1716		[a]1353	
HIGHEST ANNUAL MEAN					2145	1990
LOWEST ANNUAL MEAN					682	1988
HIGHEST DAILY MEAN	15400	Dec 17	18000	May 10	45700	May 5 1990
LOWEST DAILY MEAN	31	Oct 17	16	Aug 23	[b]9.9	Nov 9 1988
ANNUAL SEVEN-DAY MINIMUM	35	Oct 11	17	Aug 21	11	Oct 18 1991
INSTANTANEOUS PEAK FLOW			20700	May 9	[c]49800	May 5 1990
INSTANTANEOUS PEAK STAGE			41.87	May 9	[d]48.73	May 5 1990
ANNUAL RUNOFF (AC-FT)	1189000		1242000		979900	
10 PERCENT EXCEEDS	4520		4760		3290	
50 PERCENT EXCEEDS	950		696		307	
90 PERCENT EXCEEDS	63		23		20	

[a]Prior to regulation, water years 1938-86, 880 ft^3/s.

[b]No flow at times in many years prior to regulation.

[c]Maximum discharge for period of record 61,900 ft^3/s, June 17, 1945, from rating curve above 37,000 ft^3/s.

[d]Maximum gage height for period of record 51.94 ft, June 17, 1945, present datum.



07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK

LOCATION.--Lat 34°35'40", long 96°39'55", in SW 1/4 SW 1/4 sec.34, T.2 N., R.6 E., Pontotoc County, Hydrologic Unit 11140104, upstream from weir outlet of spring, 0.5 mi upstream from Big Spring Creek, 2.0 mi west of Fittstown, and 12.0 mi south of Ada.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Creek only, April 1959 to current year. Combined flow from December 1989 to current year.
GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 1,021.17 ft above sea level. Flow meters on diversion pipe and wells, to City of Ada.
REMARKS.--Records fair. Prior to December 1989 records do not include diversion of about 6 to 10 ft^3/s by City of Ada for municipal water supply, a part of which is discharged as effluent to Sandy Creek, tributary to Canadian River. Records of zero flow do not include seepage of up to 0.10 ft^3/s. Satellite telemeter at station.
AVERAGE DISCHARGE.--Creek only: 34 years, 8.65 ft^3/s. Combined spring flow: 4 years, 23.2 ft^3/s.
EXTREMES FOR PERIOD OF RECORD.--Combined flow: maximum daily discharge, 43 ft^3/s, May 4, 5, 1990; minimum daily discharge, 13 ft^3/s, several days in 1990.
EXTREMES FOR CURRENT YEAR.--Combined flow: maximum daily discharge, 29 ft^3/s, Apr. 11-13, 17-20, 23-25, 27, May 15-18; minimum daily discharge, 17 ft^3/s, at times.

DISCHARGE, CUBIC FEET PER SECOND, CREEK FLOW, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	11	12	18	17	20	21	22	18	16	11	12
2	11	11	12	18	17	21	21	21	18	16	10	12
3	11	11	12	19	17	21	21	21	18	16	11	11
4	11	11	12	18	17	21	21	21	18	15	12	11
5	11	11	11	18	16	21	21	21	17	15	12	11
6	11	11	12	18	16	21	21	21	17	13	11	11
7	11	11	12	18	16	22	22	20	17	12	11	11
8	11	10	12	18	17	22	21	20	17	11	12	11
9	11	10	12	18	17	23	22	21	17	11	11	11
10	11	10	13	17	17	22	22	21	17	11	12	11
11	11	11	14	17	16	22	23	21	17	11	13	11
12	11	11	13	17	16	21	23	21	17	11	13	11
13	12	11	13	17	16	21	23	21	16	11	13	11
14	12	11	15	17	16	21	22	21	16	11	12	12
15	12	11	16	17	17	21	22	22	16	12	10	11
16	12	11	16	17	18	22	22	22	16	12	8.0	12
17	11	11	17	17	17	21	23	22	16	12	7.9	12
18	11	11	17	17	18	21	23	22	16	12	7.7	12
19	11	11	18	17	19	21	23	20	15	12	7.8	12
20	11	11	18	17	18	21	23	19	15	11	7.6	12
21	11	11	18	17	18	21	22	19	15	11	7.4	13
22	11	11	18	17	19	21	22	19	15	11	9.6	13
23	11	12	18	17	19	21	23	19	15	11	11	13
24	11	12	18	17	19	21	23	19	15	11	11	13
25	11	12	18	17	19	21	23	19	16	11	11	13
26	11	12	18	17	19	21	22	19	16	11	11	13
27	11	12	21	17	19	21	23	19	16	11	11	12
28	11	12	19	17	19	21	22	19	19	11	11	14
29	11	12	19	16	---	23	22	18	16	11	10	12
30	11	12	19	17	---	22	22	18	16	11	10	13
31	11	---	18	17	---	21	---	18	---	11	11	---
TOTAL	345	335	481	536	489	660	664	626	493	372	327.0	357
MEAN	11.1	11.2	15.5	17.3	17.5	21.3	22.1	20.2	16.4	12.0	10.5	11.9
MAX	12	12	21	19	19	23	23	22	19	16	13	14
MIN	11	10	11	16	16	20	21	18	15	11	7.4	11
AC-FT	684	664	954	1060	970	1310	1320	1240	978	738	649	708

CAL YR 1992	TOTAL 5831	MEAN 15.9	MAX 25	MIN 10	AC-FT 11570
WTR YR 1993	TOTAL 5685.0	MEAN 15.6	MAX 23	MIN 7.4	AC-FT 11280

07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK--Continued

DISCHARGE, CUBIC FEET PER SECOND, COMBINED SPRING FLOW, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	18	18	24	23	26	27	28	26	24	21	18
2	19	18	18	24	23	27	27	27	26	24	20	18
3	19	18	18	25	23	27	27	27	26	24	20	17
4	19	18	18	24	23	27	27	27	26	23	20	17
5	19	18	17	24	22	27	27	27	25	23	20	18
6	19	18	18	24	22	27	27	27	25	22	19	18
7	19	18	18	24	22	28	28	26	25	22	19	18
8	19	17	18	24	23	28	27	26	25	22	20	18
9	19	17	18	24	23	29	28	27	25	22	19	17
10	19	17	19	23	23	28	28	27	25	22	20	17
11	19	17	19	23	22	28	29	27	25	22	21	17
12	18	17	19	23	22	27	29	27	25	22	21	17
13	18	17	19	23	22	27	29	27	24	22	21	17
14	18	17	21	23	22	27	28	27	24	22	20	18
15	18	17	22	23	23	27	28	28	24	22	19	17
16	19	17	22	23	24	28	28	28	24	22	18	18
17	18	17	23	23	23	27	29	28	24	22	18	18
18	18	17	23	23	24	27	29	28	24	22	18	18
19	18	17	24	23	25	27	29	27	23	22	19	18
20	18	17	24	23	24	27	29	27	23	21	18	18
21	18	17	24	23	24	27	28	27	23	21	17	19
22	18	17	24	23	25	27	28	27	23	21	19	19
23	18	18	24	23	25	27	29	27	23	21	19	19
24	18	18	24	23	25	27	29	27	23	21	19	19
25	18	18	24	23	25	27	29	27	24	21	19	19
26	18	18	24	23	25	27	28	27	24	21	19	19
27	18	18	27	23	25	27	29	27	24	21	19	18
28	18	18	25	23	25	27	28	27	25	21	19	19
29	18	18	25	22	---	28	28	26	24	21	18	18
30	18	18	25	23	---	28	28	26	24	21	18	19
31	18	---	24	23	---	27	---	26	---	21	18	---
TOTAL	570	525	666	722	657	845	844	837	731	678	595	540
MEAN	18.4	17.5	21.5	23.3	23.5	27.3	28.1	27.0	24.4	21.9	19.2	18.0
MAX	19	18	27	25	25	29	29	28	26	24	21	19
MIN	18	17	17	22	22	26	27	26	23	21	17	17
AC-FT	1130	1040	1320	1430	1300	1680	1670	1660	1450	1340	1180	1070

CAL YR 1992	TOTAL 8345	MEAN 22.8	MAX 31	MIN 17	AC-FT 16550
WTR YR 1993	TOTAL 8210	MEAN 22.5	MAX 29	MIN 17	AC-FT 16280

07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1953, 1955-56, October 1989 to June 1993 (discontinued).
REMARKS.--Samples were collected quarterly and specific conductance, pH, water temperature, dissolved oxygen, and alkalinity were determined in the field.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	HARDNESS TOTAL (MG/L AS CACO3) (00900)
DEC												
01...	1145	1028	80020	14	612	7.3	13.5	17.0	740	6.1	65	310
FEB												
08...	1230	1028	80020	17	619	7.2	20.0	17.0	740	6.9	74	310
MAY												
05...	1200	1028	80020	21	615	7.3	23.0	17.5	740	6.0	65	320

DATE	HARDNESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CARBONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	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)
DEC												
01...	0	71	33	3.8	3	0.1	1.3	404	0	331	8.9	3.8
FEB												
08...	0	68	33	3.8	3	0.1	1.5	425	0	348	7.8	4.5
MAY												
05...	0	73	34	3.8	2	0.1	1.4	406	0	333	7.4	3.9

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)
DEC												
01...	0.10	10	331	335	0.45	12.8	0.920	--	--	<0.010	--	0.920
FEB												
08...	0.10	11	325	343	0.44	14.9	0.940	0.940	4.2	0.020	0.07	0.960
MAY												
05...	0.10	11	348	339	0.47	19.7	0.940	--	--	<0.010	--	0.940

07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)
DEC												
01...	<0.010	--	0.010	0.03	<1	48	<0.5	<1.0	<5	<3	<10	<3
FEB												
08...	0.010	0.01	0.010	0.03	<1	47	<0.5	1.0	<5	<3	<10	<3
MAY												
05...	0.020	0.03	0.020	0.06	<1	47	<0.5	<1.0	<5	<3	<10	<3

DATE	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
DEC											
01...	<10	<4	1	<0.1	<10	<10	<1	1.0	150	<6	5
FEB											
08...	<10	<4	<1	<0.1	<10	<10	<1	<1.0	140	<6	9
MAY											
05...	<10	<4	<1	<0.1	<10	<10	<1	<1.0	150	<6	<3

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK

LOCATION.--Lat 34°01'36", long 95°45'00", in SE 1/4 SE 1/4 sec.17, T.6 S., R.15 E., Choctaw County, Hydrologic Unit 11140103, at bridge on U.S. Highway 70, 3.5 mi west of Soper, 1.8 mi east of Unger and at mile 18.6.

DRAINAGE AREA.--2,273 mi^2.

PERIOD OF RECORD.--August 1982 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 392.72 ft above sea level. Prior to Sept. 19, 1985, gage 500 ft downstream at same datum.

REMARKS.--No estimated daily discharge. Records good. Some regulation by Atoka and McGee Creek Reservoirs. U.S. Army Corp of Engineers' telemeter at site.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

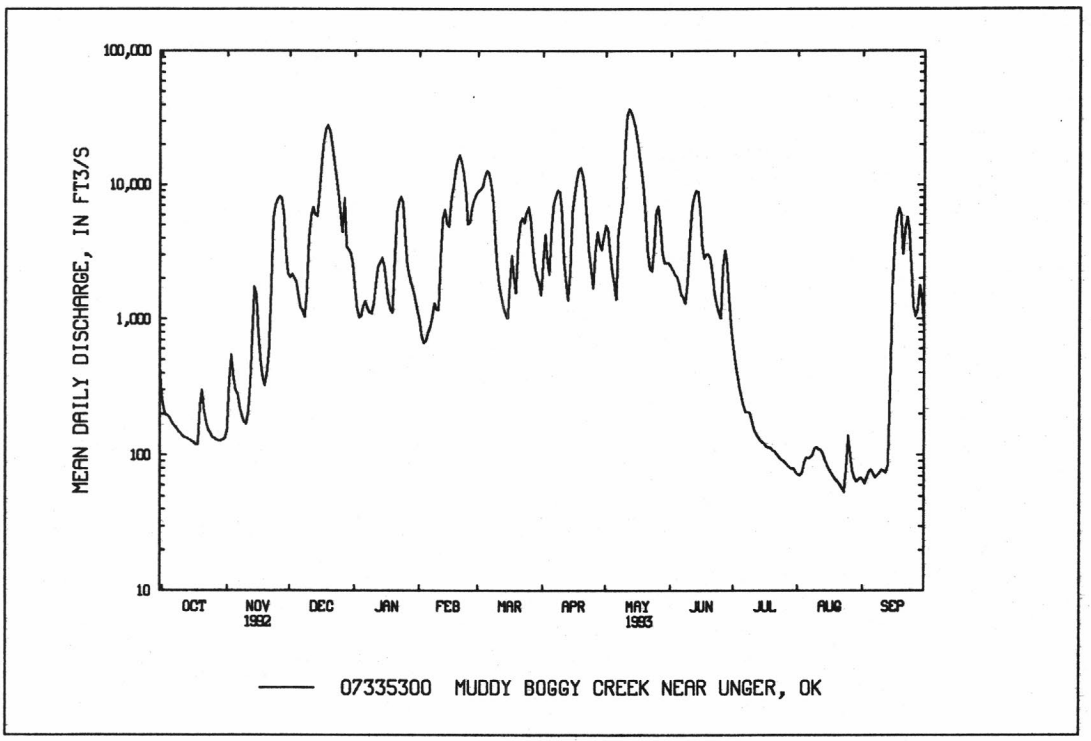
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	255	154	2040	1730	983	8940	2790	4950	2450	635	72	66
2	209	345	2150	1220	751	9160	4290	4710	2310	482	71	62
3	196	546	2020	1030	666	9710	2670	3140	2130	388	74	69
4	193	377	1890	1050	685	11400	2130	2270	2050	318	88	76
5	182	296	1520	1260	793	12700	4600	1830	1800	267	96	78
6	170	280	1220	1360	871	12300	7130	1390	1510	230	95	73
7	163	227	1160	1200	1030	10300	8190	4380	1450	206	96	69
8	156	196	1030	1120	1320	7690	9070	5970	1300	207	101	71
9	148	176	1590	1100	1180	4050	8820	7490	1890	204	112	74
10	143	169	3900	1310	1170	2500	6010	18600	3940	180	114	78
11	137	205	5870	1800	2960	1790	2690	33600	6710	155	110	76
12	135	327	6830	2430	5610	1480	1900	36800	8190	144	109	74
13	133	774	5980	2640	6520	1240	1380	35200	9040	136	102	84
14	130	1740	5860	2830	5170	1100	2210	31000	8810	129	92	317
15	127	1520	9010	2500	4890	1010	6320	26700	6640	125	84	1780
16	124	785	14200	1800	7810	1730	8400	21200	3620	121	78	3940
17	120	491	21300	1360	9640	2990	10900	15900	2850	116	74	5760
18	120	372	26000	1190	12700	2050	13000	12200	3040	113	70	6670
19	230	323	27800	1120	15300	1560	13400	8950	3020	113	66	6080
20	300	401	25600	2800	16600	3680	11600	5470	2820	108	64	3020
21	215	578	20000	6250	14800	5210	8720	3070	2190	106	61	4670
22	174	1610	15200	7540	11900	5610	5260	2350	1560	101	57	5730
23	153	5690	11700	8090	8750	5250	3160	2280	1290	97	54	4580
24	145	7120	8770	7380	5090	6230	2330	3440	1130	93	79	2320
25	135	7770	6230	4290	5270	6770	1690	6350	1010	91	140	1230
26	133	8200	4420	2610	6840	5410	3210	6870	2470	88	104	1060
27	129	7900	7940	2110	7750	3360	4450	4970	3270	84	77	1170
28	128	6050	3450	1820	8470	2450	3620	3100	2580	81	68	1790
29	128	3160	3290	1640	---	2070	3310	2590	1450	79	64	1440
30	130	2200	3090	1380	---	1860	4110	2600	888	80	66	894
31	134	---	2570	1150	---	1500	---	2600	---	75	68	---
TOTAL	4975	59982	253630	77110	165519	153100	167360	321970	93408	5352	2606	53401
MEAN	160	1999	8182	2487	5911	4939	5579	10390	3114	173	84.1	1780
MAX	300	8200	27800	8090	16600	12700	13400	36800	9040	635	140	6670
MIN	120	154	1030	1030	666	1010	1380	1390	888	75	54	62
AC-FT	9870	119000	503100	152900	328300	303700	332000	638600	185300	10620	5170	105900

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	783	1740	3020	2079	2932	3886	4014	5609	3132	733	347	803
MAX	3713	6596	9832	3568	5911	10970	14270	21720	7293	4536	2517	1922
(WY)	1985	1992	1992	1992	1993	1990	1990	1990	1991	1992	1992	1992
MIN	34.0	84.0	76.3	177	451	677	480	92.3	49.8	58.4	28.7	26.6
(WY)	1989	1989	1990	1984	1984	1986	1987	1988	1988	1984	1988	1988

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1983-93	
ANNUAL TOTAL	1253930		1358413			
ANNUAL MEAN	3426		3722		2419	
HIGHEST ANNUAL MEAN					4951	1990
LOWEST ANNUAL MEAN					520	1984
HIGHEST DAILY MEAN	27800	Dec 19	36800	May 12	76000	May 6 1990
LOWEST DAILY MEAN	120	Oct 17	54	Aug 23	1.8	Sep 8 1984
ANNUAL SEVEN-DAY MINIMUM	127	Oct 12	64	Aug 17	2.6	Sep 3 1984
INSTANTANEOUS PEAK FLOW			37000	May 12	76700	May 6 1990
INSTANTANEOUS PEAK STAGE			46.89	May 12	55.27	May 6 1990
ANNUAL RUNOFF (AC-FT)	2487000		2694000		1753000	
10 PERCENT EXCEEDS	7930		8970		7190	
50 PERCENT EXCEEDS	2090		1730		577	
90 PERCENT EXCEEDS	218		86		44	



RED RIVER BASIN

07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52'30", long 95°30'06", in NW 1/4 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.--January to September 1905 (gage heights and discharge measurements only), October 1905 to December 1911, July 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. July 1, 1936, to Mar. 24, 1940, nonrecording gage at present site and datum.

REMARKS.--Records fair. Flow regulated since October 1943 by Lake Texoma (station 07331500), 92.8 mi upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2030	2150	15200	20900	11800	37900	21700	24000	48900	10200	7100	3970
2	1830	2170	15400	15100	11600	48200	30400	19800	47900	11400	7150	3500
3	1740	2000	15400	13500	11500	41200	29700	16400	44300	9900	7200	3730
4	2040	1680	13900	13300	12000	38600	29100	16100	44100	9150	7410	3640
5	2040	1870	11900	13200	14900	40500	32300	27200	43600	8910	7370	3410
6	1660	2080	10700	13200	14900	42400	34700	32900	43100	8790	7350	3400
7	1490	2560	9430	13000	13200	43900	33700	36100	42700	8190	7150	3260
8	1970	1970	8080	12800	12100	42500	e32900	41100	42500	7390	7120	3230
9	2390	1700	6790	12900	10600	39100	31700	48500	43000	6800	6590	3480
10	2720	1060	8560	13000	10600	35800	28000	87600	44900	6400	6220	3150
11	2740	1040	12600	13300	14700	33800	19100	65300	46300	e6220	5900	2800
12	2270	1610	15400	13800	18700	31800	16900	46400	51400	e6050	5720	3040
13	1640	2040	16000	13900	18000	27100	15800	43500	44800	e5870	4770	4170
14	2190	2670	16900	14000	16500	22300	15600	48300	37100	e5700	4860	3920
15	2630	3920	29100	13900	16800	21300	24200	51600	32900	e5520	4900	4910
16	2440	3160	35100	13200	33800	25400	27800	57700	28200	e5460	4970	7010
17	5250	1540	36000	12600	33700	29800	33100	60800	25800	e5390	5070	8260
18	3560	1090	34600	12300	30200	23900	38100	59400	21400	e5330	4830	7970
19	2070	1730	33400	12100	31300	20200	39400	57200	20400	e5270	4680	8010
20	1440	1930	38300	13600	32700	28000	38100	56700	17900	5250	4600	6620
21	1430	2050	38000	20600	36400	32800	32700	55700	17000	5080	4580	5940
22	2150	2970	37400	22800	35400	25100	27200	53500	15900	5060	4580	7500
23	2200	5300	37700	20600	34100	22500	18700	53500	14100	5200	4230	8630
24	2180	8370	36700	20200	32100	28500	15500	54100	13600	6260	4790	7020
25	2170	11300	33200	17300	33700	26300	14400	56900	13300	6660	4900	5230
26	2680	15100	28700	14300	37500	20800	14600	58200	14000	6960	4430	4640
27	2670	19600	27900	13200	34700	19800	16200	56300	15000	7120	4790	4910
28	1910	19800	27700	12700	34500	16300	16100	54200	12900	6840	4580	5160
29	2080	17100	27800	12500	---	14900	16900	52800	11200	e7060	4180	5370
30	2080	15600	26600	12200	---	14500	24600	49400	10200	7190	4070	4910
31	2080	---	23200	11900	---	14700	---	49600	---	7140	4040	---
TOTAL	69770	157160	727660	451900	648000	909900	769200	1490800	908400	213760	170130	150790
MEAN	2251	5239	23470	14580	23140	29350	25640	48090	30280	6895	5488	5026
MAX	5250	19800	38300	22800	37500	48200	39400	87600	51400	11400	7410	8630
MIN	1430	1040	6790	11900	10600	14500	14400	16100	10200	5060	4040	2800
AC-FT	138400	311700	1443000	896300	1285000	1805000	1526000	2957000	1802000	424000	337500	299100

e Estimated

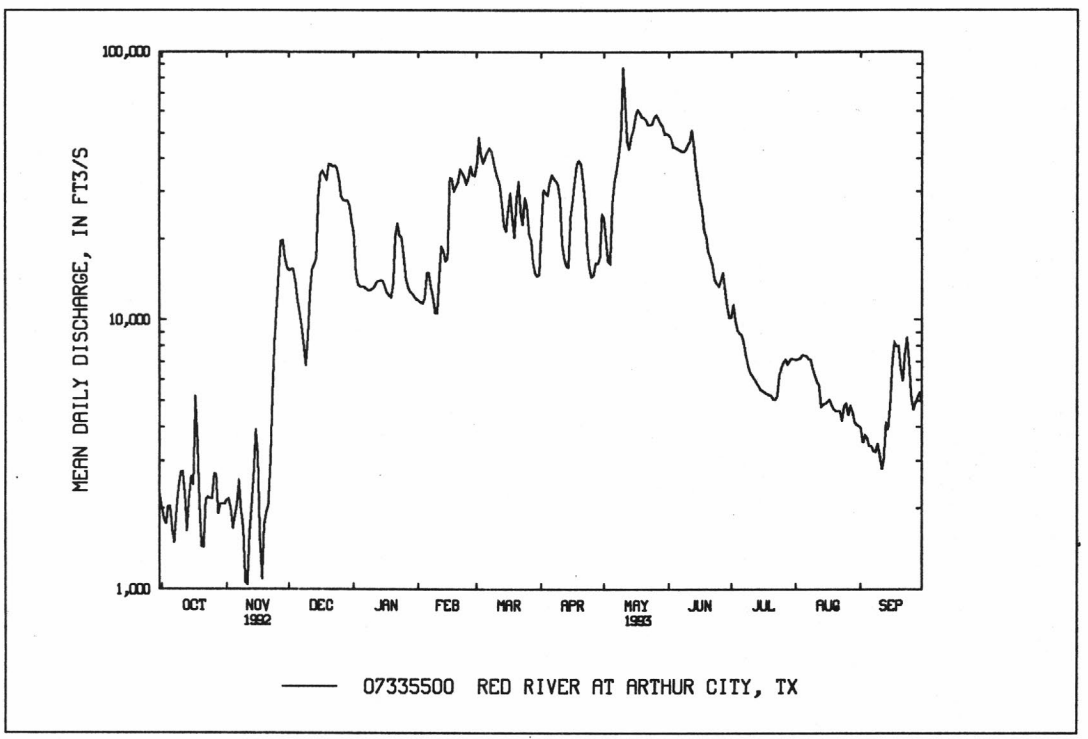
07335500 RED RIVER AT ARTHUR CITY, TX—Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1993, BY WATER YEAR (WY)

MEAN	7122	7091	6859	6507	8252	10060	11420	17010	18600	7777	4589	4687
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	1343	2837	2074	1586	1108	859
(WY)	1957	1957	1957	1964	1959	1967	1956	1980	1956	1956	1972	1988

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1945-93	
ANNUAL TOTAL	6721680		6667470			
ANNUAL MEAN	18370		18270		[a]9158	
HIGHEST ANNUAL MEAN					23290	1990
LOWEST ANNUAL MEAN					2754	1964
HIGHEST DAILY MEAN	62800	Jun 9	87600	May 10	269000	May 4 1990
LOWEST DAILY MEAN	1040	Nov 11	1040	Nov 11	134	[b]Dec 11 1956
ANNUAL SEVEN-DAY MINIMUM	1710	Nov 7	1710	Nov 7	134	Dec 11 1956
INSTANTANEOUS PEAK FLOW			95100	May 10	[c]275000	May 4 1990
INSTANTANEOUS PEAK STAGE			22.53	May 10	[d]34.21	May 4 1990
ANNUAL RUNOFF (AC-FT)	13330000		13220000		6635000	
10 PERCENT EXCEEDS	39700		42800		23900	
50 PERCENT EXCEEDS	15100		13300		4120	
90 PERCENT EXCEEDS	2190		2190		1310	

[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.



07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK

(Hydrologic benchmark station)

LOCATION.--Lat 34°38'18", long 94°36'45", in SW 1/4 SE 1/4 sec.18, T.2 N., R.26 E., Le Flore County, Hydrologic Unit 11140105, in Ouachita National Forest, on downstream side of right bank pier of bridge on State Highway 63, 0.2 mi upstream from Rattlesnake Creek, 1.1 mi upstream from Big Branch, 2.1 mi east of Big Cedar, and at mile 157.6.

DRAINAGE AREA.--40.1 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 886.97 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. U.S. Army Corps of Engineers' satellite telemeter at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Dec. 15	0345	5,690	12.31	Apr. 25	0700	4,190	11.31
Jan. 4	0815	17,700	17.14	May 9	2030	12,300	15.39

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28	17	57	94	35	181	40	276	39	9.3	.00	.04
2	23	17	48	85	31	227	35	193	33	7.4	.00	.01
3	19	19	42	131	30	188	32	245	29	6.0	.02	.15
4	16	18	39	3040	28	152	45	184	26	5.0	.03	.14
5	13	16	35	517	26	125	54	140	23	4.4	.06	.18
6	12	14	39	280	24	106	45	112	21	4.1	.74	.24
7	10	14	36	199	22	91	47	92	18	3.5	1.9	.22
8	9.5	13	34	152	20	78	50	75	18	3.1	1.5	.26
9	8.6	13	334	149	19	68	46	2210	19	3.2	2.0	.27
10	8.1	21	271	146	21	57	44	1170	30	3.1	1.6	.23
11	7.1	23	182	127	91	50	42	422	26	2.8	1.5	.19
12	6.7	99	141	123	77	45	39	275	28	2.5	1.1	.14
13	6.4	49	115	105	68	40	38	203	20	2.0	1.0	.12
14	7.7	34	1230	93	60	37	452	156	16	1.8	.88	2.7
15	7.8	28	2940	85	414	44	971	123	12	1.6	.65	7.6
16	7.5	23	595	75	423	397	398	99	11	1.3	.54	4.6
17	7.4	20	290	65	245	221	242	84	11	1.2	.47	3.5
18	7.8	17	194	61	178	159	177	89	9.7	.89	.39	2.7
19	7.4	90	151	64	146	225	148	84	9.6	.64	.30	2.5
20	8.5	909	120	501	123	425	165	63	8.4	.48	.27	3.2
21	8.6	442	98	284	107	274	116	53	7.9	.37	.23	2.7
22	8.7	1050	83	189	85	208	99	47	7.1	.29	.19	2.2
23	8.3	380	70	146	73	159	86	124	6.9	.25	.14	2.1
24	7.8	236	57	114	65	129	75	405	6.7	.19	.23	1.9
25	7.3	184	51	93	306	108	1310	208	34	.14	.22	3.0
26	7.6	140	44	79	238	90	422	139	46	.10	.22	3.7
27	9.8	116	39	67	178	77	236	103	26	.06	.20	3.3
28	8.9	97	36	58	144	67	164	84	20	.03	.19	3.0
29	9.0	82	45	55	---	59	631	69	16	.01	.16	2.7
30	11	67	80	45	---	52	500	58	12	.02	.12	2.5
31	11	---	98	38	---	46	---	47	---	.01	.08	---
TOTAL	319.5	4248	7594	7260	3277	4185	6749	7632	590.3	65.78	16.93	56.09
MEAN	10.3	142	245	234	117	135	225	246	19.7	2.12	.55	1.87
MAX	28	1050	2940	3040	423	425	1310	2210	46	9.3	2.0	7.6
MIN	6.4	13	34	38	19	37	32	47	6.7	.01	.00	.01
AC-FT	634	8430	15060	14400	6500	8300	13390	15140	1170	130	34	111
CFSM	.26	3.53	6.11	5.84	2.92	3.37	5.61	6.14	.49	.05	.01	.05
IN.	.30	3.94	7.04	6.73	3.04	3.88	6.26	7.08	.55	.06	.02	.05

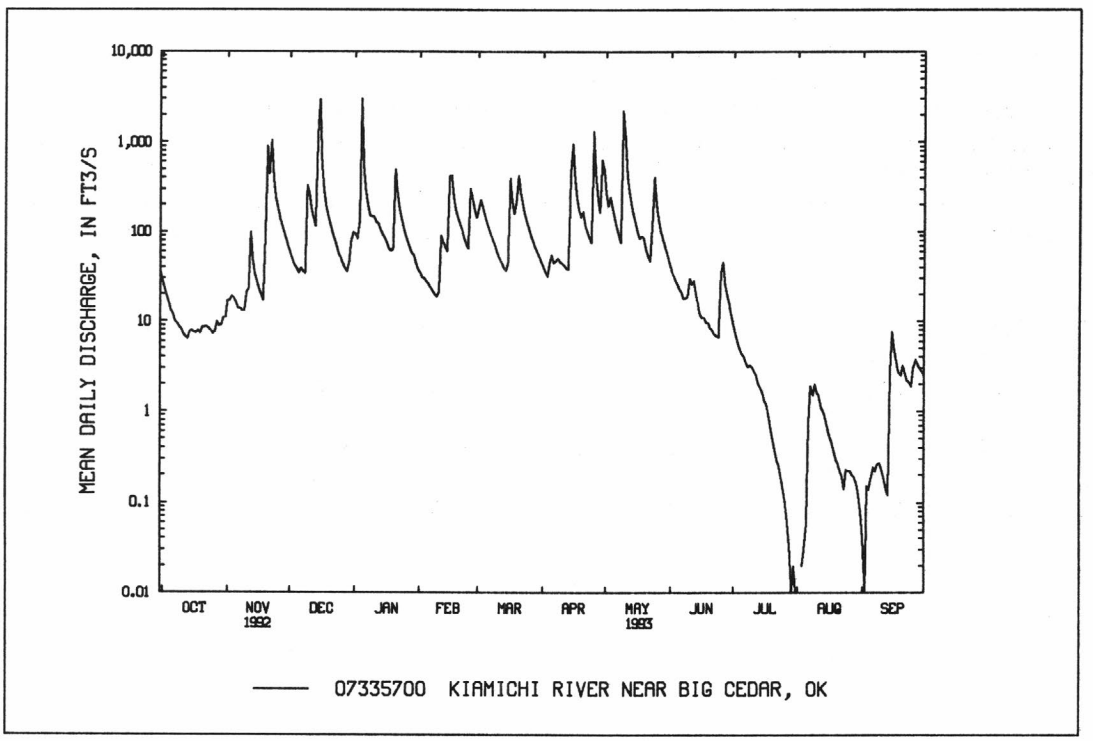
07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	57.9	85.5	129	89.4	116	154	135	144	60.0	22.5	8.26	22.7
MAX	514	361	445	234	340	362	362	614	178	128	51.0	283
(WY)	1985	1986	1972	1993	1989	1973	1991	1990	1973	1991	1988	1992
MIN	.000	.000	.92	2.50	6.12	28.8	34.5	6.97	.078	.000	.000	.000
(WY)	1984	1967	1967	1967	1967	1967	1972	1977	1988	1988	1972	1983

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1966-93	
ANNUAL TOTAL	38163.3		41993.60			
ANNUAL MEAN	104		115		85.2	
HIGHEST ANNUAL MEAN					152	1985
LOWEST ANNUAL MEAN					33.9	1978
HIGHEST DAILY MEAN	2940	Dec 15	3040	Jan 4	5960	May 13 1982
LOWEST DAILY MEAN	1.4	Aug 31	.00	Aug 1-2	[a].00	Jul 15 1966
ANNUAL SEVEN-DAY MINIMUM	1.9	Aug 25	.01	Jul 28	.00	Oct 16 1966
INSTANTANEOUS PEAK FLOW			17700	Jan 4	[b]27400	May 19 1990
INSTANTANEOUS PEAK STAGE			17.14	Jan 4	19.60	May 19 1990
ANNUAL RUNOFF (AC-FT)	75700		83290		61710	
ANNUAL RUNOFF (CFSM)	2.60		2.87		2.12	
ANNUAL RUNOFF (INCHES)	35.40		38.96		28.86	
10 PERCENT EXCEEDS	178		243		175	
50 PERCENT EXCEEDS	52		36		25	
90 PERCENT EXCEEDS	6.4		.26		.16	

[a]No flow at times in most years.
[b]From rating curve extended above 9,000 ft^3/s.



07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued
(Hydrologic benchmark station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--December 1965 to current year.

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

MISCELLANEOUS WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	TEMPERATURE WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	GAGE HEIGHT (FEET) (00065)	SPECIFIC CONDUCTANCE (US/CM) (00095)	OXYGEN, DISSOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)
AUG											
09...	1802	2.00	28.0	746	1028	1028	1.9	2.95	43	6.0	6.7
09...	1804	6.00	28.0	746	1028	1028	1.9	2.95	42	6.1	6.8
09...	1806	8.00	28.0	746	1028	1028	1.9	2.95	43	6.1	6.8
09...	1808	12.0	28.0	746	1028	1028	1.9	2.95	43	6.2	6.8
09...	1810	16.0	28.0	746	1028	1028	1.9	2.95	43	6.2	6.8
09...	1812	20.0	28.0	746	1028	1028	1.9	2.95	42	6.2	6.8
09...	1814	24.0	28.0	746	1028	1028	1.9	2.95	43	6.2	6.8
09...	1816	28.0	28.0	746	1028	1028	1.9	2.95	43	6.2	6.8
09...	1818	32.0	28.0	746	1028	1028	1.9	2.95	43	6.2	6.8
09...	1820	36.0	28.0	746	1028	1028	1.9	2.95	43	6.2	6.8
09...	1822	40.0	28.0	746	1028	1028	1.9	2.95	43	6.2	6.8

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	TIME	AGENCY COLLECTING SAMPLE (CODE NUMBER) (00027)	AGENCY ANALYZING SAMPLE (CODE NUMBER) (00028)	DISCHARGE, INST. CUBIC FEET PER SECOND (00061)	SPECIFIC CONDUCTANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STANDARD UNITS) (00400)	TEMPERATURE AIR (DEG C) (00020)	TEMPERATURE WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)
OCT												
06...	0930	1028	80020	12	25	6.9	16.0	16.0	6.5	746	8.6	89
FEB												
09...	0930	1028	80020	19	29	6.8	11.0	7.0	7.6	741	10.2	86
JUN												
08...	1530	1028	80020	19	25	6.3	26.0	23.0	6.0	740	8.0	97
AUG												
09...	1830	1028	80020	1.9	43	6.5	26.5	28.0	2.6	746	6.2	81

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	COLIFORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	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)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	BICARBONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CARBONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)
OCT												
06...	41	130	6	0	1.0	0.81	1.9	38	0.3	0.70	8	0
FEB												
09...	K4	20	5	0	0.89	0.72	1.8	40	0.3	0.60	7	0
JUN												
08...	110	360	7	0	1.3	0.85	1.8	34	0.3	0.80	8	0
AUG												
09...	47	91	13	0	2.6	1.5	2.6	28	0.3	1.4	18	0

DATE	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)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)
OCT												
06...	7	2.1	1.4	<0.10	8.1	21	20	0.03	0.68	--	--	--
FEB												
09...	6	2.4	1.6	<0.10	7.1	21	19	0.03	1.09	0.033	0.033	0.15
JUN												
08...	7	2.0	1.5	<0.10	7.8	23	21	0.03	1.16	0.200	--	--
AUG												
09...	15	1.9	1.8	<0.10	3.9	31	25	0.04	0.16	--	--	--

DATE	NITROGEN, NITRITE TOTAL (MG/L AS N) (00615)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA TOTAL (MG/L AS NH4) (71845)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN, TOTAL (MG/L AS N) (00600)
OCT												
06...	<0.010	<0.010	--	<0.050	<0.050	0.020	0.010	0.03	0.01	--	<0.20	--
FEB												
09...	--	0.030	0.10	--	0.063	--	0.010	--	0.01	--	<0.20	--
JUN												
08...	--	<0.010	--	--	0.200	--	0.030	--	0.04	--	<0.20	--
AUG												
09...	--	<0.010	--	--	<0.050	--	0.040	--	0.05	0.56	0.60	0.60

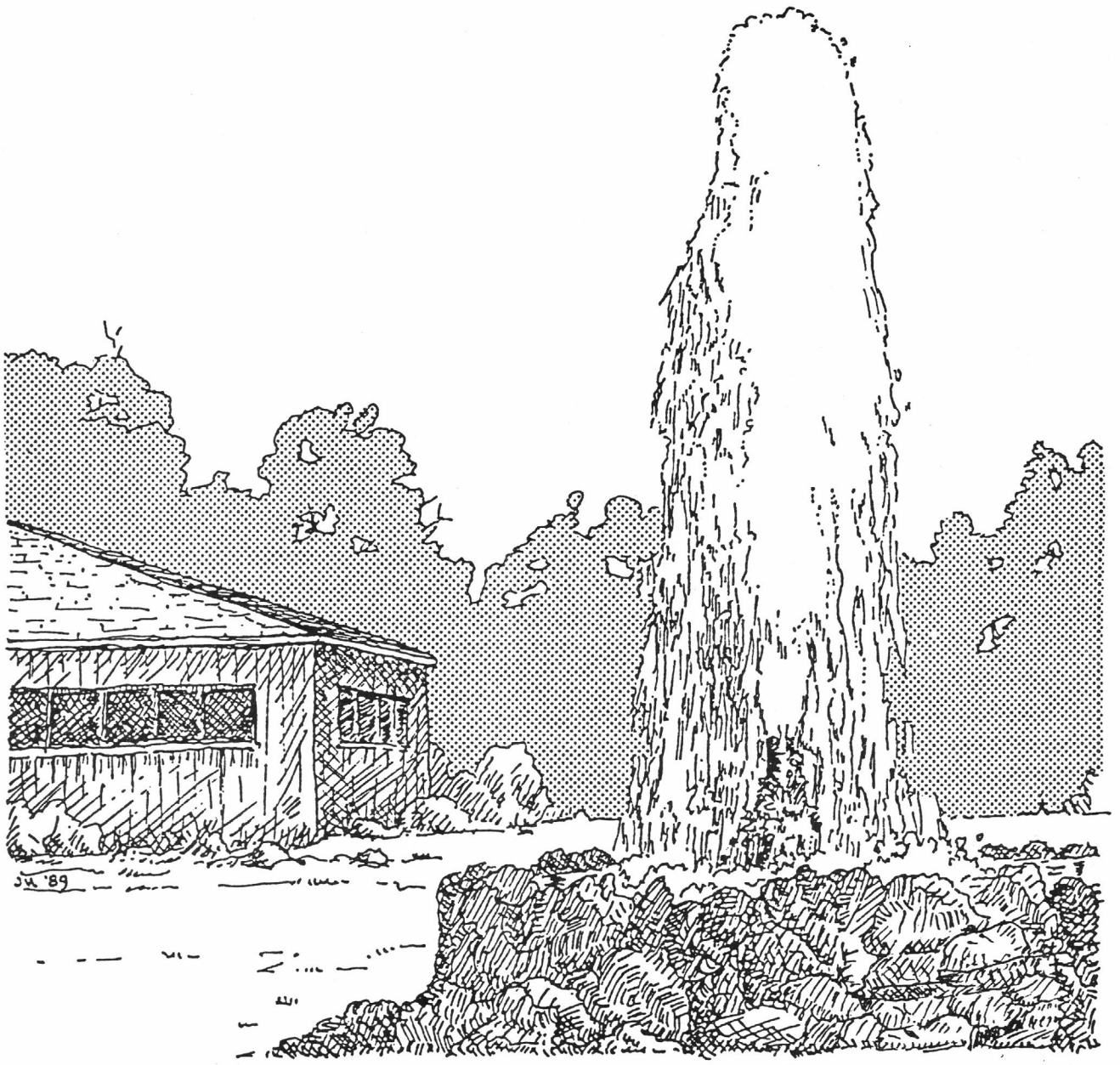
07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)
OCT												
06...	--	0.020	<0.010	<0.010	--	20	9	<3	76	<4	6	<10
FEB												
09...	0.010	<0.010	--	<0.010	--	30	9	<3	34	<4	4	<10
JUN												
08...	0.030	0.040	--	<0.010	--	30	10	<3	110	<4	9	<10
AUG												
09...	0.030	0.040	--	0.010	0.03	10	18	<3	260	<4	18	<10

DATE	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	ALPHA, COUNT, 2 SIGMA WAT DIS AS NAT U (UG/L) (75986)	ALPHA COUNT, 2 SIGMA WAT DIS AS TH-230 (PCI/L) (75987)	ALPHA, 2 SIGMA SED SUS TOT DRY AS TH-230 (PCI/L) (76004)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	BETA, 2 SIGMA WATER, DISS, AS CS-137 (PCI/L) (75989)
OCT												
06...	<1	<1	<1.0	10	<6	--	--	--	--	--	--	--
FEB												
09...	<1	<1	<1.0	9	<6	<0.6	<0.6	0.20	0.13	0.25	0.8	0.45
JUN												
08...	1	<1	<1.0	11	<6	<0.6	<0.6	0.14	0.09	0.31	0.9	0.48
AUG												
09...	2	<1	<1.0	26	<6	--	--	--	--	--	--	--

DATE	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	BETA, 2 SIGMA WATER, DISS, AS SR90/Y90 (PCI/L (75988)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	BETA, 2 SIGMA SED, SUSP, TOT DRY SR90Y90 (PCI/L) (76005)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	RA-226 2 SIGMA WATER, DISS, (PCI/L) (76001)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	URANIUM NATURAL 2 SIGMA WATER, DISS, (UG/L) (75990)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT												
06...	--	--	--	--	--	--	--	--	--	12	0.39	86
FEB												
09...	<0.6	0.8	0.42	<0.6	0.51	0.04	0.020	<0.01	<1.0	17	0.89	53
JUN												
08...	<0.6	0.8	0.44	<0.6	0.46	0.02	0.010	<0.01	<1.0	8	0.40	54
AUG												
09...	--	--	--	--	--	--	--	--	--	18	0.09	79



Vendome Well, Chickasaw National Recreation Area, in the 1930's

07335775 SARDIS LAKE NEAR CLAYTON, OK

LOCATION.--Lat 34°37'45", long 95°21'03", in NE 1/4 SW 1/4 sec.19. T.2 N, R.19 E., Pushmataha County, Hydrologic Unit 11140105, on the northeast end of parking area on top of dam, 2.5 mi north of Clayton, and at mile 2.8.

DRAINAGE AREA.--275 mi^2.

PERIOD OF RECORD.--December 1982 to September 1993 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by earth dam. The controlled outlet consists of two sluice gates and the uncontrolled outlet is a concrete spillway. Flow was diverted through control structure May 4, 1981; regulated storage began Dec. 27, 1982; conservation pool first filled Oct. 20, 1984. Capacity, 735,800 acre-ft at elevation 624.0 ft, maximum pool; 468,100 acre-ft, at elevation 611.0 ft, spillway crest; 396,900 acre-ft at elevation 607.0 ft, top of flood pool; 274,300 acre-ft, at elevation 599.0 ft, top of conservation pool. Figures given herein represent total contents. Reservoir is designed for flood control, water supply, water-quality control and conservation. Capacity table used since Oct. 1, 1984. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 489,300 acre-ft, May 3, 4, 1990, elevation, 612.14 ft; minimum since conservation pool was first filled, 219,200 acre-ft, Oct. 9-12, 1985, elevation, 594.65 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 343,300 acre-ft, Dec. 17-18, elevation, 603.71 ft; minimum contents, 260,000 acre-ft, Sept. 13, elevation, 597.93 ft.

Capacity table (elevation, in feet, and contents, in acre-ft):

595	223,400	601	302,500
597	248,000	603	332,300
599	274,300	605	363,800

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

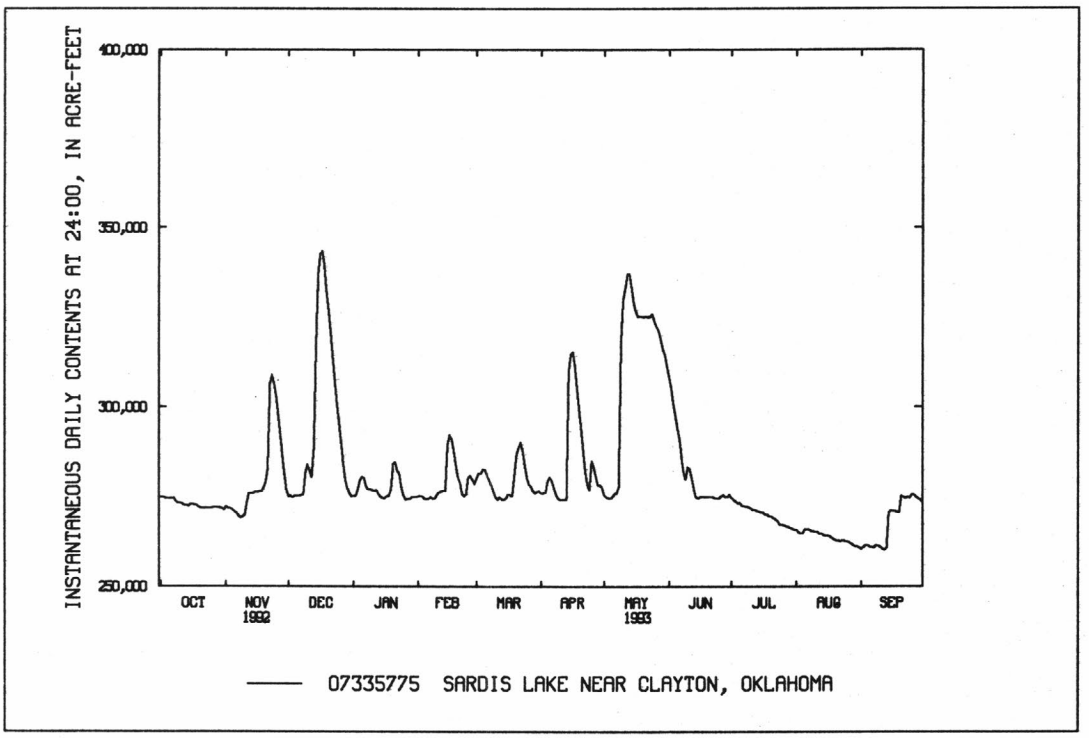
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	275000	272400	275200	275400	275200	280200	276000	275600	308400	274700	265900	260600
2	274900	271900	275300	275400	275300	281600	276100	274900	305400	274100	265200	261100
3	274700	271900	274900	277100	275200	281600	276300	274700	301100	273700	264900	261700
4	274700	271500	275400	279400	274500	282700	279400	274600	297600	273200	264900	261600
5	274700	271000	275300	280600	274500	282600	280400	275000	294000	273300	266100	261200
6	274600	270600	275300	280200	274500	281100	279600	276000	290800	272600	266100	261100
7	274700	269900	275600	277900	275000	279600	277600	276100	285700	272400	266100	260900
8	273800	269300	275700	277100	274500	278200	275800	277800	281900	272300	265600	261600
9	273300	269600	281800	277100	274600	276700	274600	318000	279800	272200	265600	261500
10	273300	270000	283900	276900	275700	275000	274200	330000	283200	271900	265300	261100
11	273100	273400	282300	276700	276400	274300	274200	333100	282700	271500	265300	260600
12	272700	276100	280400	276900	276500	274900	274200	337000	280200	271400	264800	260300
13	272700	276100	288200	275800	276700	274300	274300	337000	277100	271100	264800	260800
14	272400	276100	315800	275000	276700	274300	309800	333700	274900	271000	264400	270700
15	273000	276400	337000	274700	289200	274600	314600	329000	274600	270700	264300	271200
16	273000	276400	342600	274700	292000	275800	315200	326700	274900	270700	264300	271100
17	272800	276500	343300	275200	290900	275600	311600	325200	274900	270200	264000	271000
18	272700	276500	339600	275400	288100	275300	305400	325200	274900	270200	263600	270800
19	272200	277500	332300	277200	284100	280800	299500	325200	275000	269700	263200	270700
20	271900	279300	327200	284100	280800	286500	293800	325000	275000	269600	262800	275300
21	271900	283200	321000	284600	279100	288600	287500	325200	274900	269200	262900	274900
22	271900	306600	314400	282200	276000	289900	281900	325000	274900	268800	262700	274600
23	271900	308700	307900	281500	275200	287800	278300	325200	274700	268400	262900	274900
24	271900	306600	301100	277600	275800	284000	277100	325800	274600	267400	262800	274600
25	271900	303000	295900	275400	280500	280400	285000	323800	274600	267400	262700	275700
26	272200	297300	290100	274300	280900	278500	283300	322300	275200	267200	262500	275700
27	272200	291900	284700	274500	279800	277800	280700	321100	275600	266900	262100	274900
28	272200	286500	279700	274500	278700	276700	278200	318700	275000	266800	261700	274500
29	272000	281200	277500	274900	---	276100	278300	315900	275000	266400	261300	274200
30	271900	276700	276200	274900	---	276500	277600	314300	275600	266300	261300	273500
31	271400	---	275200	274900	---	276700	---	311300	---	266000	260900	---

07335775 SARDIS LAKE NEAR CLAYTON, OK--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MAX	275000	308700	343300	284600	292000	289900	315200	337000	308400	274700	266100	275700
MIN	271400	269300	274900	274300	274500	274300	274200	274600	274600	266000	260900	260300
(‡)	598.78	599.17	599.06	599.04	599.32	599.17	599.24	601.60	599.09	598.38	598.00	598.94
(‡‡)	-3,600	+5,300	-1,500	-300	+3,800	-2,000	+900	+33,700	-35,700	-9,600	-5,100	+12,600

CAL YR 1992 MAX 343300 MIN 269300 (‡‡) -12,300
WTR YR 1993 MAX 343300 MIN 260300 (‡‡) -11,500

(+) ELEVATION, IN FEET, AT END OF MONTH
(++) CHANGE IN CONTENTS, IN ACRE-FEET



07335790 KIAMICHI RIVER NEAR CLAYTON, OK

LOCATION.--Lat 34°34'32", long 95°20'26", in NE 1/4 SE 1/4 sec.7, T.1 N., R.19 E., Pushmataha County, Hydrologic Unit 11140105, on right bank near downstream bridge abutment on U.S. Highway 271, approximately 1 mi southeast of Clayton, and at mile 101.6.

DRAINAGE AREA.--708 mi^2.

PERIOD OF RECORD.--November 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 520.00 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Some regulation since December 1982 by Sardis Lake (station 07335775), on Jackfork Creek 4.5 mi upstream. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

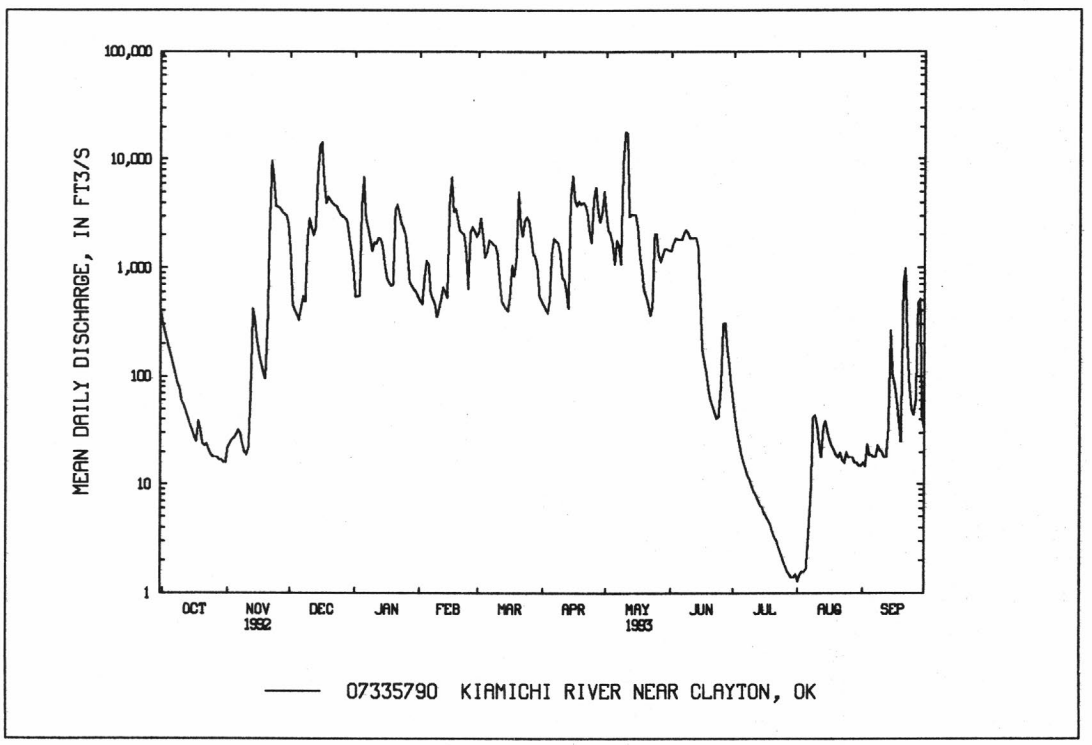
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	309	22	1390	546	497	2110	457	3210	1430	58	1.3	16
2	256	24	451	544	467	2900	417	2230	1670	40	1.5	15
3	214	26	406	553	796	1980	384	2040	1870	30	1.6	24
4	179	27	371	3730	1150	1270	509	1690	1840	24	1.6	19
5	151	29	335	6960	1080	1400	1360	1090	1820	19	1.7	19
6	128	32	428	2850	591	1790	1860	1760	1820	16	3.4	18
7	107	30	538	2360	519	1730	1750	1620	2070	14	7.4	18
8	88	24	481	1850	465	1640	1710	1080	2240	12	42	23
9	78	20	1780	1420	352	1590	1380	9320	2070	11	44	21
10	60	19	2880	1710	418	1330	810	18000	1880	9.7	35	20
11	54	22	2360	1670	514	774	780	17300	1880	8.6	24	18
12	48	67	2020	1880	655	489	608	2990	1890	7.9	18	18
13	42	422	2350	1860	598	453	422	3110	1870	7.1	34	33
14	36	342	7520	1560	529	418	4550	3080	1530	6.4	39	265
15	32	220	13400	1060	3900	400	7080	3060	522	6.1	31	103
16	28	163	14200	808	6890	583	4270	2320	177	5.4	26	83
17	25	132	6290	733	3320	1070	3770	1310	139	5.0	23	60
18	39	109	3960	686	3490	836	4100	944	110	4.6	21	38
19	32	95	4530	693	2790	1240	3860	620	78	4.2	19	25
20	24	288	4220	3450	2190	5040	4020	553	62	3.6	18	692
21	23	2160	3970	3830	2100	2480	3810	458	54	3.2	20	997
22	24	9700	3810	3170	2020	1960	3140	365	47	3.0	17	186
23	21	6750	3710	2610	1380	2710	2160	441	41	2.6	16	82
24	19	3720	3350	2340	639	2940	1700	2030	43	2.3	20	49
25	18	3670	3070	2020	2100	2700	4330	2040	79	2.0	18	45
26	18	3540	2990	1350	2380	1930	5580	1310	306	1.8	18	59
27	18	3300	2880	737	2190	1330	3410	1150	310	1.6	18	475
28	17	3140	2690	680	1960	1270	2620	1330	186	1.5	16	510
29	17	3040	1950	633	---	1020	3250	1500	129	1.4	16	41
30	16	2550	1450	600	---	545	5110	1480	83	1.4	15	33
31	16	---	1000	543	---	499	---	1450	---	1.5	15	---
TOTAL	2137	43683	100780	55436	45980	48427	79207	90881	28246	314.9	581.5	4005
MEAN	68.9	1456	3251	1788	1642	1562	2640	2932	942	10.2	18.8	133
MAX	309	9700	14200	6960	6890	5040	7080	18000	2240	58	44	997
MIN	16	19	335	543	352	400	384	365	41	1.4	1.3	15
AC-FT	4240	86650	199900	110000	91200	96050	157100	180300	56030	625	1150	7940

07335790 KIAMICHI RIVER NEAR CLAYTON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	827	1381	1569	1120	1676	1606	1635	2270	1064	244	265	358
MAX	4628	4837	3376	1976	4196	3184	2935	7658	2288	984	1268	2735
(WY)	1985	1985	1988	1991	1990	1990	1991	1990	1986	1992	1992	1992
MIN	3.12	6.17	24.5	88.3	231	595	226	53.7	7.33	10.2	5.42	2.35
(WY)	1984	1990	1990	1986	1991	1986	1982	1988	1988	1993	1984	1983

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1982-93	
ANNUAL TOTAL	532783		499678.4			
ANNUAL MEAN	1456		1369		1165	
HIGHEST ANNUAL MEAN					1967	1990
LOWEST ANNUAL MEAN					547	1984
HIGHEST DAILY MEAN	14200	Dec 16	18000	May 10	36800	May 4 1990
LOWEST DAILY MEAN	16	Oct 30	1.3	Aug 1	.00	Oct 3-18 1983
ANNUAL SEVEN-DAY MINIMUM	17	Oct 25	1.5	Jul 27	.00	Oct 3 1983
INSTANTANEOUS PEAK FLOW			19300	May 9	40200	May 4 1990
INSTANTANEOUS PEAK STAGE			17.66	May 9	22.23	May 4 1990
ANNUAL RUNOFF (AC-FT)	1057000		991100		843700	
10 PERCENT EXCEEDS	3350		3470		3270	
50 PERCENT EXCEEDS	802		522		276	
90 PERCENT EXCEEDS	44		16		5.2	



07336200 KIAMICHI RIVER NEAR ANTLERS, OK

LOCATION.--Lat 34°14'55", long 95°36'18", in SW 1/4 sec.35, T.3 S., R.16 E., Pushmataha County, Hydrologic Unit 11140105, on right bank, 50 ft downstream from bridge on U.S. Highway 271 and State Highway 2, 2.0 mi northeast of Antlers, 7.7 mi downstream from Tenmile Creek, 5.4 mi upstream from Cedar Creek and at mile 59.6.

DRAINAGE AREA.--1,138 mi^2.

PERIOD OF RECORD.--October 1972 to current year.

GAGE.--Water-stage recorder. Datum of gage is 419.82 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. Some regulation since December 1982 by Sardis Lake (station 07335775), located on Jackfork Creek, 42.0 miles upstream from station. Small diversion for municipal water supply for city of Antlers upstream from station. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	369	38	2500	960	517	3900	352	5320	1480	165	8.8	16
2	304	74	1190	583	462	7160	301	3150	1430	130	10	16
3	257	52	493	565	421	4560	264	2270	1980	106	9.9	23
4	223	43	421	2150	774	2570	462	2210	2040	88	9.1	24
5	195	39	373	7710	1180	1730	1230	1390	2010	74	8.0	24
6	169	38	359	6130	957	1990	1930	891	1980	62	9.7	25
7	145	37	463	3470	561	2160	1820	3310	1980	53	10	25
8	126	37	583	2900	474	2000	1650	1560	2610	47	10	25
9	112	37	2690	2010	405	1870	1600	17400	2860	41	10	25
10	100	38	5710	2460	382	1740	941	41400	5070	36	9.8	25
11	88	46	4130	2450	680	1190	621	27500	6020	31	8.7	26
12	78	241	3080	2450	722	702	554	14800	5340	28	25	26
13	71	689	3990	2670	729	455	393	5600	3130	25	38	47
14	67	461	16900	2310	619	405	6420	4990	2600	22	33	531
15	62	425	25700	1710	4500	401	16000	4520	1570	20	26	1780
16	59	285	23900	1130	12900	1650	7650	4120	872	18	24	458
17	56	218	14900	900	6640	1550	5020	2240	727	16	30	187
18	51	177	5520	811	4940	1400	4980	1590	551	15	32	110
19	46	153	5710	784	4430	1630	4750	1030	330	13	31	71
20	43	228	5460	4830	3180	8910	4470	790	250	12	27	139
21	49	1330	5130	7160	2770	5790	4560	689	203	12	25	516
22	50	11200	4810	5100	2540	3000	4010	551	176	10	22	780
23	44	14700	4660	3880	2320	3480	2830	430	152	9.7	20	216
24	42	6870	4470	3220	1140	3820	1750	944	141	8.7	27	98
25	41	5750	3830	2850	3780	3460	5160	3160	160	7.5	28	64
26	38	5180	3680	2170	5060	2760	8050	2000	260	6.6	24	84
27	36	4540	3560	1230	3530	1530	5310	1330	403	6.1	22	62
28	33	4200	3500	788	2890	1170	3410	1120	406	5.1	22	131
29	33	3910	2820	697	---	1070	4280	1560	276	4.9	21	456
30	29	3720	2020	624	---	754	6380	1620	210	6.4	19	118
31	26	---	1390	581	---	420	---	1540	---	8.4	17	---
TOTAL	3042	64756	163942	77283	69503	75227	107148	161025	47217	1087.4	617.0	6128
MEAN	98.1	2159	5288	2493	2482	2427	3572	5194	1574	35.1	19.9	204
MAX	369	14700	25700	7710	12900	8910	16000	41400	6020	165	38	1780
MIN	26	37	359	565	382	401	264	430	141	4.9	8.0	16
AC-FT	6030	128400	325200	153300	137900	149200	212500	319400	93650	2160	1220	12150
CFSM	.09	1.90	4.65	2.19	2.18	2.13	3.14	4.56	1.38	.03	.02	.18
IN.	.10	2.12	5.36	2.53	2.27	2.46	3.50	5.26	1.54	.04	.02	.20

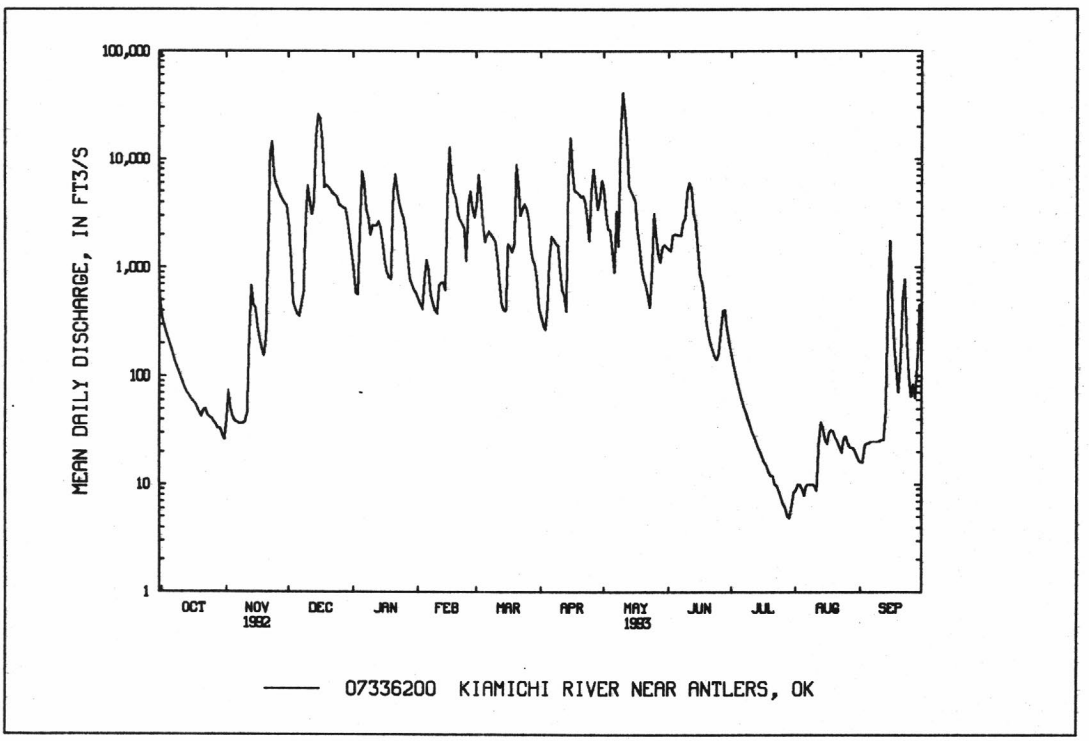
07336200 KIAMICHI RIVER NEAR ANTLERS, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1270	2192	2436	1743	2581	2916	3097	3625	1711	398	399	540
MAX	7763	6872	5288	2891	6316	5601	6400	12700	3784	1704	2017	2960
(WY)	1985	1985	1993	1991	1990	1990	1990	1990	1992	1992	1992	1992
MIN	10.8	5.19	7.84	154	427	1061	456	77.9	21.5	35.1	9.26	11.0
(WY)	1990	1990	1990	1986	1991	1986	1987	1988	1988	1993	1984	1985

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1984-93	
ANNUAL TOTAL	847672		776975.4			
ANNUAL MEAN	2316		2129		[a]1904	
HIGHEST ANNUAL MEAN					3184	1990
LOWEST ANNUAL MEAN					786	1984
HIGHEST DAILY MEAN	25700	Dec 15	41400	May 10	57000	May 4 1990
LOWEST DAILY MEAN	26	Oct 31	4.9	Jul 29	[b].50	Sep 8 1984
ANNUAL SEVEN-DAY MINIMUM	33	Oct 26	6.4	Jul 25	1.5	Sep 3 1984
INSTANTANEOUS PEAK FLOW			43400	May 10	62300	May 3 1990
INSTANTANEOUS PEAK STAGE			35.04	May 10	42.65	May 3 1990
ANNUAL RUNOFF (AC-FT)	1681000		1541000		1380000	
ANNUAL RUNOFF (CFSM)	2.04		1.87		1.67	
ANNUAL RUNOFF (INCHES)	27.71		25.40		22.74	
10 PERCENT EXCEEDS	5400		5140		5080	
50 PERCENT EXCEEDS	1390		621		463	
90 PERCENT EXCEEDS	70		22		11	

[a]Prior to regulation by Sardis Lake, 1973-82, 1,484 ft^3/s.
[b]Prior to regulation by Sardis Lake, no flow many years.



07336600 HUGO LAKE NEAR HUGO, OK

LOCATION.--Lat 34°00'42", long 95°22'49", in NE 1/4 NE 1/4 sec.25, T.6 S., R.18 E., Choctaw County, Hydrologic Unit 11140105, on upstream face of Hugo Dam on Kiamichi River, 700 ft to left of spillway, 7.0 mi east of Hugo, and at mile 17.6.

DRAINAGE AREA.--1,709 mi^2.

PERIOD OF RECORD.--January 1974 to September 1993 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by rolled earth dam. The outlet works consists of a gate-controlled concrete gravity ogee-type weir with six 40- by 50-foot gates. Regulated storage began Jan. 18, 1974; conservation pool was first filled Mar. 12, 1974. Total capacity, 1,561,500 acre-ft, at elevation 452.5 ft, top of dam, 966,700 acre-ft, at elevation 437.5 ft, top of flood control pool. Dead storage 21,080 acre-ft, at elevation 387.5 ft, crest of gated spillway. Figures given herein represent total contents. Reservoir is used for flood control, water supply, recreation and conservation. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,056,000 acre-ft, May 6, 1990, elevation, 440.05 ft; minimum since conservation pool was first filled, 88,860 acre-ft, Nov. 15, 1978, elevation, 398.47 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 552,500 acre-ft, May 20, 21, elevation, 424.08 ft; minimum, 137,500 acre-ft, Sept. 13, elevation, 402.93 ft.

Capacity table (elevation, in feet, and contents, in acre-ft):

401	115,000	415	334,000
407	192,700	420	447,100
410	239,900	425	577,800

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

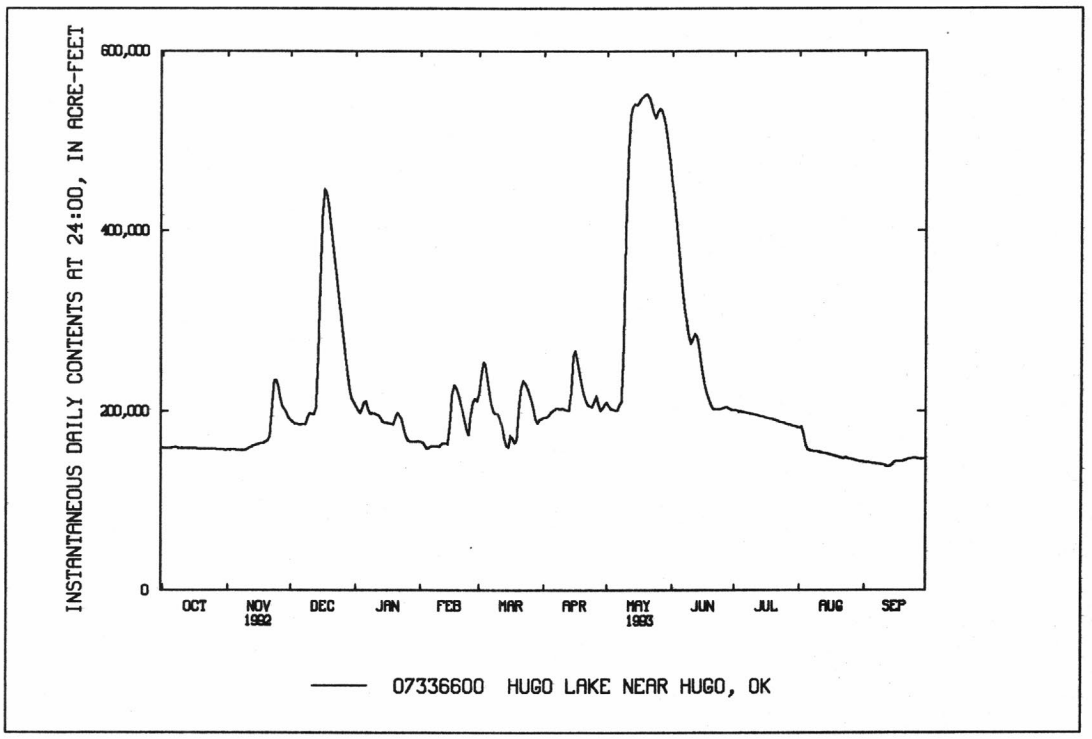
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	158400	157200	189700	205200	165500	218400	192600	209200	452900	201100	181600	143000
2	158300	156600	188000	201200	165100	239000	192600	205100	435400	200800	182600	142500
3	158700	157300	186000	197900	161500	252900	193700	201800	412300	199400	174400	142700
4	158800	157100	186200	202400	158000	251000	196900	201500	384900	199600	161900	142100
5	158900	156600	185000	209700	158900	233400	199600	200300	358100	199000	157200	141600
6	159200	156200	185200	210200	160400	217900	201100	200500	333000	198400	156100	141300
7	159900	156200	185300	201100	160600	205100	202900	206300	312500	197900	155700	140500
8	158800	156000	185200	196900	160800	198200	202300	209900	298700	197500	155100	140800
9	158800	156000	192700	197600	160400	196700	202100	272400	282900	196900	154900	140300
10	158900	157200	197900	197300	160100	196700	202600	403700	274500	196600	154300	139800
11	158800	158900	196900	195800	163000	189900	201500	482600	279400	196000	153900	139000
12	158800	159900	196100	195500	163400	183800	200600	526800	284800	195400	153200	138000
13	158700	161100	203000	191400	163800	170300	200300	537100	282100	194600	152800	138400
14	158700	162200	257400	187700	163200	160900	219700	540500	270400	194000	152200	139300
15	158800	162800	345900	186800	183700	159300	259500	539200	252900	193600	151600	142600
16	158400	163500	414600	186900	217900	172100	266400	541900	238300	192800	150900	143400
17	158100	164200	445200	186200	228100	169100	254400	546600	226100	192100	150200	143600
18	158000	164300	441600	185600	225600	164200	241300	549000	217600	191500	149700	143600
19	157600	165900	427000	185000	219200	168500	229200	550600	211600	191100	149100	143600
20	157600	167400	405800	192600	210700	204800	218600	551400	205400	190500	148300	144600
21	157600	172300	385300	197900	200900	225800	211300	547400	201800	189600	147600	145000
22	157600	202700	365200	194600	190500	232800	206300	539700	202100	188900	146800	146500
23	157600	233400	345600	191200	179700	229900	205100	530200	202000	187800	148400	146800
24	157600	234100	323500	181000	173000	224800	204200	525200	201800	187200	147000	146700
25	157500	227100	303300	172200	195100	218600	209900	531800	202600	186600	146600	147000
26	157600	213400	281900	167300	209400	210800	215900	535300	203600	185600	146000	146800
27	157300	205100	261100	165800	213300	201100	207600	533100	204300	185000	145600	146200
28	156900	201700	241300	165500	210800	190200	200300	525200	203300	184400	144800	146100
29	157200	197900	225000	165800	---	186800	203000	512300	201800	183500	144100	146300
30	156800	192100	214100	165800	---	190600	207000	494200	201200	183100	143600	146200
31	156500	---	209500	166100	---	191100	---	474100	---	182300	143600	---

07336600 HUGO LAKE NEAR HUGO, OK--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MAX	159900	234100	445200	210200	228100	252900	266400	551400	452900	201100	182600	147000
MIN	156500	156000	185000	165500	158000	159300	192600	200300	201200	182300	143600	138000
‡	404.42	406.96	408.12	405.13	408.20	406.89	407.98	421.07	407.57	406.30	403.42	403.63
‡‡	-2,700	+35,600	+17,400	-43,400	+44,700	-19,700	+15,900	+267,100	-272,900	-18,900	-38,700	+2,600

CAL YR 1992 MAX 445200 MIN 152800 (‡‡) -13,000
WTR YR 1993 MAX 551400 MIN 138000 (‡‡) -112,300

(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET



07336820 RED RIVER NEAR DE KALB, TX

LOCATION .--Lat 33°40'59", long 94°41'39", Bowie County, Texas, Hydrologic Unit 11140106, on right bank at downstream side of bridge on U.S. Highway 259, 4.8 mi upstream from North Mill Creek, 13 mi north of De Kalb, and at mile 556.9.

DRAINAGE AREA.--47,348 mi^2, of which 5,936 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 302.92 ft above sea level.

REMARKS.--No estimated daily discharges. Records good. At times, flood peaks may be affected by Lake Texoma (station 07331500) located approximately 169 mi upstream, and low flows may be affected by releases for the generation of electric power. Storage and/or releases from Lake Hugo on the Kiamichi River, a tributary to the Red River about 45 mi upstream, also may affect flows. Gage-height telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since 1957, 205,000 ft^3/s June 1957 (gage height, 32.2 ft), from rating curve extended above 186,500 ft^3/s. The greatest flood since 1936 occurred in February 1938, stage unknown.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

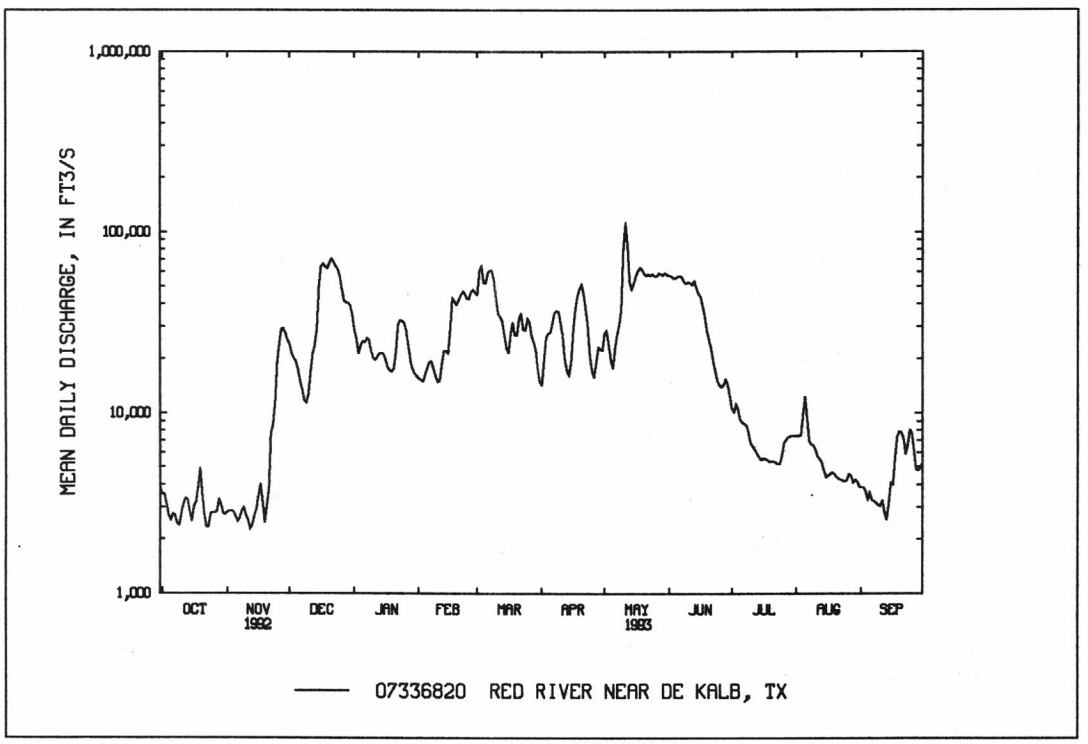
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3520	2820	24000	28900	15500	45100	14300	27600	57000	10600	7410	3870
2	3550	2850	21200	25700	15200	60700	19500	28700	56700	10100	7440	3860
3	3100	2860	20100	21300	14900	65000	26100	23900	55300	11200	7500	3660
4	2690	2820	19400	23500	16400	52400	27500	19600	55100	10500	9860	3320
5	2530	2640	17300	25100	17800	52100	27700	17700	56800	9160	12300	3620
6	2750	2490	15000	24600	19100	59000	31100	22800	56800	8860	9390	3280
7	2710	2600	13400	26000	19400	61100	35800	26900	56100	8680	6930	3240
8	2430	2870	11700	25600	17600	60700	36700	30800	53000	8520	6650	3170
9	2370	2990	11400	22100	16000	53000	36400	37100	51800	7730	6580	3080
10	2750	2700	12700	20200	14800	42800	31500	81200	52700	6770	6190	3050
11	3140	2550	16800	19700	15100	35400	26800	113000	52200	6500	5700	3290
12	3350	2270	21300	20400	18600	33800	19900	82400	51000	6220	5550	2810
13	3330	2380	23800	21400	22000	32000	17000	53200	53700	5950	5280	2550
14	2850	2670	29400	21400	22000	26800	16100	48100	49500	5650	4790	3130
15	2500	2940	49700	21200	21300	22800	19300	52100	45600	5470	4390	4110
16	3020	3490	64100	19600	28900	21500	28500	57000	44200	5560	4480	4010
17	3200	4030	66600	17900	43300	27700	37500	60800	39400	5530	4560	5680
18	3890	3200	64100	17200	41600	31800	44000	63400	34700	5470	4670	7370
19	4950	2450	62800	16900	39600	26900	48700	61700	28700	5320	4560	7880
20	3570	3060	66800	17600	42000	26900	51400	58400	25800	5350	4400	7780
21	2720	3800	71100	22100	44400	33800	45700	57100	23000	5370	4320	7270
22	2320	7720	68300	30800	47100	35500	37600	58100	19700	5270	4240	5880
23	2330	8560	64800	32700	45600	29000	30100	57200	17100	5170	4220	6580
24	2760	11400	61900	32300	42900	28700	20500	58200	15100	5200	4160	8040
25	2810	19400	57200	31500	42700	33300	17000	56600	14200	5850	4210	7790
26	2800	24400	48600	28500	46700	31800	15800	56700	13900	6820	4560	6180
27	2830	29100	41800	23400	48100	26600	19100	59000	14300	7100	4490	4860
28	3330	29500	40900	19400	46100	24800	23100	57900	15400	7350	4100	4780
29	3090	27600	40800	17500	---	22200	22400	57800	14400	7400	4250	4930
30	2760	25300	39200	16500	---	17400	22300	59000	12400	7430	4170	5240
31	2740	---	34900	16000	---	14800	---	57600	---	7420	3880	---
TOTAL	92690	243460	1201100	707000	824700	1135400	849400	1601600	1135600	219520	175230	144310
MEAN	2990	8115	38750	22810	29450	36630	28310	51660	37850	7081	5653	4810
MAX	4950	29500	71100	32700	48100	65000	51400	113000	57000	11200	12300	8040
MIN	2320	2270	11400	16000	14800	14800	14300	17700	12400	5170	3880	2550
AC-FT	183900	482900	2382000	1402000	1636000	2252000	1685000	3177000	2252000	435400	347600	286200

07336820 RED RIVER NEAR DE KALB, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9195	13990	13830	11470	14780	19800	18970	25200	27200	9416	5072	5612
MAX	39980	53170	45440	49500	31000	48590	62330	125500	67360	35030	14250	24010
(WY)	1982	1975	1972	1992	1969	1987	1990	1990	1987	1982	1992	1974
MIN	1783	2105	1608	1699	2876	2492	3005	4707	2909	2598	1418	1368
(WY)	1979	1980	1978	1981	1976	1980	1981	1972	1988	1972	1972	1988

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1968-93	
ANNUAL TOTAL	8962520		8330010			
ANNUAL MEAN	24490		22820		14460	
HIGHEST ANNUAL MEAN					30100	1990
LOWEST ANNUAL MEAN					4690	1980
HIGHEST DAILY MEAN	73600	Jun 10	113000	May 11	278000	May 7 1990
LOWEST DAILY MEAN	2270	Nov 12	2270	Nov 12	254	Nov 29 1979
ANNUAL SEVEN-DAY MINIMUM	2600	Oct 4	2600	Oct 4	529	Aug 31 1972
INSTANTANEOUS PEAK FLOW			114000	May 11	279000	May 6 1990
INSTANTANEOUS PEAK STAGE			27.94	May 11	34.42	May 6 1990
INSTANTANEOUS LOW FLOW			2150	Oct 23	213	Nov 30 1979
ANNUAL RUNOFF (AC-FT)	17780000		16520000		10470000	
10 PERCENT EXCEEDS	52300		56700		40100	
50 PERCENT EXCEEDS	21000		17600		6740	
90 PERCENT EXCEEDS	3080		3010		2100	



07336820 RED RIVER NEAR DE KALB, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical and biochemical analyses: January 1968 to current year. Pesticide analyses: October 1970 to July 1981. Sediment analyses: November 1979 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: January 1968 to September 1991.

WATER TEMPERATURE: January 1968 to September 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 2,140 microsiemens July 13, 1980; minimum daily, 114 microsiemens Oct. 31, 1984.

WATER TEMPERATURE (1968-89): Maximum daily, 4.0°C on several days during July and August of 1969 and 1970; minimum daily, 0.0°C Jan. 11, 1977.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

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)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	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)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT												
28...	1655	3530	1230	7.9	21.0	9.0	102	1.9	310	130	80	26
DEC												
17...	1350	67100	384	7.6	7.0	10.6	88	1.9	100	50	29	7.0
FEB												
11...	1420	15000	965	8.3	11.0	11.2	103	2.2	240	120	63	20
MAR												
30...	1430	16900	726	8.2	16.0	10.0	104	1.2	190	85	51	16
MAY												
19...	1600	61400	940	8.0	21.5	7.3	84	1.6	250	130	66	21
JUL												
13...	1130	5910	878	8.4	30.0	8.1	109	2.0	260	110	67	22

DATE	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 CAC03 (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)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)
OCT												
28...	120	3	4.8	170	160	180	0.30	1.8	677	--	--	0.020
DEC												
17...	35	2	3.6	52	50	49	0.10	5.3	211	0.140	--	0.090
FEB												
11...	100	3	4.0	120	130	150	0.20	7.1	550	0.360	0.360	--
MAR												
30...	67	2	2.9	110	100	100	0.20	7.6	411	0.330	--	--
MAY												
19...	90	2	3.8	120	150	140	0.20	6.7	551	0.360	0.360	--
JUL												
13...	80	2	4.1	150	130	110	0.30	3.1	509	--	--	--

07336820 RED RIVER NEAR DE KALB, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT 28...	--	<0.050	--	<0.010	--	0.60	--	--	0.60	0.100	--	--
DEC 17...	--	0.230	--	0.120	--	0.38	--	--	0.50	0.130	--	--
FEB 11...	0.020	0.380	0.380	--	0.020	--	0.18	0.20	--	--	0.030	0.020
MAR 30...	<0.010	0.330	0.330	--	0.020	--	0.28	0.30	--	--	<0.010	0.020
MAY 19...	0.030	0.390	0.390	--	0.040	--	0.26	0.30	--	--	0.020	0.020
JUL 13...	<0.010	--	<0.050	--	0.020	--	0.18	0.20	--	--	<0.010	0.040

DATE	PHOSPHORUS ORTHO TOTAL (MG/L AS P) (70507)	PHOSPHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYLLIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHROMIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT 28...	<0.010	--	34	324	85	--	--	--	--	--	--	--
DEC 17...	0.120	--	1040	188000	83	1	65	<0.5	<1.0	<5	<3	<10
FEB 11...	--	0.06	177	7170	64	--	--	--	--	--	--	--
MAR 30...	--	0.06	611	27900	89	--	--	--	--	--	--	--
MAY 19...	--	0.06	656	109000	81	--	--	--	--	--	--	--
JUL 13...	--	0.12	30	479	92	1	150	<0.5	<1.0	<5	<3	<10

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELENIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRONTIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANADIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 28...	--	--	--	--	--	--	--	--	--	--	--	--
DEC 17...	75	<10	5	21	<0.1	<10	<10	<1	<1.0	260	<6	6
FEB 11...	--	--	--	--	--	--	--	--	--	--	--	--
MAR 30...	--	--	--	--	--	--	--	--	--	--	--	--
MAY 19...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 13...	6	<10	10	4	0.9	<10	<10	<1	<1.0	700	<6	5

07337300 PINE CREEK LAKE NEAR WRIGHT CITY, OK

LOCATION.--Lat 34°06'43", long 95°04'46", in NE 1/4 NW 1/4 sec.23, T.5 S., R.21 E., McCurtain County, Hydrologic Unit 11140107, at left of outlet works of dam on Little River, 4.7 mi upstream from bridge on State Highway 98, 5.0 mi northwest of Wright City, and at mile 145.3.

DRAINAGE AREA.--635 mi^2.

PERIOD OF RECORD.--June 1969 to September 1993 (discontinued). Prior to October 1970, published as Pine Creek Reservoir near Wright City.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by rolled earth dam; regulated storage began June 1, 1969; conservation pool was first filled Jan. 7, 1970. Total capacity, 1,136,000 acre-ft at elevation 509.0 ft, top of dam, 465,800 acre-ft at elevation 480.0 ft, crest of spillway, 53,800 acre-ft at elevation 438.0 ft top of conservation pool, 7,140 acre-ft dead storage at elevation 414.0 ft. Figures given herein represent total contents. Reservoir is designed for flood control, municipal and industrial water supply, and recreation. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 356,500 acre-ft, Nov. 4, 1984, elevation, 473.13 ft; minimum since conservation pool was first filled, 28,220 acre-ft, Oct. 21, 1972, elevation, 429.34 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 212,700 acre-ft, May 13, elevation, 461.54 ft; minimum 52,050 acre-ft, Nov. 8-9, elevation, 437.54 ft.

Capacity table (elevation, in feet, and contents, in acre-ft):

434	40,320	445	85,440
436	46,650	448	102,600
439	57,610	462	217,470
442	70,490	474	369,400

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	85820	52600	69760	83060	55880	69850	62990	88590	72500	73650	65540	60060
2	78410	52530	65190	78050	e56040	76760	63120	86900	72500	73210	65620	59840
3	71000	52450	60790	73410	e56100	77350	63670	84440	72550	73170	65410	59840
4	63840	52450	58090	87770	e56110	73410	64670	79410	72550	72970	65620	59500
5	58480	52270	57140	97300	56120	69760	65450	75630	72460	72780	65540	59260
6	55460	52270	56430	101300	56750	66330	66240	75670	72460	72640	65280	58820
7	54360	52270	55540	101300	57220	62660	67130	76020	72460	72410	65100	58630
8	54090	52050	54550	98780	57800	59980	67890	74220	72170	72130	65050	58580
9	54030	52070	60130	97060	56790	56900	68430	132500	72410	71800	64880	58340
10	54050	52230	64020	95490	55810	54210	68980	197100	72410	71660	64580	58190
11	53980	52600	64580	91830	55610	53340	69390	207200	72500	71470	64410	57850
12	53980	53160	64280	87170	56080	53830	69850	211900	72600	71190	64100	57610
13	53900	54930	64490	82340	56710	53900	70170	211200	72630	70860	63840	57530
14	53860	55770	99200	76810	57100	54130	79110	203100	72640	70720	63630	57660
15	53860	56280	164200	72970	69670	55570	89980	192700	72740	70350	63380	57490
16	53830	56470	182200	69890	83060	69620	90750	182000	74130	70080	62990	57260
17	53710	56280	189700	67000	85120	74460	86200	170500	74940	69850	62780	57140
18	53680	56000	192300	64020	83060	74270	80840	159000	75430	69620	62570	57140
19	53450	56240	187500	61280	79010	77450	76070	147600	75430	69300	62360	56870
20	53490	56710	180000	64230	73890	101800	74220	136000	75130	69020	62150	57140
21	53310	61280	171600	66680	68520	109700	73120	124500	74800	68660	61810	57140
22	53310	86520	162600	66510	62610	111400	72600	113100	74460	68380	61450	57370
23	53160	93580	154200	65100	57410	108000	72880	102300	73930	68070	61550	56940
24	52970	95550	145000	62910	56000	100800	72930	93520	73450	67660	61450	56590
25	52970	94210	136200	60460	64970	92110	83430	85710	73740	67440	61320	56470
26	52790	91030	127100	57340	69850	84700	87070	79870	75230	67080	61120	56280
27	52750	87170	118400	55570	69020	78410	83120	76020	76220	66820	60990	55960
28	52680	83220	109400	55000	67080	72080	78510	73980	76270	66460	60790	55850
29	52600	78910	101100	55160	---	67130	83750	73840	75480	66240	60460	55500
30	52530	74410	93690	55460	---	64150	88930	73410	74700	66100	60360	55040
31	52270	---	87990	55650	---	62870	---	73020	---	65840	60160	---

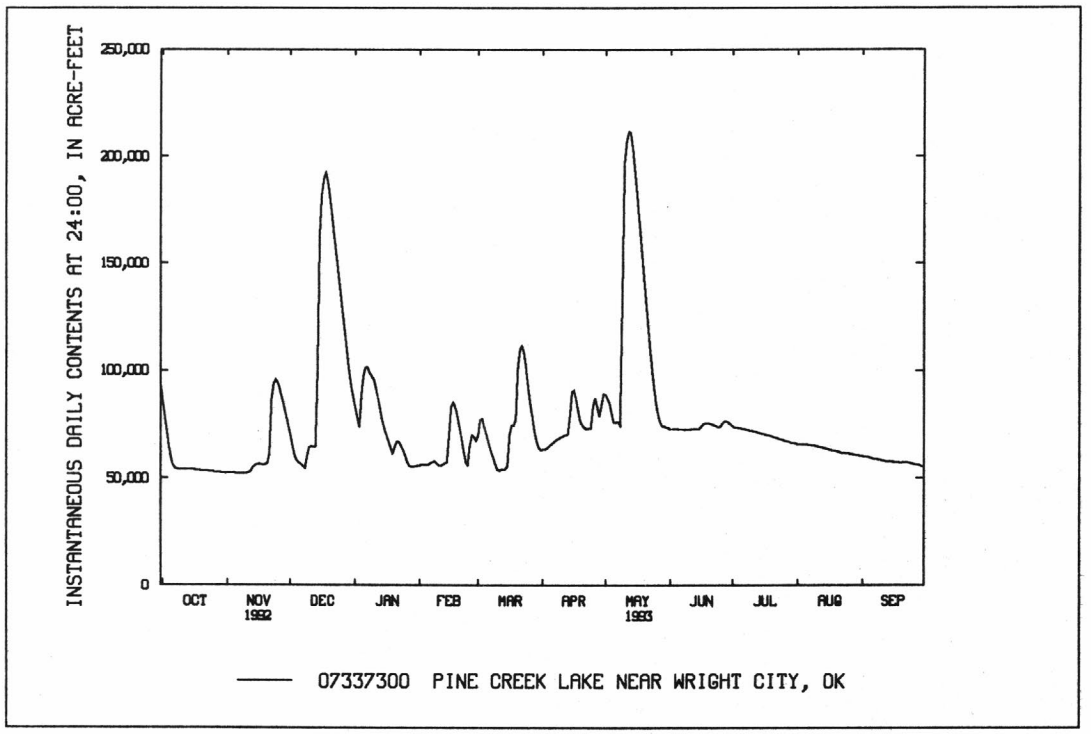
e Estimated

07337300 PINE CREEK LAKE NEAR WRIGHT CITY, OK--Continued

MAX	85820	95550	192300	101300	85120	111400	90750	211900	76270	73650	65620	60060
MIN	52270	52050	54550	55000	55610	53340	62990	73020	72170	65840	60160	55040
(‡)	437.60	442.83	445.47	438.50	441.25	440.28	445.64	442.54	442.89	440.97	439.54	438.34
(‡‡)	-40,970	+22,140	+13,580	-32,340	+11,430	-4,210	+26,060	-15,910	+1,680	-8,860	-5,680	-5,120

CAL YR 1992 MAX 192300 MIN 52050 (‡‡) +19,560
WTR YR 1993 MAX 211900 MIN 52050 (‡‡) -38,200

(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET



07337900 GLOVER RIVER NEAR GLOVER, OK

LOCATION.--Lat 34°05'51", long 94°54'07", in NW 1/4 NE 1/4 sec.28, T.5 S., R.23 E., McCurtain County, Hydrologic Unit 11140107, on right downstream end of bridge on State Highways 3 and 7, 2.0 mi north of Glover, 11.0 mi northwest of Broken Bow, and at mile 9.2.

DRAINAGE AREA.--315 mi^2.

PERIOD OF RECORD.--October 1961 to current year. Prior to October 1990, published as Glover Creek near Glover.

GAGE.--Water-stage recorder. Datum of gage is 378.70 ft above sea level.

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

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1961 reached a stage of 28.84 ft, from floodmark. Flood in 1908 was higher than in May 1961, from information provided by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 8,000 ft^3/s.

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
Nov. 22	0800	11,600	11.43	Mar. 16	1200	8,530	9.82
Dec. 15	1100	23,200	15.90	Mar. 20	0600	8,430	9.76
Jan. 4	1400	13,800	12.49	May 10	0300	38,900	20.48

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	116	8.4	247	528	263	1330	169	1240	90	41	3.0	5.3
2	89	8.1	210	473	236	3050	147	788	72	32	4.4	5.1
3	69	7.4	176	427	217	1510	130	1460	58	25	12	5.7
4	53	7.1	157	6600	207	963	151	792	51	20	98	5.8
5	42	7.4	144	3000	206	723	188	549	43	17	58	5.6
6	35	8.5	147	1440	229	579	215	836	39	15	40	5.5
7	29	e7.8	178	999	223	490	179	952	35	13	46	5.3
8	24	8.5	190	790	200	410	170	683	32	11	61	6.5
9	20	8.9	1940	726	173	345	169	4920	28	10	57	8.0
10	17	9.6	2240	1240	159	293	155	15100	29	9.3	61	7.5
11	15	12	1050	981	227	241	129	2550	31	8.8	57	7.0
12	14	49	721	854	441	204	114	1560	51	8.2	53	6.6
13	12	427	552	747	407	174	102	1460	70	7.4	48	7.0
14	11	204	6280	630	349	155	430	908	70	6.8	34	13
15	10	126	18400	550	1760	174	2540	656	49	6.3	25	17
16	9.5	87	5050	492	4020	5940	1140	509	44	5.6	20	15
17	8.4	63	2010	424	1500	2240	718	409	45	5.2	16	12
18	8.0	49	1180	452	940	1100	540	333	53	4.8	13	18
19	7.3	58	912	522	720	798	427	325	59	4.2	11	33
20	6.5	442	801	2320	602	4920	903	272	44	3.8	10	32
21	6.6	1110	662	2020	519	2060	640	207	37	3.4	9.4	26
22	6.7	6750	566	1160	437	1170	454	165	31	3.0	8.3	23
23	6.2	2230	504	856	354	833	357	163	25	2.8	7.5	20
24	6.2	1120	428	700	300	642	290	276	23	2.6	9.6	19
25	6.2	951	360	554	2210	527	1680	397	21	2.3	9.5	20
26	6.2	722	324	471	2160	443	1450	276	22	2.1	8.7	21
27	6.3	553	286	405	1110	360	730	191	72	2.0	7.8	20
28	6.2	448	257	356	798	306	506	145	114	1.7	7.0	20
29	6.1	368	274	346	---	260	2010	140	73	2.4	6.2	20
30	6.2	305	432	345	---	225	2970	124	53	4.9	6.0	19
31	5.9	---	555	299	---	198	---	108	---	3.8	5.5	---
TOTAL	664.5	16155.7	47233	31707	20967	32663	19803	38494	1464	285.4	812.9	428.9
MEAN	21.4	539	1524	1023	749	1054	660	1242	48.8	9.21	26.2	14.3
MAX	116	6750	18400	6600	4020	5940	2970	15100	114	41	98	33
MIN	5.9	7.1	144	299	159	155	102	108	21	1.7	3.0	5.1
AC-FT	1320	32040	93690	62890	41590	64790	39280	76350	2900	566	1610	851
CFSM	.07	1.71	4.84	3.25	2.38	3.34	2.10	3.94	.15	.03	.08	.05
IN.	.08	1.91	5.58	3.74	2.48	3.86	2.34	4.55	.17	.03	.10	.05

e Estimated

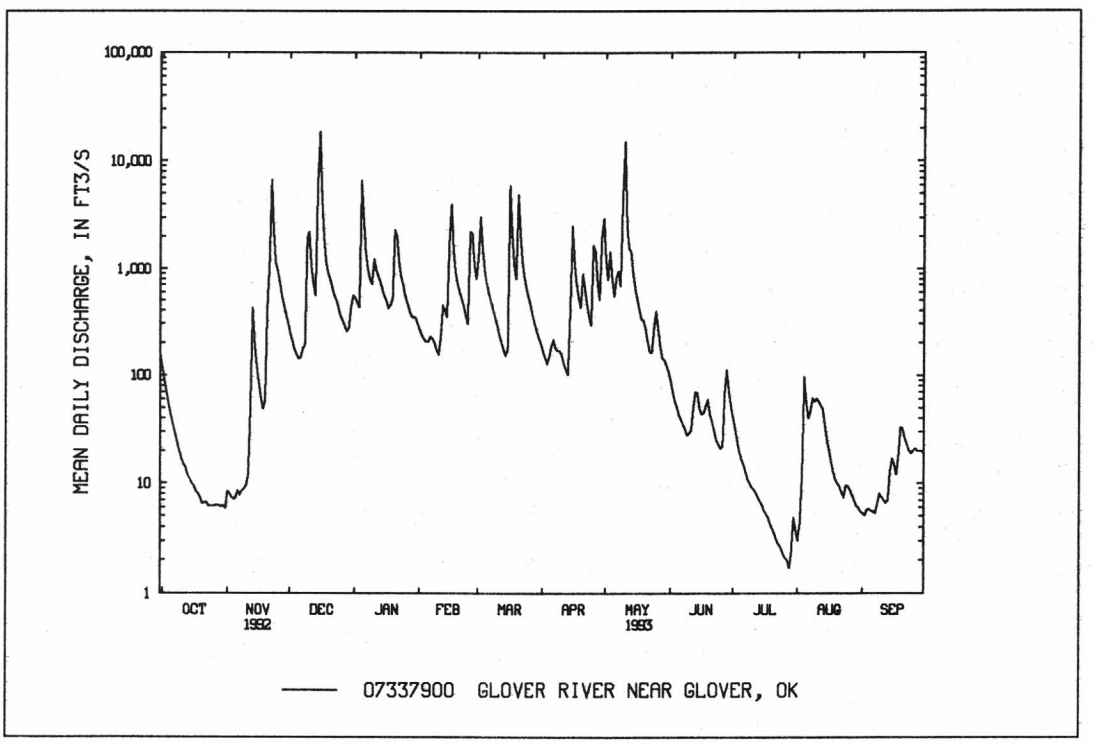
07337900 GLOVER RIVER NEAR GLOVER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	347	520	709	471	673	861	758	885	360	74.0	77.7	217
MAX	2427	2146	3376	1202	1600	2506	2753	3503	1514	437	461	2690
(WY)	1985	1975	1972	1969	1989	1973	1991	1990	1973	1992	1992	1974
MIN	.000	.33	2.80	1.96	52.5	96.9	125	40.4	4.59	1.06	.000	.000
(WY)	1979	1964	1964	1964	1967	1980	1987	1988	1972	1966	1972	1972

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	262250.2		210678.4			
ANNUAL MEAN	717		577		495	
HIGHEST ANNUAL MEAN					979	1973
LOWEST ANNUAL MEAN					169	1976
HIGHEST DAILY MEAN	18400	Dec 15	18400	Dec 15	53100	Dec 10 1971
LOWEST DAILY MEAN	5.9	Oct 31	1.7	Jul 28	[a].00	Jul 19 1966
ANNUAL SEVEN-DAY MINIMUM	6.2	Oct 25	2.3	Jul 23	.00	Aug 4 1970
INSTANTANEOUS PEAK FLOW			38900	May 10	98600	Dec 10 1971
INSTANTANEOUS PEAK STAGE			20.48	May 10	29.72	Dec 10 1971
ANNUAL RUNOFF (AC-FT)	520200		417900		358700	
ANNUAL RUNOFF (CFSM)	2.27		1.83		1.57	
ANNUAL RUNOFF (INCHES)	30.97		24.88		21.36	
10 PERCENT EXCEEDS	1570		1280		1050	
50 PERCENT EXCEEDS	320		155		122	
90 PERCENT EXCEEDS	21		6.3		3.3	

[a]No flow at times in several years.



07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK

LOCATION.--Lat 33°56'28", long 94°45'30", in SE 1/4 SE 1/4 sec.14, T.7 S., R.24 E., McCurtain County, Hydrologic Unit 11140107, on left bank at downstream side of bridge on U.S. Highway 70 just downstream from Lukfata Creek, 5.0 mi northeast of Idabel, and at mile 103.4.

DRAINAGE AREA.--1,226 mi^2.

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 312.08 ft above sea level. Oct. 1, 1946, to Oct. 26, 1950, and for stages below 9.0 ft Oct. 26, 1950, to Oct. 10, 1951, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated since June 1969 by Pine Creek Lake (station 07337300), 41.9 mi upstream. Small diversions for municipal use by City of Idabel at station and by Weyerhaeuser 41 miles above station. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1938 reached a stage of 39.7 ft, from information provided by local resident, discharge, 86,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2810	e96	3160	4880	925	4310	1420	5270	906	779	81	102
2	3910	97	3050	4210	869	6430	726	4370	690	762	85	102
3	3990	111	2960	4030	828	5960	598	4030	457	509	92	115
4	3910	e100	2880	6690	1370	5060	541	4800	315	194	103	121
5	3810	e94	1930	9120	1110	5130	735	4750	275	144	174	116
6	2960	e86	1100	7410	717	4440	633	3830	256	134	193	110
7	1670	e84	1090	4050	556	3860	594	3680	243	129	148	107
8	828	e82	1100	3530	492	3610	621	3580	232	123	162	106
9	406	e82	2070	3890	979	3070	563	3850	220	e120	186	112
10	187	90	4720	4390	1370	2720	479	8710	220	e115	176	120
11	135	193	4290	4560	2120	2390	421	10600	234	e112	161	116
12	123	392	3220	4870	2120	1240	373	9720	267	e109	151	113
13	116	483	2450	5230	1620	703	343	7130	289	e107	140	110
14	112	612	3390	5050	1270	521	742	5940	258	e105	125	123
15	107	423	10800	4780	1390	504	3110	6250	256	e103	120	156
16	e103	315	14800	3910	1620	4400	3770	6530	231	e100	113	162
17	e100	284	14800	3190	1620	7800	4120	6580	222	e98	108	142
18	e96	429	10400	3140	3440	5840	4630	6520	213	e96	104	135
19	e97	469	6790	3270	4260	4130	4550	6430	563	e94	100	132
20	e100	1840	6030	3820	4400	5880	4160	6330	653	e92	99	146
21	e98	2010	6270	5540	4570	7140	3130	6250	551	e90	97	174
22	e96	5700	6200	5110	4450	4860	2270	6190	518	e88	96	178
23	e94	7490	6070	4200	4290	3870	1360	6120	502	e86	92	175
24	e92	6870	5910	4460	3830	4510	980	6510	486	e83	96	277
25	e92	5500	5720	3950	4480	5370	925	6270	471	e81	106	306
26	e95	4470	5560	3370	5690	5870	2810	5630	395	e79	111	319
27	e98	3980	5430	3110	4460	5500	3420	4360	223	77	108	316
28	e96	3660	5340	2310	4230	4640	4170	3060	189	80	104	314
29	e95	3440	5330	1570	---	4320	4240	1970	452	81	101	355
30	e94	3280	5340	1160	---	3670	5140	1300	789	82	100	385
31	e95	---	5380	1000	---	2480	---	1040	---	83	99	---
TOTAL	26615	52762	163580	129800	69076	130228	61574	167600	11576	4935	3731	5245
MEAN	859	1759	5277	4187	2467	4201	2052	5406	386	159	120	175
MAX	3990	7490	14800	9120	5690	7800	5140	10600	906	779	193	385
MIN	92	82	1090	1000	492	504	343	1040	189	77	81	102
AC-FT	52790	104700	324500	257500	137000	258300	122100	332400	22960	9790	7400	10400

e Estimated

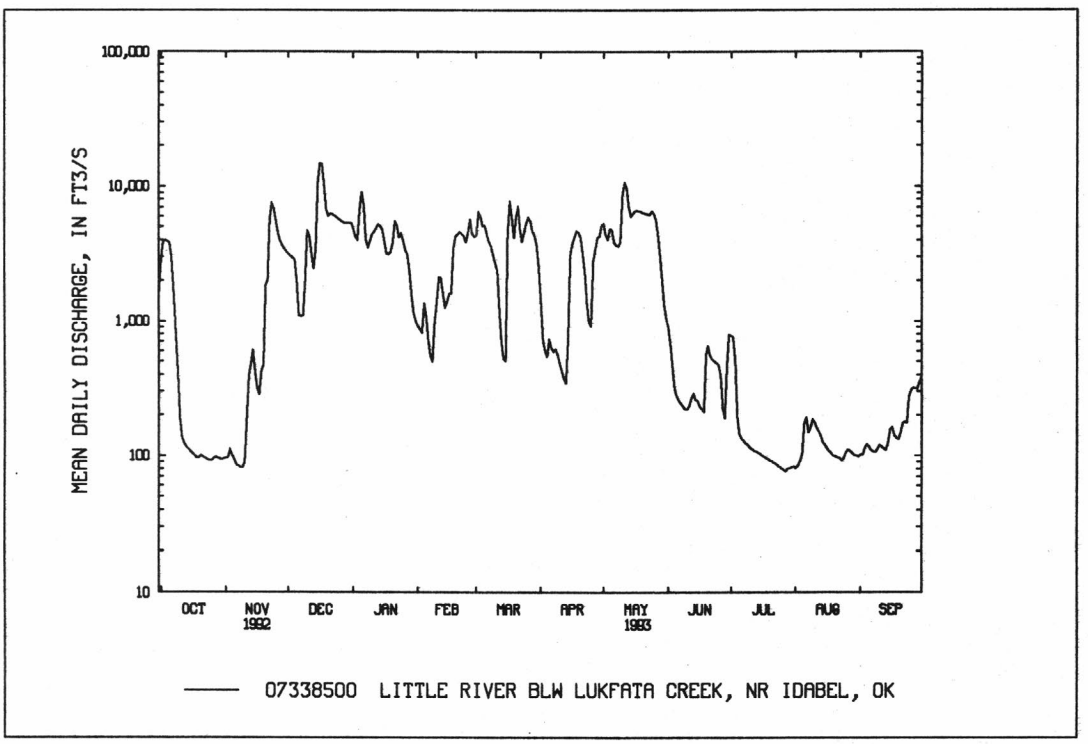
07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1038	2225	2788	1954	2535	3031	2521	3237	2157	391	323	698
MAX	4453	7887	10320	4902	5355	7730	6187	8976	6044	2058	2299	6992
(WY)	1985	1975	1972	1991	1990	1973	1973	1990	1973	1992	1992	1974
MIN	26.4	38.2	37.3	157	176	304	380	143	46.9	31.0	18.5	25.0
(WY)	1979	1990	1990	1981	1976	1980	1987	1988	1972	1977	1972	1972

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1971-93	
ANNUAL TOTAL	927374		826722			
ANNUAL MEAN	2534		2265		[a]1903	
HIGHEST ANNUAL MEAN					3424	1973
LOWEST ANNUAL MEAN					676	1976
HIGHEST DAILY MEAN	14800	Dec 16	14800	Dec 16	66800	Dec 11 1971
LOWEST DAILY MEAN	82	Nov 8	77	Jul 27	[b]7.8	Aug 14 1976
ANNUAL SEVEN-DAY MINIMUM	88	Nov 4	80	Jul 24	11	Oct 15 1972
INSTANTANEOUS PEAK FLOW			16300	Dec 17	103000	Dec 10 1971
INSTANTANEOUS PEAK STAGE			30.68	Dec 17	39.39	Dec 10 1971
ANNUAL RUNOFF (AC-FT)	1839000		1640000		1379000	
10 PERCENT EXCEEDS	5710		5870		6020	
50 PERCENT EXCEEDS	1950		828		592	
90 PERCENT EXCEEDS	121		96		43	

[a]Prior to regulation, water years 1947-68, 1,622 ft^3/s.
[b]Minimum daily discharge for period of record, 0.4 ft^3/s, Sept. 15-16, 21 to Oct. 1, 1956.



07338750 MOUNTAIN FORK AT SMITHVILLE, OK

LOCATION.--Lat 34°27'44", long 94°38'06", in SE 1/4 SW 1/4 sec.13, T.1 S., R.25 E., McCurtain County, Hydrologic Unit 11140108, on right downstream abutment of bridge on Highway 4, .5 mi east of Smithville, and at mi 55.6.

DRAINAGE AREA.--320 mi^2.

PERIOD OF RECORD.--October 1991 to current year.

GAGE.--Water-stage recorder. Datum of gage is 664.70 ft above sea level.

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	197	60	346	689	268	1240	279	e500	295	86	9.8	6.4
2	170	55	290	689	246	2290	256	e560	252	77	16	5.8
3	152	50	264	689	229	1520	236	1250	219	70	24	9.7
4	136	49	249	7000	224	1070	272	984	197	62	41	17
5	124	44	236	e3000	225	792	546	719	171	55	36	19
6	112	40	282	2010	220	617	468	576	163	50	61	16
7	102	e36	311	1490	201	522	424	488	143	44	125	14
8	92	32	307	1110	188	446	436	421	139	40	81	14
9	86	36	2590	975	178	387	393	4310	130	37	86	15
10	80	52	2440	1130	179	336	357	12600	138	33	74	12
11	75	62	1350	910	537	292	330	2910	299	31	59	10
12	72	645	928	912	624	259	305	1570	377	28	48	9.0
13	68	450	689	801	496	234	283	1160	272	26	39	8.2
14	65	274	4750	688	421	215	1140	786	200	25	33	66
15	61	207	e21000	621	2480	284	4100	575	162	22	27	41
16	58	170	4890	559	3730	4820	2170	454	158	20	23	29
17	53	148	1770	498	1720	2530	1310	378	155	19	20	39
18	50	133	1010	558	1120	1440	966	442	131	17	18	32
19	47	276	712	551	828	1470	1020	868	134	15	16	24
20	45	4830	576	2070	668	3490	2430	480	118	14	14	33
21	44	3050	423	1860	572	2230	1150	362	109	14	13	32
22	42	6740	348	1240	465	1480	770	309	103	14	12	25
23	70	2590	299	903	386	1080	596	542	97	18	10	20
24	110	1550	250	703	339	807	494	4200	90	19	12	17
25	108	1520	206	547	2480	671	3000	2240	207	15	11	16
26	103	1110	192	465	2250	547	e2000	1150	208	13	9.1	16
27	91	792	316	411	1330	470	e1300	713	181	12	8.0	16
28	78	604	150	369	954	415	e900	522	142	10	7.4	15
29	69	494	279	361	---	374	e700	435	113	9.6	7.1	14
30	63	415	420	335	---	341	e600	465	98	9.3	7.9	15
31	58	---	605	290	---	311	---	346	---	9.5	7.5	---
TOTAL	2681	26514	48478	34434	23558	32980	29231	43315	5201	914.4	955.8	606.1
MEAN	86.5	884	1564	1111	841	1064	974	1397	173	29.5	30.8	20.2
MAX	197	6740	21000	7000	3730	4820	4100	12600	377	86	125	66
MIN	42	32	150	290	178	215	236	309	90	9.3	7.1	5.8
AC-FT	5320	52590	96160	68300	46730	65420	57980	85920	10320	1810	1900	1200

e Estimated

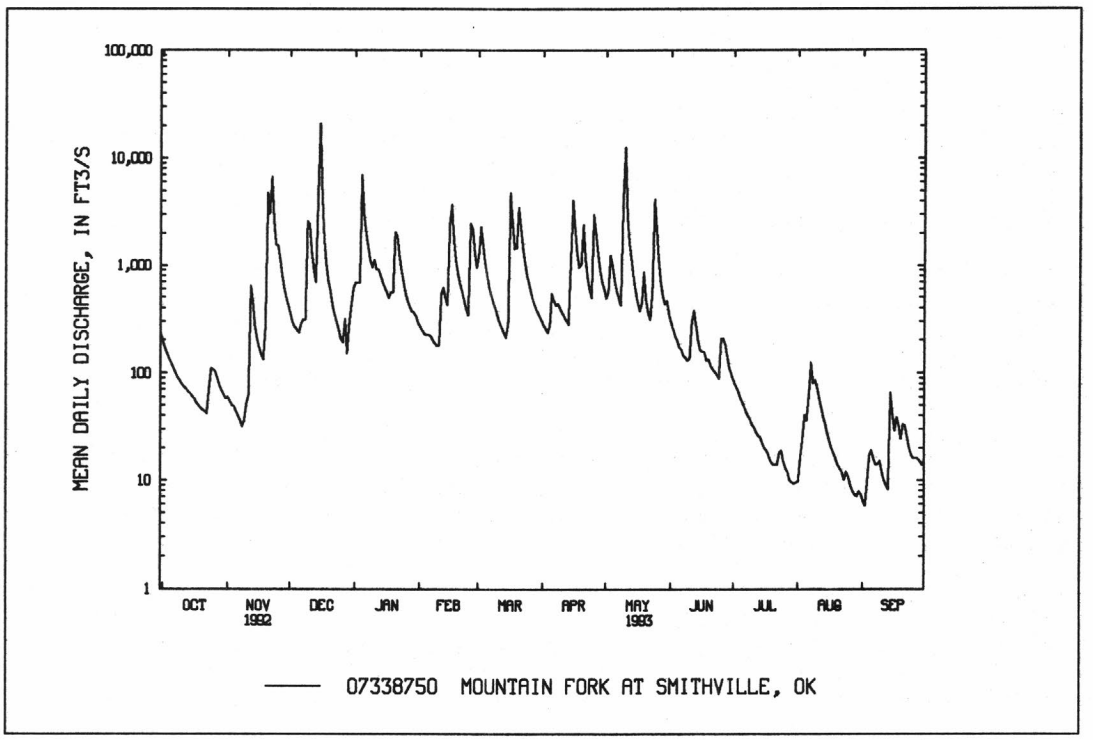
07338750 MOUNTAIN FORK AT SMITHVILLE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	454	1069	1715	814	774	884	605	825	411	94.6	93.2	773
MAX	822	1254	1866	1111	841	1064	974	1397	649	160	156	1525
(WY)	1992	1992	1992	1993	1993	1993	1993	1993	1992	1992	1992	1992
MIN	86.5	884	1564	517	709	703	235	252	173	29.5	30.8	20.2
(WY)	1993	1993	1993	1992	1992	1992	1992	1992	1993	1993	1993	1993

SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1992-93	
ANNUAL TOTAL	225914.0		248868.3			
ANNUAL MEAN	617		682		709	
HIGHEST ANNUAL MEAN					736	1992
LOWEST ANNUAL MEAN					682	1993
HIGHEST DAILY MEAN	21000	Dec 15	21000	Dec 15	21000	Dec 15 1992
LOWEST DAILY MEAN	7.0	Aug 31	5.8	Sep 2	5.8	Sep 2 1993
ANNUAL SEVEN-DAY MINIMUM	11	Aug 25	7.2	Aug 27	7.2	Aug 27 1993
INSTANTANEOUS PEAK FLOW			29100	Dec 15	29100	Dec 15 1992
INSTANTANEOUS PEAK STAGE			[a]22.58	Dec 15	[a]22.58	Dec 15 1992
ANNUAL RUNOFF (AC-FT)	448100		493600		513500	
10 PERCENT EXCEEDS	1120		1560		1590	
50 PERCENT EXCEEDS	281		256		295	
90 PERCENT EXCEEDS	48		15		20	

[a]From high-water mark and during backwater from Big Eagle Creek.



07338900 BROKEN BOW LAKE NEAR BROKEN BOW, OK

LOCATION.--Lat 34°08'35", long 94°41'00", in SW 1/4 sec.3, T.5 S., R.25 E., McCurtain County, Hydrologic Unit 11140108, at intake structure on upstream side of dam on Mountain Fork, 9.0 mi northeast of Broken Bow, and at mile 20.3.

DRAINAGE AREA.--754 mi^2.

PERIOD OF RECORD.--October 1968 to September 1993, (discontinued). Prior to October 1970, published as Broken Bow Reservoir near Broken Bow.

GAGE.--Water-stage recorder. Datum of gage is sea level.

REMARKS.--Reservoir is formed by a rolled earth and gravel structure. Outlet works consists of power-generated turbines and a concrete ogee-type weir controlled by eight 40- by 40-foot taintor gates. Regulated storage began Oct. 3, 1968; conservation pool was first filled Jan. 30, 1969. Total capacity, 1,368,000 acre-ft at elevation 627.5 ft, top of flood pool and spillway gages, 918,100 acre-ft at elevation 599.5 ft, top of power pool, and 448,200 acre-ft at elevation 559.0 ft, bottom of power pool. Figures given herein represent total contents. Reservoir is used for flood control, power development and water supply. U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,283,000 acre-ft, May 23, 1990, elevation, 622.64 ft; minimum since conservation pool was first filled, 672,000 acre-ft, Oct. 21, 1972, elevation 580.48 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,099,000 acre-ft, Dec. 19, elevation 611.56 ft; minimum 760,000 acre-ft, Sept. 30, elevation, 587.71 ft.

Capacity table (elevation, in feet, and contents, in acre-ft):

587	751,100	607	1,028,500
594	842,100	615	1,154,600
598	897,000	621	1,254,600

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY OBSERVATION AT 24:00 VALUES

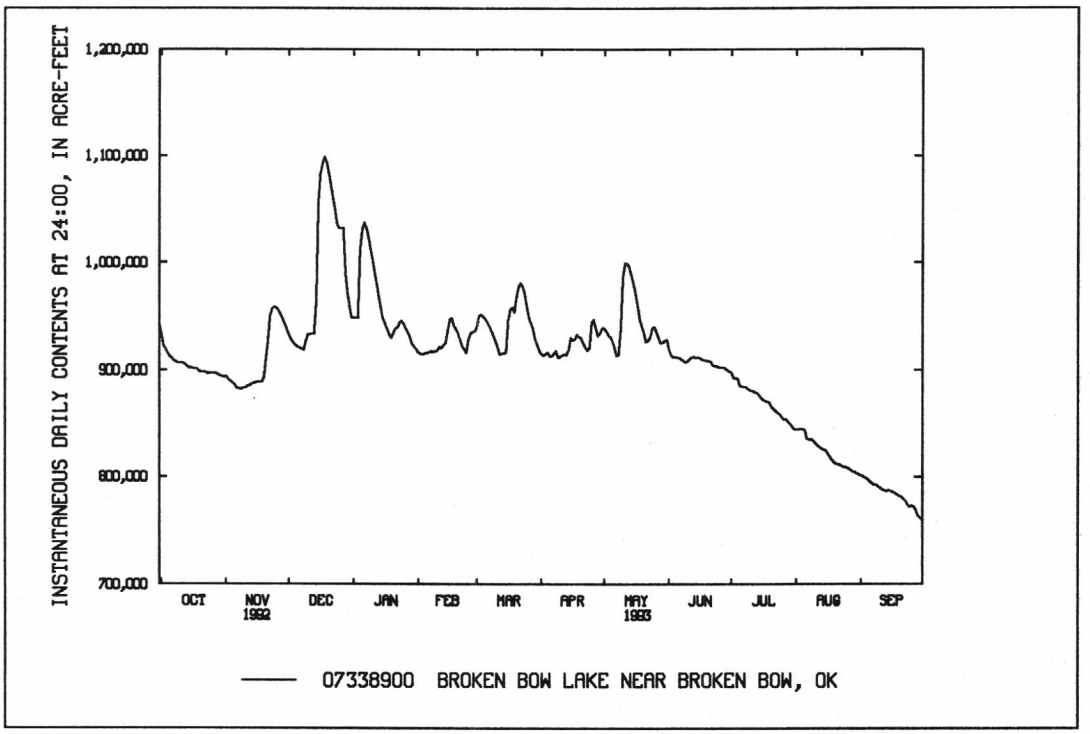
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	932600	894400	932000	948200	916400	939200	914700	938300	919500	897700	844100	801000
2	922200	891100	928300	948200	915000	949500	913300	935800	913800	892300	844400	800200
3	919200	889800	925600	948200	914400	950600	914700	932000	912000	892100	845000	798800
4	915100	887900	922800	1012000	915300	949200	916000	930200	911800	892100	844400	798000
5	912000	886300	921600	1031000	915500	947000	912800	926500	911600	885100	844000	795700
6	911100	883100	920400	1037000	916300	944100	912800	920100	911300	884800	835500	794100
7	908400	882700	919500	1033000	917100	940400	915000	913100	910000	884000	834900	792700
8	907300	882400	918400	1024000	916700	935800	917400	914400	908400	884000	835200	792900
9	906600	883100	926300	1013000	917200	931300	911400	939500	907000	882000	833900	791100
10	906700	883400	932300	1003000	917700	926500	912400	988000	908200	880900	831500	789600
11	906700	884700	932600	991500	921100	920700	913600	999700	910300	880500	829600	788000
12	905600	885600	933300	980600	920200	914400	914400	998900	911900	879400	828000	787400
13	903900	886800	933300	968700	922600	915300	913800	995600	912300	878700	826500	786500
14	902100	887700	961300	957400	924600	915400	918700	988300	911000	876800	825400	787500
15	902200	888400	1058000	947100	935300	916300	929200	979700	911900	874000	825000	786700
16	901700	888600	1083000	942800	946400	945300	927300	971000	911100	872200	821700	785800
17	901100	888600	1093000	938100	947400	955500	928000	959000	909700	870800	818900	784700
18	901000	888600	1099000	933000	941100	957400	932300	947000	908900	870400	815900	783400
19	898600	893300	1094000	929600	937300	953400	930200	940200	908600	869700	813400	782100
20	898200	911300	1084000	933700	933500	967900	929500	934200	908600	865500	812300	781600
21	898000	927500	1073000	938100	928200	977000	924500	926100	908000	863500	811600	779400
22	898000	949800	1061000	939100	921500	980300	920700	926800	904600	861700	811200	778000
23	896800	956500	1050000	943000	919100	977800	917800	930000	903500	859900	809800	773800
24	897000	957900	1036000	945100	915800	970500	920400	938300	903300	858200	809300	772300
25	897200	957100	1032000	942400	928000	959300	943800	939500	902600	855700	808700	773300
26	897300	954700	1032000	937800	933600	948500	946000	935200	902400	853300	807700	772300
27	897300	951200	1032000	933900	934900	943200	938200	930000	902600	853800	806300	769100
28	895500	947100	989900	929900	935500	938100	931300	924600	901400	851400	804700	763600
29	895200	942500	971900	923900	---	929000	933600	925100	900100	849500	804200	761700
30	894000	937200	959100	921500	---	923400	938300	927200	898300	846900	803000	760000
31	893700	---	948200	919000	---	918000	---	927800	---	844100	801900	---

07338900 BROKEN BOW LAKE NEAR BROKEN BOW, OK--Continued

MAX	932600	957900	1099000	1037000	947400	980300	946000	999700	919500	897700	845000	801000
MIN	893700	882400	918400	919000	914400	914400	911400	913100	898300	844100	801900	760000
(‡)	599.77	600.84	601.60	599.56	600.72	599.49	600.92	600.18	598.10	594.15	590.97	587.71
(‡‡)	-48,500	+43,500	+11,000	-29,200	+16,500	-17,500	+20,300	-10,500	-29,500	-54,200	-42,200	-41,900

CAL YR 1992 MAX 1099000 MIN 879500 (‡‡) -182,000
WTR YR 1993 MAX 1099000 MIN 760000 (‡‡) -29,000

(‡) ELEVATION, IN FEET, AT END OF MONTH
(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET



07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK

LOCATION.--Lat 34°02'30", long 94°37'11", in SE 1/4 SE 1/4 sec.7, T.6 S., R.26 E., McCurtain County, Hydrologic Unit 11140108, on right downstream bank on U.S. Highway 70, 2.0 mi west of Eagletown, 10.7 mi downstream from Broken Bow Dam, and at mile 8.9.

DRAINAGE AREA.--787 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1924 to December 1925, October 1929 to current year. Published as Mountain Fork River near Broken Bow 1924-25 and as Mountain Fork River near Eagletown 1929-60. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1211: Drainage area. WSP 1241: 1924-26, 1930 (M), 1936-37 (M), 1938, 1939 (M) 1942 (M).

GAGE.--Water-stage recorder. Datum of gage is 333.87 ft above sea level. See WSP 1920 for history of changes prior to July 23, 1950.

REMARKS.--No estimated daily discharge. Records good. Flow completely regulated except for 33 mi^2 intervening area, since October 1968 by Broken Bow Lake (station 07338900). U.S. Army Corps of Engineers' satellite telemeter at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Aug. 18-19, 1915, reached a stage of 26.4 ft, from information provided by local resident, discharge, 92,500 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4850	123	3660	2580	1900	2570	2080	3460	3130	868	886	467
2	5960	157	3440	2140	956	1170	1320	3440	3210	765	382	299
3	3100	1260	1670	2500	746	2330	659	3670	2220	590	638	599
4	1490	551	2230	3670	468	3270	189	3270	890	359	762	659
5	2240	637	975	659	126	3040	1560	2920	578	209	1090	1020
6	1540	778	1560	650	371	3040	1400	4030	197	391	629	918
7	873	857	981	5780	104	3090	292	4420	682	198	584	716
8	911	115	2190	7710	111	3450	155	1500	751	489	351	460
9	428	92	2690	7760	474	3160	596	582	248	429	538	427
10	338	118	3230	7770	116	3070	546	1400	433	866	1100	689
11	129	106	3420	7780	421	3330	152	729	184	512	1180	583
12	193	249	2410	7850	1300	3410	317	3150	153	284	968	412
13	531	370	1560	7830	729	1370	974	4770	148	566	919	365
14	814	323	2720	7830	146	196	2050	5010	464	787	826	449
15	535	93	4560	7340	1030	1070	4300	5680	538	1100	488	263
16	240	82	872	3400	2510	3040	4750	5590	707	1360	839	441
17	222	111	371	3550	3000	577	2810	6760	804	873	1490	546
18	123	86	267	3920	5840	1710	993	7060	711	386	1280	675
19	578	144	3470	3120	4340	4310	1760	6310	665	367	1620	549
20	401	551	7800	2890	3870	1840	4110	3510	459	828	958	898
21	207	544	7650	2390	3890	408	4630	4630	381	823	485	1270
22	120	4000	7650	2400	4250	1160	3390	1550	1140	865	416	924
23	140	5180	7690	1290	2210	3140	2470	267	1380	879	350	1190
24	298	1690	7660	413	2270	4260	980	1840	858	888	528	1140
25	118	3920	7670	1380	2310	6870	191	3550	569	925	474	926
26	113	4040	7670	3750	1540	6860	2950	4500	494	1070	372	630
27	118	3550	7630	2620	2820	3760	6810	4070	394	1180	829	896
28	139	3580	7860	3080	2160	3390	5320	4040	338	1350	483	2410
29	563	3650	7830	3680	---	4790	4300	1450	1080	1350	454	1630
30	275	3660	7860	2460	---	4220	3620	282	1150	1390	281	937
31	503	---	7710	1910	---	3580	---	165	---	1550	607	---
TOTAL	28090	40617	134956	122102	50008	91481	65674	103605	24956	24497	22807	23388
MEAN	906	1354	4353	3939	1786	2951	2189	3342	832	790	736	780
MAX	5960	5180	7860	7850	5840	6870	6810	7060	3210	1550	1620	2410
MIN	113	82	267	413	104	196	152	165	148	198	281	263
AC-FT	55720	80560	267700	242200	99190	181500	130300	205500	49500	48590	45240	46390

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	607	1257	1971	1751	1846	2155	2267	2284	1759	881	713	625
MAX	1965	6897	5203	5121	4159	4123	4976	7264	6061	2645	1515	2300
(WY)	1975	1985	1985	1988	1989	1973	1979	1991	1990	1983	1983	1992
MIN	136	168	154	199	292	423	306	357	219	155	238	155
(WY)	1989	1990	1990	1981	1981	1986	1980	1988	1988	1988	1985	1989

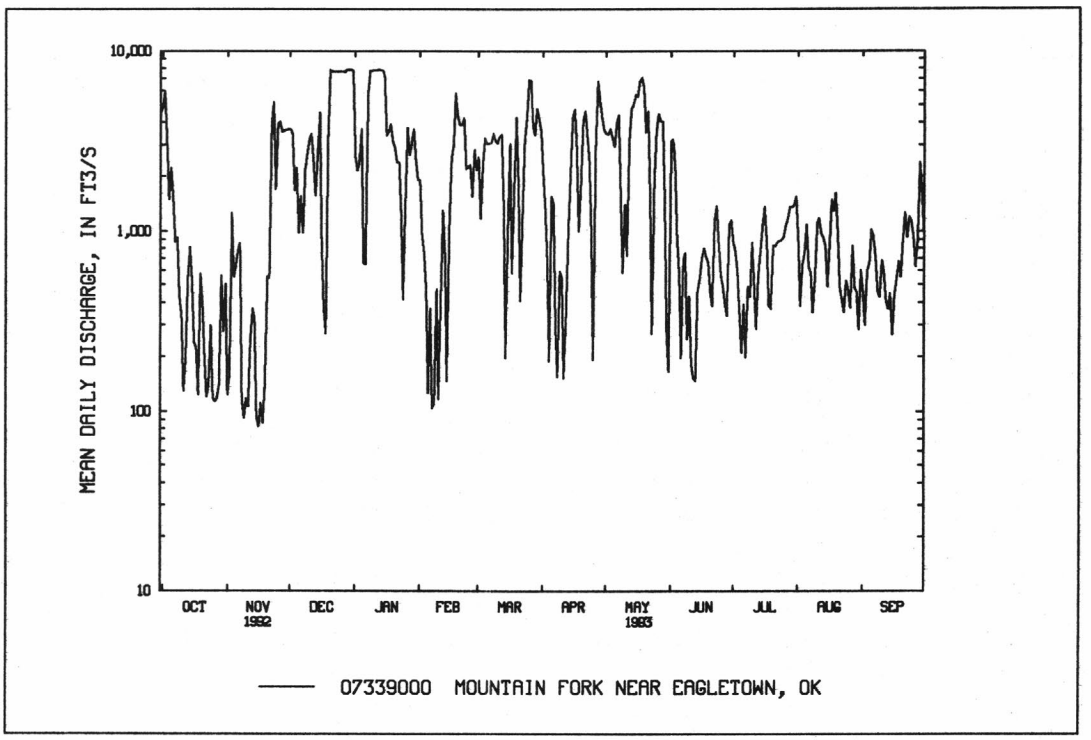
SUMMARY STATISTICS	1992 CALENDAR YEAR		1993 WATER YEAR		WATER YEARS 1970-93	
ANNUAL TOTAL	666632		732181			
ANNUAL MEAN	1821		2006		[a]1507	
HIGHEST ANNUAL MEAN					2468	1973
LOWEST ANNUAL MEAN					651	1976
HIGHEST DAILY MEAN	7860	Dec 28	7860	Dec 28	11500	May 19 1991
LOWEST DAILY MEAN	82	Nov 16	82	Nov 16	[b]16	Dec 12 1971
ANNUAL SEVEN-DAY MINIMUM	149	Oct 22	149	Oct 22	90	Oct 10 1969
INSTANTANEOUS PEAK FLOW			8390	Nov 25, Dec 14	[c]18200	Jun 2 1990
INSTANTANEOUS PEAK STAGE			7.75	Nov 25, Dec 14	[d]11.58	Jun 2 1990
ANNUAL RUNOFF (AC-FT)	1322000		1452000		1092000	
10 PERCENT EXCEEDS	4220		4780		4070	
50 PERCENT EXCEEDS	1000		1070		694	
90 PERCENT EXCEEDS	230		203		161	

[a]Prior to regulation by Broken Bow Lake, 1925, 1930-68, 1,291 ft^3/s.

[b]No flow in several years prior to regulation by Broken Bow Lake.

[c]Maximum discharge for period of record, 101,000 ft^3/s May 20, 1960, from rating curve extended above 65,000 ft^3/s.

[d]Maximum gage-height for period of record, 26.73 ft May 20, 1960.



07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948, 1955, 1961-1963, October 1992 to September 1993.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1947 to September 1948, November 1960 to September 1963.

WATER TEMPERATURE: October 1947 to September 1948, March to September 1955, November 1960 to September 1963, October 1992 to September 1993.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments. Data for Apr. 2-June 16 were obtained from the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum daily, 128 microsiemens Nov. 19, 1947; minimum daily, 21 microsiemens Jan. 1, 1948.

WATER TEMPERATURE: Maximum daily, 34.5°C July 29, 1955; minimum daily, 0.0°C several days in winter months.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum 25.5°C July 8, 9, Aug. 23; minimum 7.5°C March 14.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	19.5	18.0	19.0	13.0	12.5	13.0	10.5	10.0	10.0
2	---	---	---	18.5	17.0	18.0	13.0	12.0	12.5	10.0	10.0	10.0
3	---	---	---	18.5	17.0	18.0	12.5	11.5	12.0	10.5	10.0	10.0
4	---	---	---	17.0	15.5	16.5	13.0	12.0	12.5	13.0	10.5	11.5
5	---	---	---	---	---	---	12.5	11.0	12.0	11.0	10.0	10.5
6	---	---	---	---	---	---	11.5	11.0	11.0	11.0	10.0	10.5
7	---	---	---	---	---	---	11.5	11.0	11.0	11.0	10.0	10.0
8	---	---	---	---	---	---	11.5	11.0	11.5	10.0	10.0	10.0
9	---	---	---	---	---	---	11.5	10.5	11.0	10.0	10.0	10.0
10	---	---	---	---	---	---	12.0	11.0	11.5	10.0	10.0	10.0
11	---	---	---	---	---	---	12.0	11.0	11.5	10.0	10.0	10.0
12	---	---	---	---	---	---	11.5	11.0	11.5	10.0	9.5	10.0
13	---	---	---	---	---	---	11.5	11.0	11.0	10.0	9.5	9.5
14	---	---	---	---	---	---	11.5	11.0	11.0	9.5	9.5	9.5
15	---	---	---	---	---	---	11.5	11.0	11.0	10.0	9.5	9.5
16	19.5	19.0	19.5	---	---	---	11.0	10.5	11.0	10.0	9.5	9.5
17	19.0	18.0	18.0	---	---	---	11.0	10.0	10.5	10.0	9.0	9.5
18	19.5	17.0	18.0	---	---	---	10.0	9.0	9.5	10.0	9.5	9.5
19	18.5	17.0	18.0	---	---	---	11.0	10.0	10.5	9.5	9.0	9.0
20	18.5	17.0	17.5	---	---	---	11.0	11.0	11.0	9.0	9.0	9.0
21	19.5	18.0	18.5	15.0	15.0	15.0	11.0	10.5	11.0	9.5	9.0	9.5
22	20.0	18.5	19.0	15.0	14.5	14.5	11.0	10.5	11.0	10.0	9.0	9.5
23	20.0	18.5	19.0	15.0	14.5	15.0	11.0	10.5	11.0	10.5	9.5	10.0
24	20.0	18.5	19.5	14.5	14.0	14.5	11.0	10.5	11.0	10.0	9.0	9.5
25	20.5	19.0	19.5	14.0	13.5	14.0	10.5	10.5	10.5	9.5	8.5	9.0
26	20.5	18.5	19.5	14.0	13.5	13.5	10.5	10.5	10.5	9.5	8.5	9.0
27	20.5	19.0	20.0	13.5	13.0	13.5	10.5	10.5	10.5	10.0	9.0	9.0
28	20.0	19.0	19.5	13.5	13.0	13.0	10.5	10.5	10.5	9.5	9.0	9.0
29	19.5	19.0	19.5	13.5	12.5	13.0	11.0	10.5	10.5	9.5	9.0	9.5
30	20.0	18.5	19.0	13.5	12.5	13.0	11.0	10.5	10.5	10.0	8.5	9.0
31	19.5	18.5	19.0	---	---	---	10.5	10.5	10.5	10.0	8.5	9.0
MONTH	---	---	---	---	---	---	13.0	9.0	11.1	13.0	8.5	9.7

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

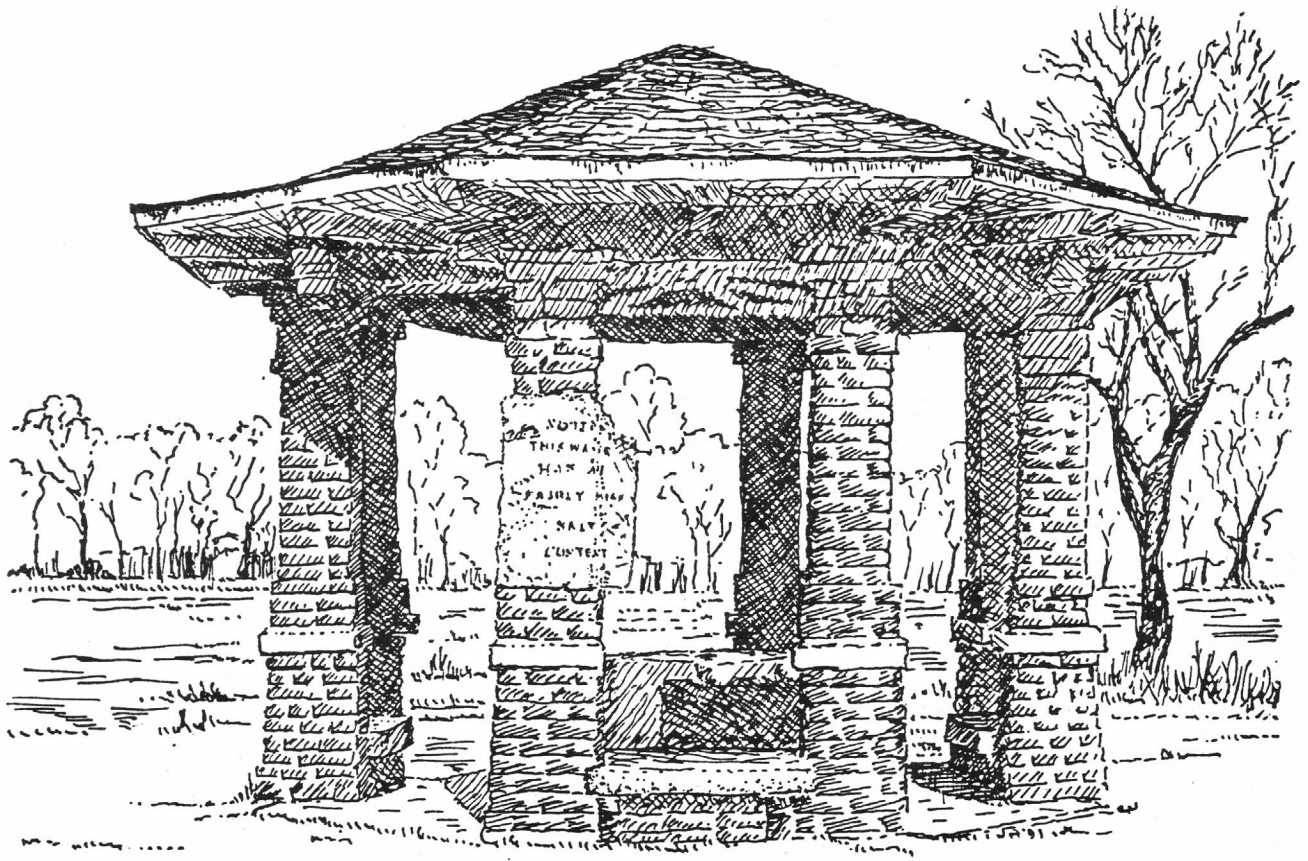
WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	FEBRUARY			MARCH			APRIL			MAY		
1	10.5	9.0	9.5	9.0	9.0	9.0	12.0	11.5	12.0	15.0	14.5	14.5
2	10.5	9.5	10.0	10.0	9.0	9.0	13.5	11.0	12.0	14.5	14.5	14.5
3	10.0	9.5	9.5	9.5	8.5	9.0	13.0	11.5	12.0	14.5	14.0	14.5
4	10.0	9.5	9.5	9.5	9.0	9.0	12.0	11.5	11.5	15.5	14.0	15.0
5	10.0	9.5	9.5	9.5	8.5	9.0	12.0	11.0	11.5	16.0	15.0	15.5
6	10.5	9.5	10.0	10.0	9.5	9.5	12.0	11.0	11.5	15.5	14.5	15.0
7	11.5	9.0	10.5	10.0	9.0	9.5	12.0	11.5	11.5	15.5	14.5	15.0
8	12.5	9.0	10.5	10.0	9.5	10.0	13.5	11.5	12.5	17.0	14.5	15.5
9	11.5	9.5	10.5	10.5	10.0	10.0	15.0	12.0	13.5	16.5	16.0	16.5
10	11.0	10.5	11.0	10.5	9.5	10.0	16.0	12.0	14.0	18.0	16.0	17.0
11	11.5	10.0	10.5	10.0	10.0	10.0	18.5	15.0	16.5	17.0	16.5	17.0
12	10.5	9.5	10.0	10.0	9.5	10.0	18.0	16.0	17.0	16.5	16.0	16.5
13	10.5	9.0	9.5	10.0	8.5	9.0	16.5	14.0	15.5	16.5	15.5	16.0
14	10.5	9.5	10.0	10.5	7.5	9.0	14.0	12.0	13.5	16.5	15.5	16.0
15	10.0	9.0	9.5	9.5	8.5	8.5	12.0	11.5	12.0	16.5	16.0	16.5
16	9.5	8.5	9.0	10.5	9.0	9.5	13.0	11.5	12.5	16.5	15.5	16.0
17	9.0	8.5	9.0	---	---	---	13.0	12.0	12.5	16.5	15.5	16.5
18	9.0	8.5	9.0	---	---	---	15.0	12.0	13.5	17.0	15.5	16.0
19	9.0	8.5	8.5	---	---	---	15.0	13.5	14.5	18.0	15.5	16.5
20	9.0	8.5	9.0	11.0	9.0	10.0	13.5	11.5	12.0	18.0	17.0	17.5
21	10.0	9.0	9.5	11.0	10.5	11.0	14.0	13.0	13.5	17.5	16.0	17.0
22	9.5	9.0	9.0	---	---	---	14.5	13.0	13.5	18.5	16.0	17.0
23	10.0	8.5	9.0	---	---	---	14.5	13.5	13.5	18.5	17.0	17.5
24	9.0	8.5	9.0	11.0	10.0	10.5	15.0	13.5	14.0	19.0	16.5	18.0
25	9.0	8.5	8.5	11.0	10.0	10.5	15.5	14.5	15.0	18.5	16.0	17.0
26	9.5	8.0	8.5	12.0	10.5	11.0	15.5	14.5	15.0	18.5	17.0	18.0
27	9.0	8.5	9.0	12.0	11.0	11.5	15.0	13.5	14.0	18.0	17.0	17.5
28	9.5	9.0	9.0	12.0	11.5	11.5	14.5	13.5	14.0	18.0	17.0	17.5
29	---	---	---	11.5	11.0	11.5	14.5	14.0	14.0	19.0	17.0	18.0
30	---	---	---	11.5	11.0	11.0	15.0	14.0	14.5	20.5	18.0	19.0
31	---	---	---	11.5	10.5	11.0	---	---	---	22.0	20.0	21.0
MONTH	12.5	8.0	9.5	---	---	---	18.5	11.0	13.4	22.0	14.0	16.6

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	JUNE			JULY			AUGUST			SEPTEMBER		
1	21.0	18.5	19.5	21.5	18.0	19.5	21.0	18.5	19.5	25.0	22.0	23.5
2	19.0	18.0	18.0	22.0	17.5	20.0	22.5	20.0	21.0	24.5	23.0	24.0
3	18.5	18.0	18.0	22.5	19.0	20.5	22.5	20.0	21.0	24.5	22.0	23.0
4	19.5	17.0	18.0	23.0	18.5	20.5	21.5	20.0	20.5	23.5	21.0	22.5
5	19.5	18.0	18.5	23.5	22.0	22.5	21.5	19.5	20.0	23.0	20.0	21.5
6	21.5	19.0	20.0	25.0	21.0	23.0	20.5	19.5	20.0	22.0	19.5	20.5
7	22.0	20.0	20.5	25.0	23.0	24.0	21.0	19.5	20.0	22.0	19.5	20.5
8	20.0	18.5	19.0	25.5	22.0	24.0	---	---	---	21.0	19.5	20.0
9	21.5	19.0	20.0	25.5	22.5	24.0	---	---	---	22.0	20.0	21.0
10	---	---	---	24.0	20.5	22.5	23.0	20.0	21.5	22.0	20.0	21.0
11	---	---	---	24.0	20.5	22.0	23.0	20.0	21.0	22.5	20.0	21.0
12	---	---	---	25.0	22.5	23.5	23.0	20.5	21.5	23.0	20.5	21.5
13	---	---	---	24.0	21.0	23.0	23.0	20.5	21.5	23.0	21.0	22.5
14	24.0	20.5	22.0	23.5	20.5	21.5	23.0	20.5	21.5	22.0	20.5	21.5
15	23.5	20.5	22.0	23.0	20.0	21.0	24.0	20.5	22.5	22.0	19.0	20.5
16	23.5	20.0	22.0	21.5	19.0	20.0	24.0	22.0	23.5	21.0	19.5	20.0
17	22.0	18.5	20.5	---	---	---	23.5	20.5	21.5	21.0	18.5	19.5
18	21.5	18.0	19.5	---	---	---	23.0	20.0	21.0	21.5	18.5	20.0
19	19.5	18.5	19.0	24.5	22.0	23.0	23.5	20.5	21.5	22.0	19.5	20.5
20	19.5	18.0	19.0	24.0	20.5	22.0	23.0	21.0	22.0	23.0	20.5	21.5
21	20.0	19.5	19.5	23.0	19.0	21.0	24.0	20.5	22.5	23.0	21.0	21.5
22	21.5	19.0	20.0	22.5	19.0	21.0	24.5	21.0	23.0	23.0	21.0	21.5
23	19.5	18.0	18.5	23.0	19.0	21.0	25.5	23.0	24.0	23.0	21.0	22.0
24	20.0	18.0	19.0	23.0	19.5	21.0	25.0	22.5	23.5	23.0	21.0	22.0
25	19.5	18.5	19.0	22.5	19.5	20.5	25.0	22.0	23.0	22.0	21.5	21.5
26	21.5	18.5	19.5	22.5	19.0	20.0	25.0	22.5	24.0	22.0	20.5	21.5
27	22.0	19.5	20.5	22.0	19.0	20.0	24.5	22.0	23.0	21.5	20.0	20.5
28	23.5	21.0	22.0	22.0	19.0	20.0	24.5	21.5	23.0	21.5	19.5	20.5
29	22.0	19.0	21.0	20.5	19.0	19.5	24.5	21.0	23.0	22.0	20.0	21.0
30	21.5	18.5	19.5	21.5	18.5	19.5	24.5	23.0	24.0	22.0	20.0	21.0
31	---	---	---	21.0	18.5	19.5	24.5	23.0	23.5	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	25.0	18.5	21.3



Pavilion at Mineral Wells Park, Guthrie, Oklahoma

As the number of streams on which streamflow information is likely to be desired far exceeds the number of stream-gaging stations feasible to operate at one time, the Geological Survey collects limited streamflow data at sites other than stream-gaging stations. When limited streamflow data are collected on a systematic basis over a period of years for use in hydrologic analyses, the site at which the data are collected is called a partial-record station. Data collected at these partial-record stations are usable in low-flow or floodflow analyses, depending on the type of data collected. In addition, discharge measurements are made at other sites not included in the partial-record program. These measurements are generally made in times of drought or flood to give better areal coverage to those events. Those measurements and others collected for some special reason are called measurements at miscellaneous sites.

Miscellaneous Sites

Discharge measurements in the following table were made at special study and miscellaneous sites throughout the state.

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements: Date	Measurements: Discharge (ft^3/s)
		RED RIVER BASIN				
07327055	Stinking Creek near Dutton, OK.	Lat 35°11'21", long 98°07'35", in NE 1/4 sec.10, T.8 N., R.9 W., Caddo County, Hydrologic Unit 11130302, on downstream side of county road bridge, 2 mi southwest of Dutton and 4.5 mi north of Lake Chickasha.	22.1	1991-93	10/16/92 12/11/92 02/08/93 04/09/93 06/06/93 07/28/93	1.9 9.8 7.6 7.7 6.7 1.8
07327065	Spring Creek near Verden, OK.	Lat 35°07'00", long 98°07'24", in NW 1/4, NW 1/4 sec.2, T.7 N., R.9 W., Caddo County, Hydrologic Unit 11130302, 3.0 mi northwest of Verden.	76.1	1991-93	10/19/92 12/11/92 02/09/93 04/08/93 06/02/93 07/27/93	0.85 14 39 39 44 41
07328560	Washington Creek Tributary near Pauls Valley, OK.	Lat 34°49'33", long 97°13'23", in NE 1/4, NW 1/4 sec.17, T.4 N., R.1 E., Garvin County, Hydrologic Unit 11130303, on left downstream end of culvert on paved county road, 4 mi north of Pauls Valley Lake and 7 mi north of Pauls Valley.	2.1	1991-93	10/13/92 12/17/92 02/25/93 04/21/93 06/17/93 08/11/93	0.05 8.3 12 1.6 0.32 .01

Discharge measurements in the following table were made at miscellaneous sites in the Oklahoma Springs Project.

SITE-ID	LOCAL WELL NUMBER	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	NAME OF SPRING	DATE DISCHARGE MEASURED	DISCHARGE (GPM)
334332097082701	09S-02E-31 CCB 1	334332	0970827	BROWN'S SPRING	06-24-92	45
341012096084701	04S-11E-33 AAD 1	341012	0960847	STUART SPRING	06-24-92	.01
341125096180101	04S-10E-19 CBC 1	341125	0961801	MAYTUBBY SPRINGS	08-26-92	.66
341319095464701	04S-14E-12 ADD 1	341319	0954647	CROSS SPRING 2	09-24-92	.26
341320095464801	04S-14E-12 ADA 1	341320	0954648	CROSS SPRING 1	09-24-92	1.0
341336096115101	04S-11E-07 BBC 1	341336	0961151	MCHENRY SPRING	06-24-92	18
341342095511801	04S-14E-08 ABA 1	341342	0955118	SANDY SPRING	09-16-92	15
341451096083201	03S-11E-34 CAC 1	341451	0960832	LEWIS SPRINGS	09-15-92	3.0
341640096223001	03S-09E-20 DAD 1	341640	0962230	GIBSON SPRING	09-17-92	14
341642096223001	03S-09E-20 DAD 2	341642	0962230	CATFISH POND SPRINGS	09-17-92	50

SITE-ID	LOCAL WELL NUMBER	LATITUDE (DEGREES)	LONGITUDE (DEGREES)	NAME OF SPRING	DATE DISCHARGE MEASURED	DISCHARGE (GPM)
341644095480401	03S-14E-23 CAB 1	341644	0954804	CANNON SPRING 2	09-24-92	.45
341806095484201	03S-14E-10 DDC 1	341806	0954842	BAKER SPRING	09-23-92	.06
342033097170401	02S-01W-34 ABD 1	342033	0971704	WOODFORD SPRING	06-24-92	.90
342116096394601	02S-06E-27 BDD 1	342116	0963946	WOLF SPRING	06-24-92	64
342123096105801	02S-11E-30 ADB 1	342123	0961058	CARR SPRING 1	08-28-92	.45
342147096393901	02S-06E-22 DCB 1	342147	0963939	THREE SPRINGS	06-24-92	299
342150096284002	02S-08E-21 CCB 2	342150	0962840	SEVEN SPRINGS 2	06-24-92	50
342152096284001	02S-08E-21 CCB 3	342152	0962840	LANEY SPRING 1	06-24-92	23
342404096192401	02S-09E-11 AAC 1	342404	0961924	SHEFFIELD SPRING	09-02-92	14
342411096350101	02S-07E-09 BBB 1	342411	0963501	DEADMANS SPRING	06-23-92	47
342413096192401	02S-09E-11 AAB 1	342413	0961924	UNNAMED SPRING	09-02-92	9.0
342415096190301	02S-09E-01 CCD 1	342415	0961903	MCININCH SPRING	08-26-92	4.5
342511097064501	01S-02E-32 DCD 1	342511	0970645	DEVILS BATHTUB SPRING	06-24-92	1350
342657096151701	01S-10E-21 DCD 4	342657	0961517	LEHIGH SPRING	06-24-92	3.5
342730096562701	01S-03E-24 ACB 1	342730	0965627	LOWRANCE SPRING 2	08-20-92	233
342842097174701	01S-01W-10 CCD 1	342842	0971747	FIVE-MILE SPRING	08-21-92	22
342852097185601	01S-01W-09 CCB 1	342852	0971856	WASHBURN SPRING	08-21-92	45
342941096583101	01S-03E-03 DCB 1	342941	0965831	RAVINE SPRING	08-20-92	45
343238096015701	01N-12E-22 BDD 1	343238	0960157	PENITENTIARY SPRING	09-03-92	40
343424095572701	01N-13E-08 ACD 1	343424	0955727	MCENTIRE SPRING	08-27-92	.45
354541094504501	15N-23E-22 DAB 1	354541	0945045	JANETTE SPRING	08-17-93	31

BEAVER COUNTY

WELL-IDENTIFICATION NUMBER.--363853100311001. Local number 02N-24E-07 CCD 1.

LOCATION.--Lat 36°38'47", long 100°31'15" (revised), Hydrologic Unit 11100201, 2 mi north of Elmwood.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled stock well, diameter 6 in., depth 95 ft.

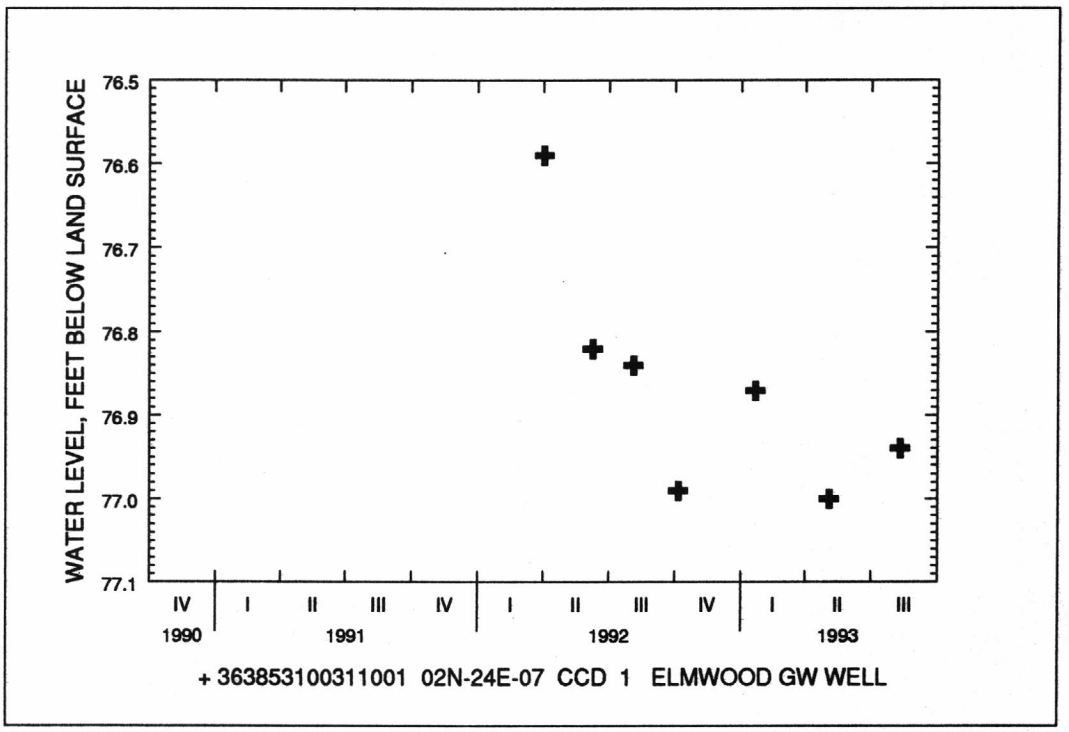
DATUM.--Altitude of land-surface datum is 2,625 ft. Measuring point: highest point on north side of casing .50 ft above land-surface datum.

PERIOD OF RECORD.--1946, 1967-90, 1992 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 71.96 below land-surface datum, Jan. 12, 1971; lowest water level, 77.98 ft below land-surface datum, July 26, 1979.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL
Oct. 7, 1992	76.99
Jan. 22, 1993	76.87
May 5, 1993	77.00
Aug. 11, 1993	76.94

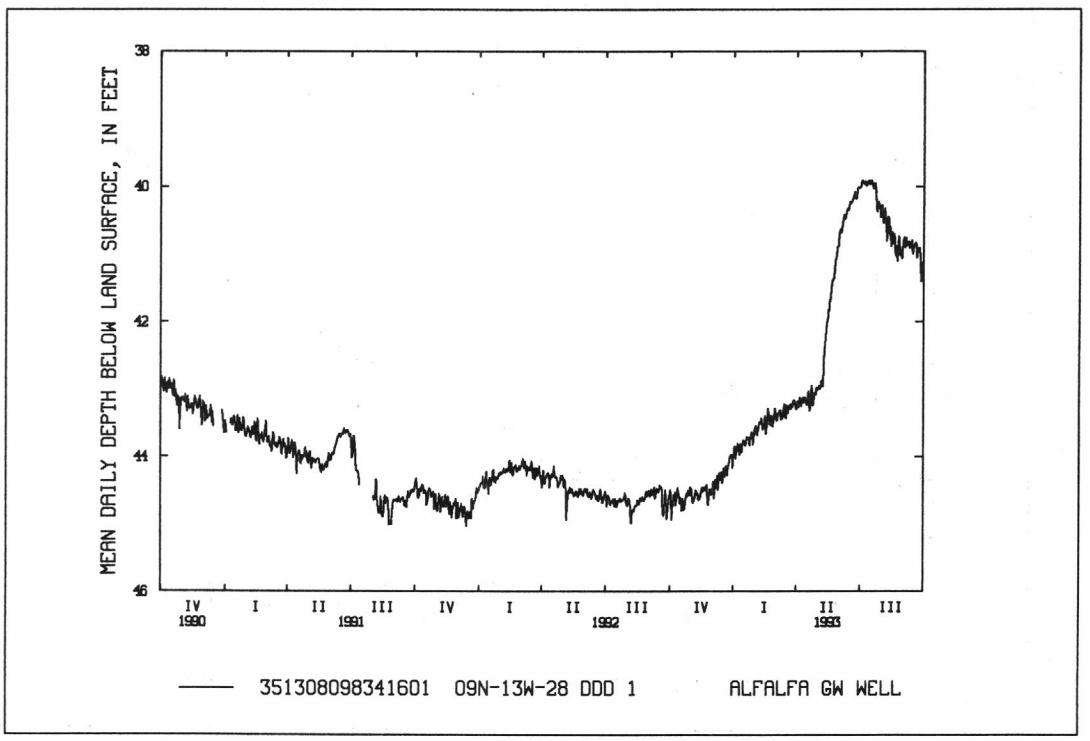


CADDO COUNTY

WELL-IDENTIFICATION NUMBER.--351308098341601. Local number 09N-13W-28 DDD 1.
LOCATION.--Lat 35°13'08", long 098°34'16", Hydrologic Unit 11130302, 2.0 mi east of Alfalfa.
AQUIFER.--Rush Springs Formation.
WELL CHARACTERISTICS.--Drilled well, diameter 8 in., depth 335 ft.
DATUM.--Altitude of land-surface datum is 1,440 ft. Measuring point: top of casing 1.00 ft above land-surface datum.
PERIOD OF RECORD.--1948 to current year.
REVISED RECORDS.--WDR OK-91-1: 1985 (L).
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 34.71 ft below land-surface datum, Aug. 1, 13, 1949; lowest water level, 52.69 ft below land-surface datum, Apr. 5, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	44.75	44.63	44.51	43.95	43.60	43.42	43.19	43.00	40.63	39.94	40.32	40.76
10	44.72	44.57	44.50	43.97	43.42	43.45	43.12	42.75	40.45	39.98	40.45	40.92
15	44.57	44.58	44.22	43.76	43.39	43.22	43.20	42.01	40.30	39.94	40.79	40.96
20	44.62	44.45	44.29	43.70	43.28	43.36	43.32	41.66	40.19	40.04	40.98	41.06
25	44.57	44.68	44.13	43.73	43.42	43.28	43.24	41.34	40.19	40.38	40.75	41.01
EOM	44.45	44.56	44.16	43.60	43.42	43.26	42.97	40.89	40.02	40.38	40.91	41.02
MAX	44.93	44.70	44.62	44.03	43.68	43.47	43.32	43.01	40.72	40.46	41.11	41.41
MIN	44.45	44.42	43.97	43.60	43.28	43.16	42.94	40.89	40.01	39.91	40.27	40.75

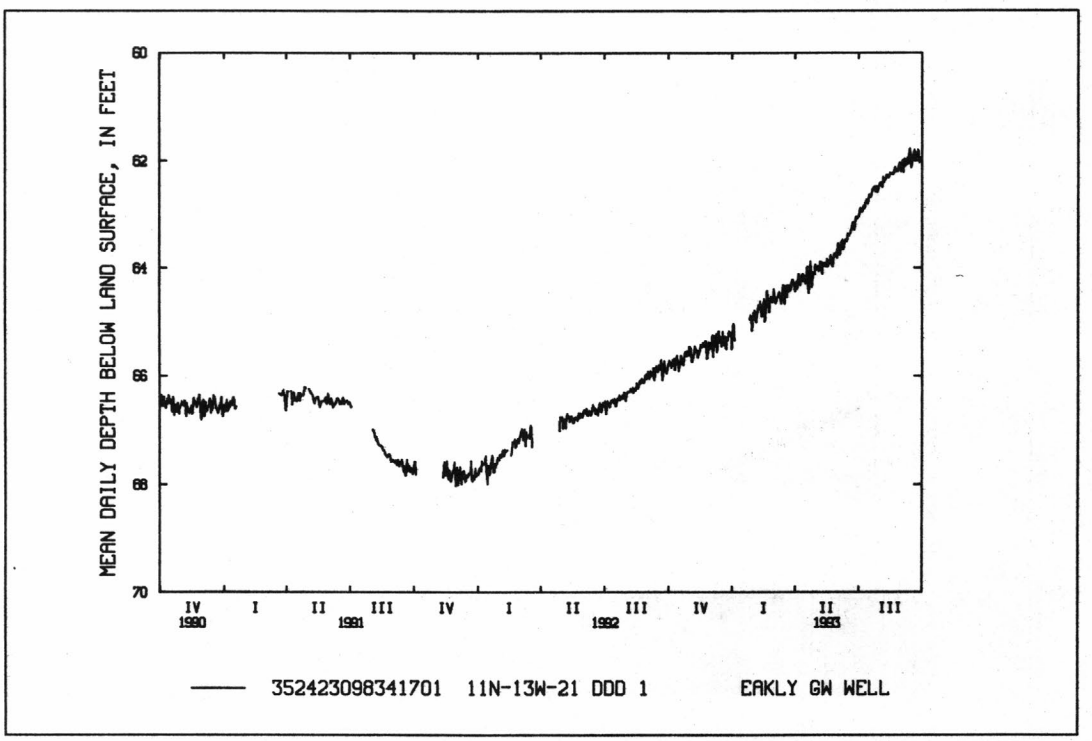


CADDO COUNTY--Continued

WELL-IDENTIFICATION NUMBER.--352423098341701. Local number 11N-13W-21 DDD 1.
LOCATION.--Lat 35°24'23", long 098°34'17", Hydrologic Unit, 11130302, 7 mi north of Eakly.
AQUIFER.--Rush Springs Formation.
WELL CHARACTERISTICS.--Unused industrial well, diameter 5 in., depth 210 ft.
DATUM.--Altitude of land-surface datum is 1,610 ft. Measuring point: instrument shelf 2.75 ft above land-surface datum.
PERIOD OF RECORD.--1965 to 1981, 1983 to current year.
REVISED RECORDS.--WDR OK-91-1: 1985 (L). 1987.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 54.49 ft below land-surface datum, Feb. 17, 1966; lowest water level, 75.94 ft below land-surface datum, Nov. 21, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	65.85	65.63	65.46	---	64.89	64.62	64.23	64.07	63.71	62.96	62.30	61.96
10	65.89	65.56	65.56	---	64.62	64.56	64.13	64.10	63.61	62.86	62.27	62.06
15	65.80	65.52	65.26	---	64.58	64.31	64.26	63.90	63.41	62.72	62.23	62.07
20	65.69	65.38	65.44	---	64.43	64.55	64.47	63.91	63.30	62.58	62.24	61.98
25	65.55	65.68	65.33	64.95	64.55	64.43	64.36	63.98	63.29	62.58	62.20	61.83
EOM	65.45	65.48	65.51	64.84	64.61	64.37	63.94	63.81	63.06	62.44	62.20	61.81
MAX	65.92	65.74	65.65	---	65.01	64.67	64.47	64.10	63.75	63.04	62.50	62.22
MIN	65.45	65.35	65.17	---	64.43	64.22	63.88	63.70	63.05	62.44	62.02	61.77

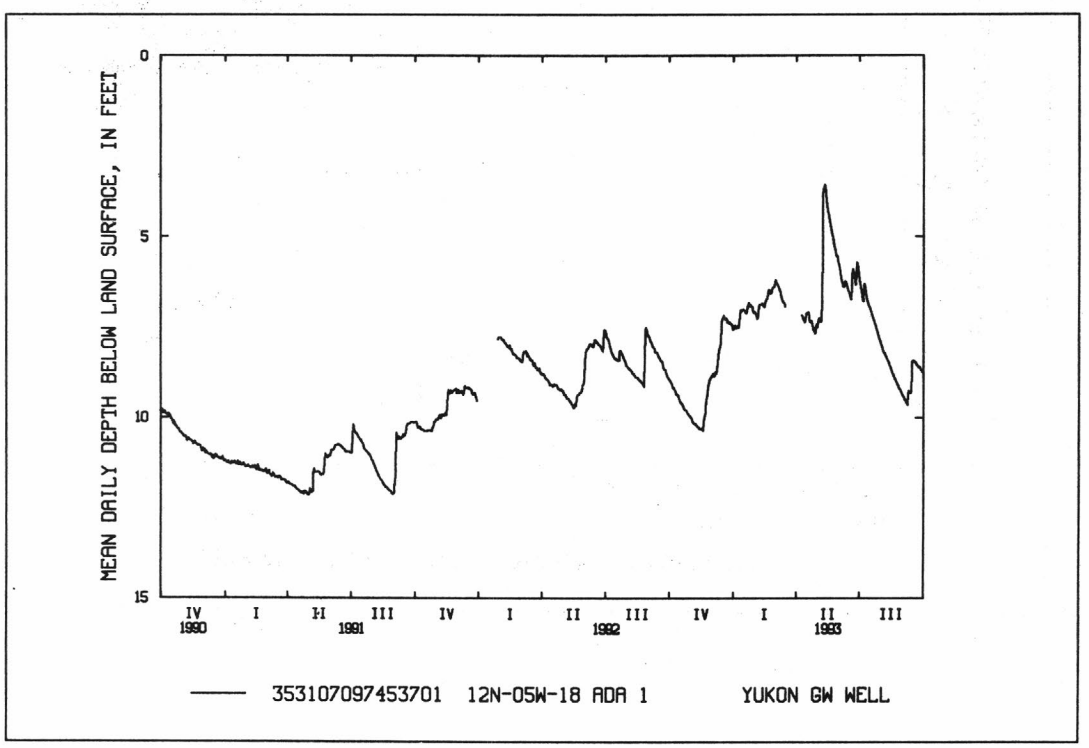


CANADIAN COUNTY

WELL-IDENTIFICATION NUMBER.--353107097453701. Local number 12N-05W-18 ADA 1.
LOCATION.--Lat 35°31'07", long 097°45'37", Hydrologic Unit 11100301, 0.5 mi northwest of Yukon.
AQUIFER.--Terrace, low, deposits.
WELL CHARACTERISTICS.--Drilled abandoned city well, diameter 12 in., depth 47.2 ft.
DATUM.--Altitude of land-surface datum 1,270 ft. Measuring point: top west edge of casing 0.80 ft above land-surface datum.
PERIOD OF RECORD.--1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 2.36 ft below land-surface datum, May 28, 1987: lowest water level, 15.31 ft below land-surface datum, Oct. 6, 1981.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.15	10.16	8.83	7.53	7.17	6.33	---	7.32	6.21	6.69	8.22	9.56
10	9.35	10.26	8.29	7.16	6.86	6.64	7.21	3.69	6.23	6.57	8.42	9.33
15	9.51	10.33	7.29	7.01	6.84	6.85	7.13	4.15	6.50	6.94	8.67	8.43
20	9.67	9.96	7.28	7.05	6.46	---	7.31	4.71	6.05	7.24	8.93	8.55
25	9.81	9.22	7.38	6.90	6.44	---	7.56	5.23	6.33	7.56	9.14	8.61
EOM	9.97	8.88	7.56	7.08	6.38	---	7.44	5.69	6.08	7.94	9.40	8.76
MAX	9.98	10.36	8.86	7.54	7.27	---	---	7.49	6.75	7.94	9.40	9.65
MIN	8.97	8.88	7.19	6.83	6.38	---	---	3.58	5.69	6.22	8.00	8.43



CIMARRON COUNTY

WELL-IDENTIFICATION NUMBER.--364450102190001. Local number 03N-07E-09 BBB 1.

LOCATION.--Lat 36°44'53", long 102°19'12" (revised), Hydrologic Unit 11100101, 6 mi southwest of Keys.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused stock well, diameter 6 in., depth 61 ft.

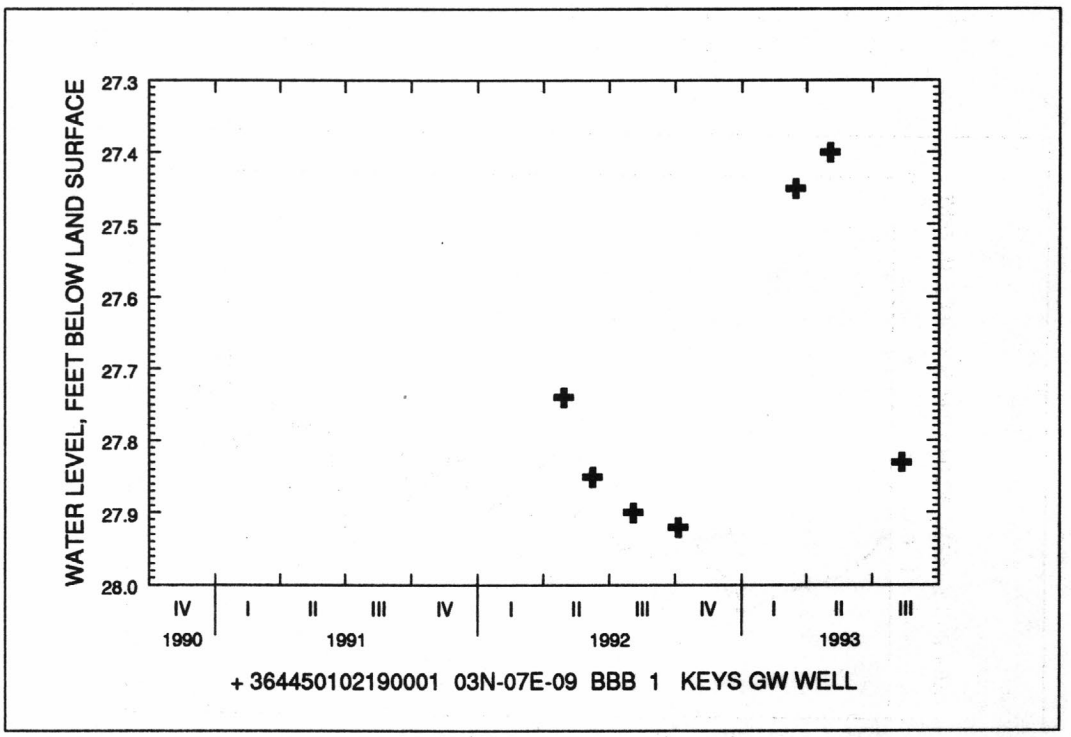
DATUM.--Altitude of land-surface datum is 3,965 ft. Measuring point: top of casing 3.50 ft above land-surface datum.

PERIOD OF RECORD.--1938-90, 1992 to present.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 25.41 ft below land-surface datum, Nov. 28, 1989; lowest water level, 46.38 ft below land-surface datum, July 19, 1938.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1991 TO SEPTEMBER 1992

DATE	WATER LEVEL
Oct. 6, 1992	27.92
Mar. 17, 1993	27.45
May 4, 1993	27.40
Aug. 11, 1993	27.83



COMANCHE COUNTY

WELL-IDENTIFICATION NUMBER.--343540098342001. Local number 01N-13W-04 BAA 1.

LOCATION.--Lat 34°35'36", long 098°34'22", Hydrologic Unit 11130203, 4 mi southeast of Cache.

AQUIFER.--Lower Arbuckle Group.

WELL CHARACTERISTICS.--Test well, diameter 6 in., depth 997 ft.

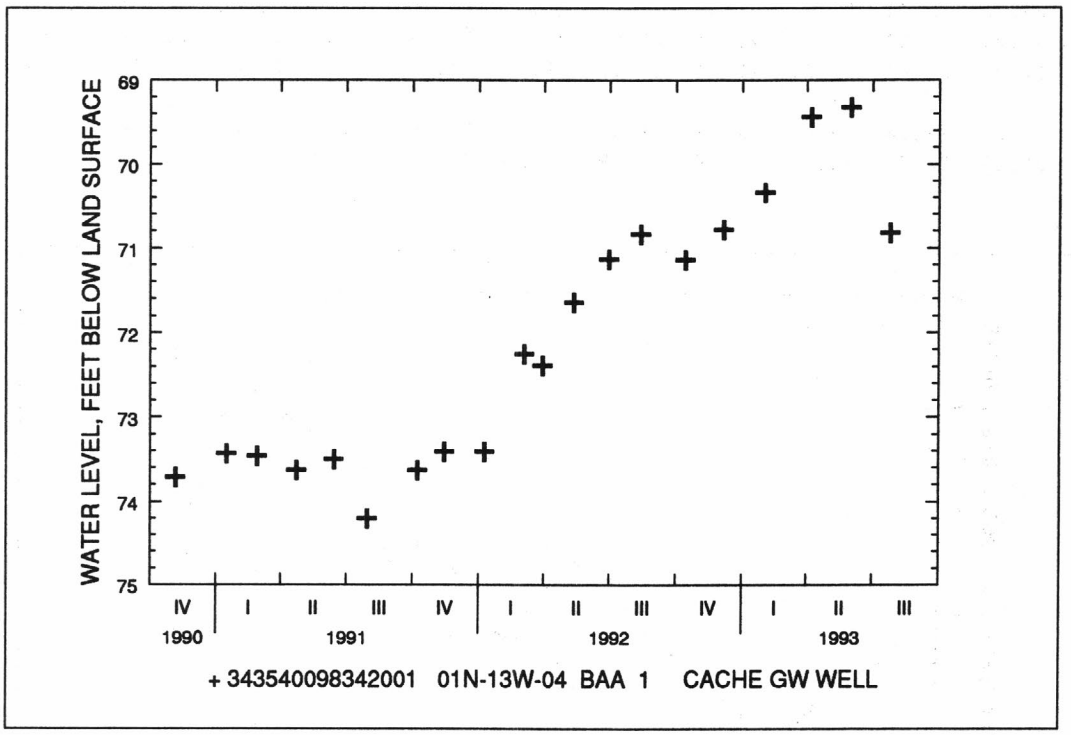
DATUM.--Altitude of land-surface datum is 1,200 ft. Measuring point: top of casing 1.8 ft above land-surface datum.

PERIOD OF RECORD.--1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 69.33 ft below land-surface datum, June 1, 1993; lowest water level, 88.62 ft below land-surface datum, May 10, 1972.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 14, 1992	71.14	Apr. 7, 1993	69.44
Dec. 7, 1992	70.78	June 1, 1993	69.33
Feb. 2, 1993	70.34	July 26, 1993	70.82

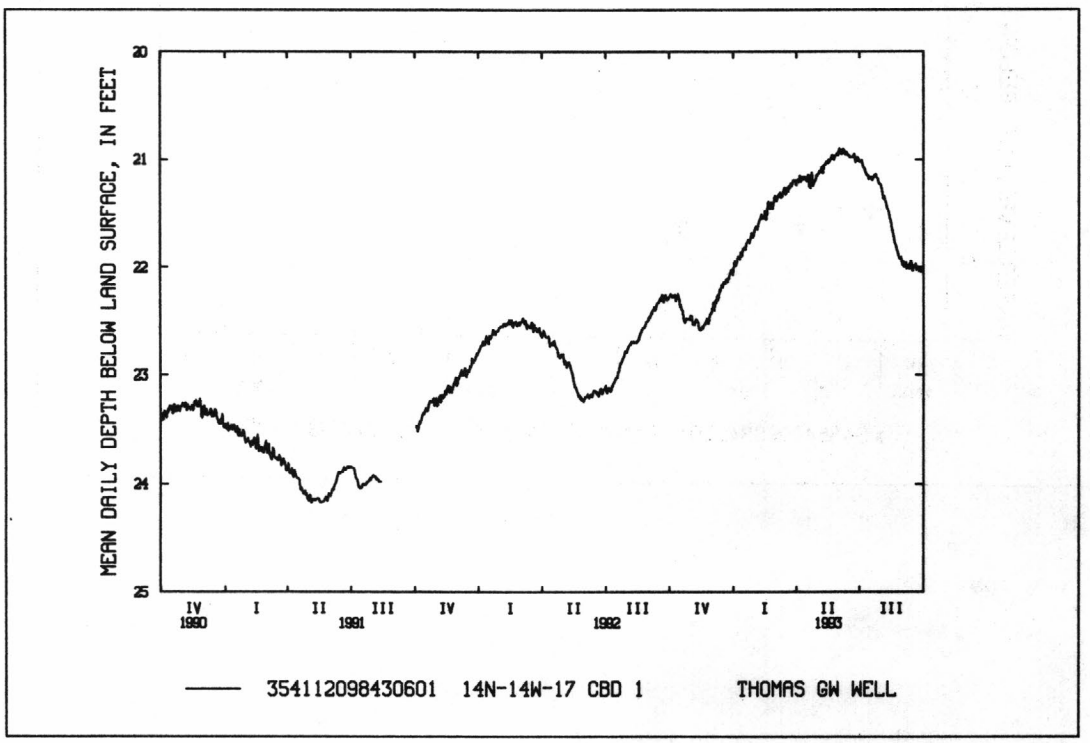


CUSTER COUNTY

WELL-IDENTIFICATION NUMBER.--354112098430601. Local number 14N-14W-17 CBD 1.
LOCATION.--Lat 35°41'12", long 098°43'06", Hydrologic Unit 11090201, 4 mi south of Thomas.
AQUIFER.--Rush Springs Formation.
WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 16 in., depth 320 ft.
DATUM.--Altitude of land-surface datum is 1,685 ft. Measuring point: shelter base 2.26 ft above land-surface datum.
REMARKS.--Digital recorder installed May 20, 1981, mean-daily water levels published thereafter. Recorder removed Oct. 7, 1993.
PERIOD OF RECORD.--1971 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 20.88 ft below land-surface datum, June 1, 2, 8, 1993; lowest water level, 30.08 ft below land-surface datum Sept. 10, 1972.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	22.28	22.53	22.36	21.97	21.62	21.36	21.19	21.12	20.95	21.04	21.35	21.96
10	22.30	22.50	22.30	21.93	21.51	21.36	21.16	21.09	20.95	21.13	21.46	22.02
15	22.30	22.58	22.16	21.83	21.48	21.26	21.18	21.02	20.96	21.17	21.60	22.03
20	22.42	22.53	22.15	21.77	21.39	21.30	21.25	21.00	20.98	21.17	21.78	22.02
25	22.47	22.52	22.11	21.74	21.42	21.25	21.24	21.00	21.02	21.17	21.88	22.00
EOM	22.44	22.42	22.07	21.66	21.39	21.21	21.15	20.96	21.01	21.24	21.97	21.99
MAX	22.51	22.58	22.40	22.02	21.65	21.38	21.26	21.15	21.02	21.24	21.97	22.05
MIN	22.25	22.42	22.02	21.66	21.39	21.19	21.12	20.94	20.90	21.01	21.26	21.94

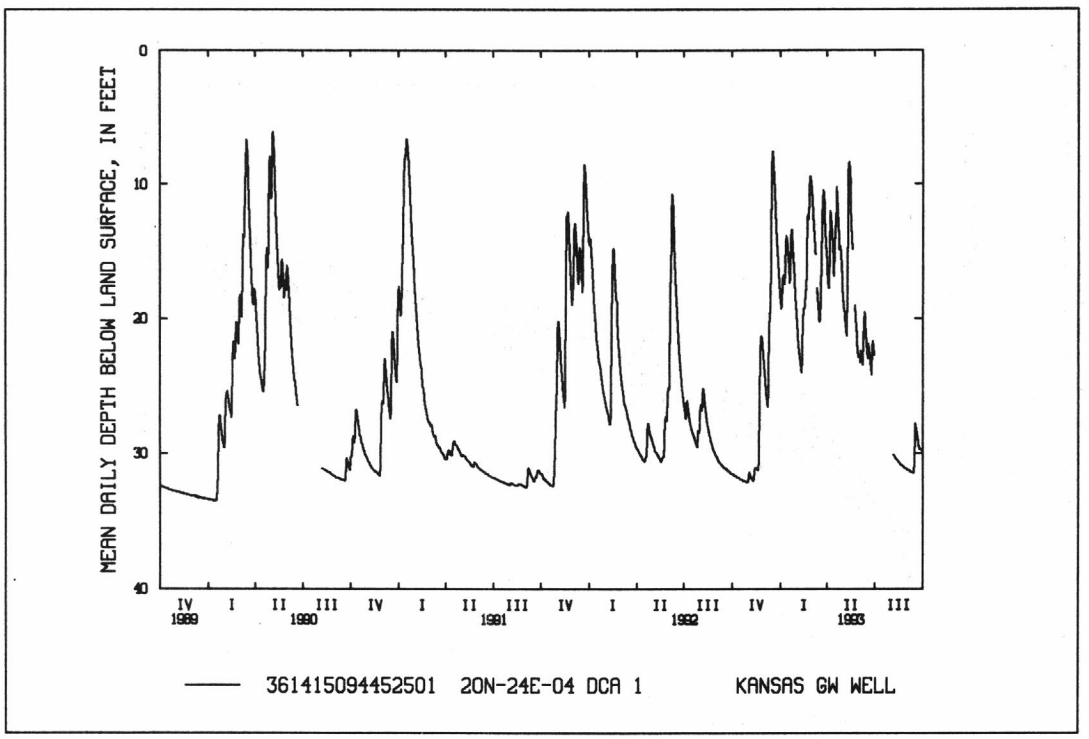


DELAWARE COUNTY

WELL-IDENTIFICATION NUMBER.--361415094452501. Local Number, 20N-24E-04 DCA 1.
LOCATION.--Lat 36°14'07", long 094°45'13", Hydrologic Unit 11070209, 3.3 mi northeast of Kansas, OK.
AQUIFER.--Keokuk Limestone.
WELL CHARACTERISTICS.--Drilled unused stock well, diameter 6 in., depth 38 ft.
DATUM.--Altitude of land-surface datum is 1,150 ft. Measuring point: top of casing 1.85 ft above land-surface datum.
PERIOD OF RECORD.--1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 5.92 ft below land-surface datum, May 5, 1990; lowest, 33.52 ft below land-surface datum, Jan. 12, 1990.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	31.64	31.66	25.72	17.34	22.13	12.52	14.59	19.88	22.58	---	30.11	31.29
10	31.75	31.98	22.43	16.00	23.86	---	13.68	11.74	20.32	---	30.40	31.45
15	31.84	31.07	10.64	14.73	19.25	19.63	14.81	10.09	21.85	---	30.64	28.45
20	31.94	31.15	9.23	16.37	17.01	15.19	10.86	---	22.32	---	30.84	28.88
25	32.02	21.36	13.93	14.99	11.19	10.75	14.90	19.94	24.05	---	31.01	29.71
EOM	32.10	22.96	17.96	19.17	9.66	15.68	17.72	22.81	---	---	31.18	29.90
MAX	---	31.98	26.55	19.25	24.06	---	17.72	---	---	---	---	31.45
MIN	---	21.33	7.53	13.39	9.40	---	10.24	---	---	---	---	27.77

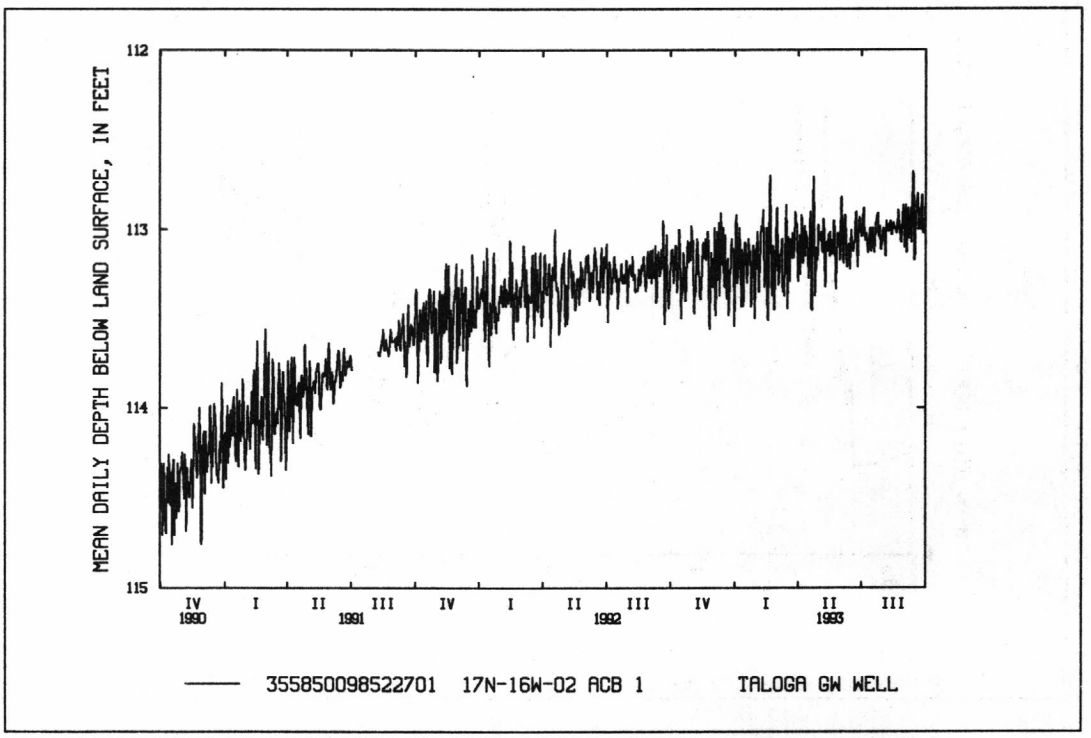


DEWEY COUNTY

WELL-IDENTIFICATION NUMBER.--355850098522701. Local number 17N-16W-02 ACB 1.
LOCATION.--Lat 35°58'50", long 98°52'27", Hydrologic Unit 11090201, 6.5 miles southeast of Taloga.
AQUIFER.--Rush Springs.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 240 ft.
DATUM.--Altitude of land-surface datum is 1,810 ft. Measuring point: shelter base 2.89 ft above land-surface datum.
REMARKS.--Digital recorder removed Oct. 7, 1993.
PERIOD OF RECORD.--April 1989 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 112.57 ft below land-surface datum, Feb. 20 and Sept. 30, 1993; lowest water level, 116.36 ft below land-surface datum, May 27, 1989.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	113.30	113.34	113.38	113.27	113.24	113.28	113.11	113.11	113.19	113.01	112.95	112.88
10	113.35	113.24	113.37	113.43	112.89	113.35	112.98	113.32	113.21	113.13	112.97	113.07
15	113.27	113.25	112.99	113.07	112.99	112.86	113.16	113.02	113.12	113.09	112.96	113.14
20	113.16	113.05	113.39	113.05	112.70	113.29	113.44	113.14	113.08	113.05	113.02	113.00
25	113.06	113.44	113.25	113.27	113.10	113.16	113.37	113.33	113.21	113.04	113.03	112.81
EOM	112.98	113.32	113.54	113.11	113.17	113.15	112.97	113.17	113.01	113.01	113.10	112.73
MAX	113.50	113.56	113.54	113.50	113.51	113.44	113.45	113.33	113.22	113.13	113.15	113.17
MIN	112.98	113.01	112.91	112.92	112.70	112.86	112.71	112.94	112.82	112.88	112.86	112.68

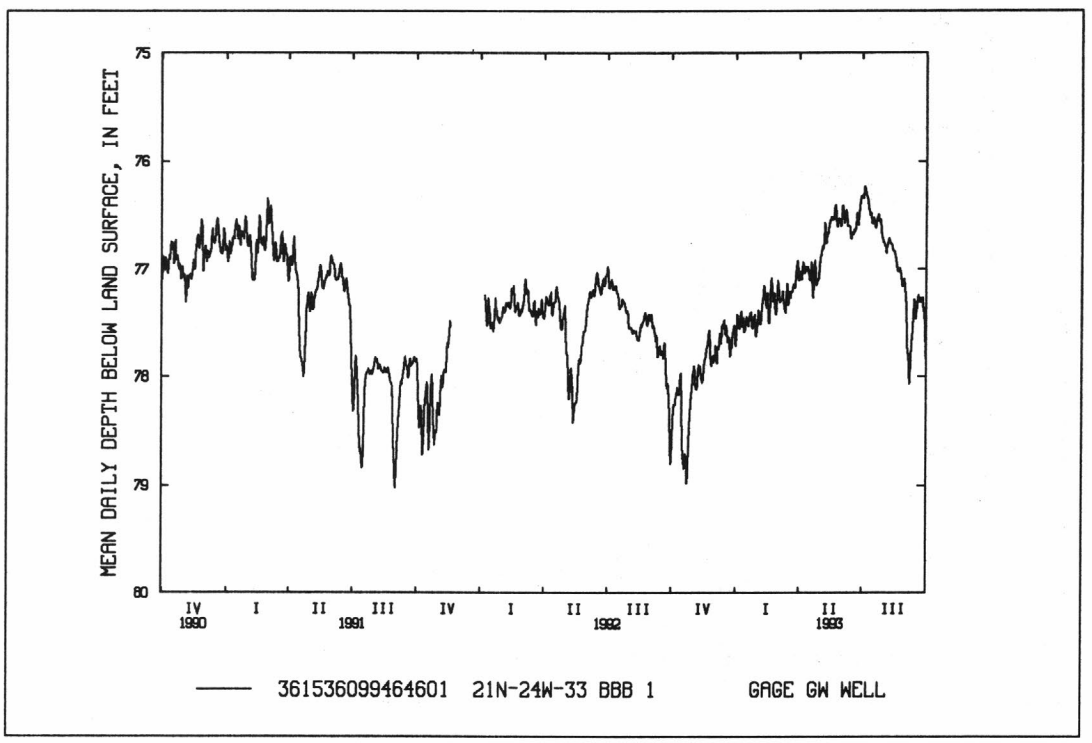


ELLIS COUNTY

WELL-IDENTIFICATION NUMBER.--361536099464601. Local number 21N-24W-33 BBB 1.
LOCATION.--Lat 36°15'35", long 099°46'59", Hydrologic Unit 11100203, 4 mi southwest of Gage.
AQUIFER.--Ogallala Formation.
WELL CHARACTERISTICS.--Drilled unused well, diameter 5 in., depth 205 ft.
DATUM.--Altitude of land-surface datum is 2,295 ft. Measuring point: top of wooden recorder base 3.10 ft above land-surface datum.
REMARKS.--Digital recorder installed June 2, 1981, mean-daily water levels published thereafter. Recorder removed Oct. 4, 1993.
PERIOD OF RECORD.--April 1977 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 75.96 ft below land-surface datum, April 29, 1990; lowest water level, 84.40 ft below land-surface datum, May 15, 1977.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	78.26	78.10	77.88	77.54	77.51	77.31	77.09	76.78	76.57	76.25	76.79	77.87
10	78.15	77.92	77.69	77.54	77.15	77.29	76.97	76.76	76.60	76.44	76.76	77.64
15	78.19	78.03	77.47	77.50	77.22	77.13	77.02	76.55	76.72	76.58	76.83	77.46
20	78.83	77.74	77.68	77.45	77.12	77.27	77.12	76.54	76.65	76.62	77.01	77.29
25	78.67	77.67	77.74	77.55	77.22	77.16	77.06	76.59	76.59	76.54	77.05	77.26
EOM	77.99	77.87	77.68	77.55	77.39	77.00	77.03	76.60	76.32	76.75	77.19	77.89
MAX	78.98	78.12	77.88	77.72	77.51	77.40	77.27	76.92	76.72	76.75	77.19	78.06
MIN	77.97	77.57	77.47	77.39	77.08	76.92	76.91	76.40	76.32	76.23	76.71	77.24

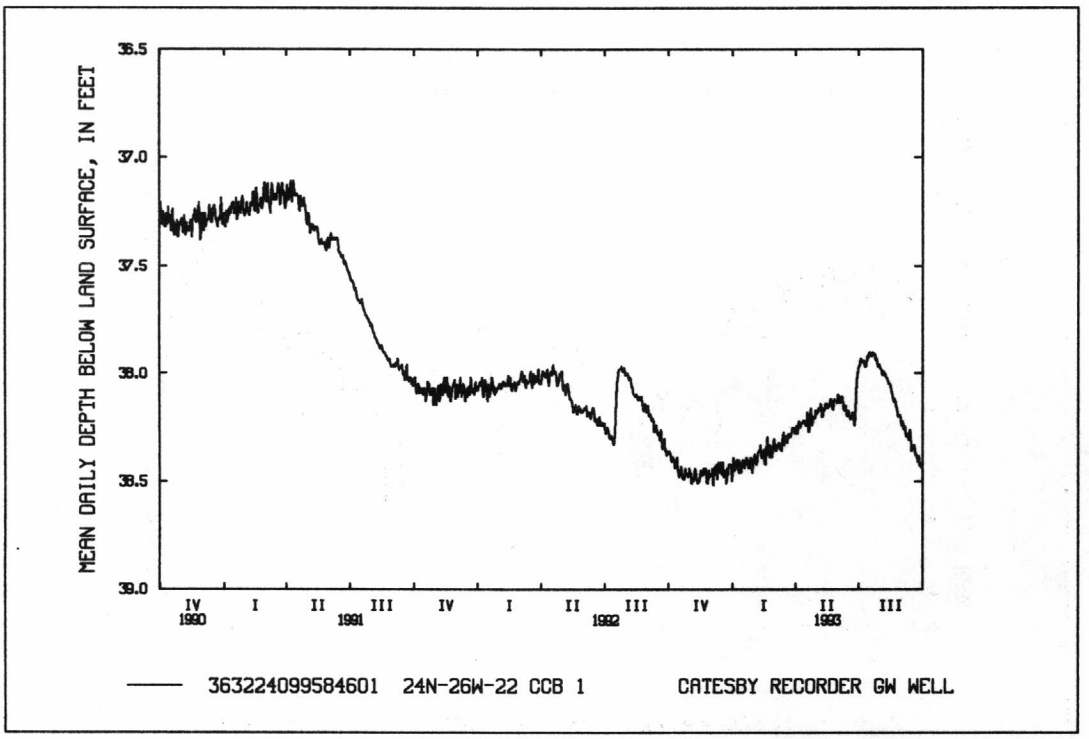


ELLIS COUNTY--Continued

WELL-IDENTIFICATION NUMBER.--363224099584601. Local number, 24N-26W-22 CCB 1.
LOCATION.--Lat 36°32'24", long 099°58'46", Hydrologic Unit 11100201, 3.5 mi northwest of Catesby.
AQUIFER.--Ogallala Formation.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 94 ft.
DATUM.--Altitude of land-surface datum is 2,340 ft. Measuring point: top edge of shelter base 2.40 ft above land-surface datum.
REMARKS.--Recorder removed Oct. 4, 1993.
PERIOD OF RECORD.--1985 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 36.29 ft below land-surface datum, May 29, 1990; lowest water level, 40.98 ft below land-surface datum, Sept. 10, 1985.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	38.41	38.49	38.47	38.44	38.41	38.35	38.24	38.17	38.13	37.95	37.99	38.25
10	38.44	38.49	38.49	38.46	38.33	38.35	38.23	38.20	38.17	37.97	38.02	38.31
15	38.46	38.48	38.41	38.41	38.35	38.27	38.23	38.15	38.18	37.91	38.06	38.35
20	38.46	38.44	38.47	38.39	38.29	38.32	38.27	38.15	38.20	37.92	38.13	38.38
25	38.44	38.51	38.47	38.42	38.36	38.29	38.24	38.17	38.24	37.94	38.18	38.39
EOM	38.44	38.47	38.50	38.40	38.34	38.27	38.17	38.14	37.98	37.97	38.24	38.39
MAX	38.49	38.51	38.52	38.46	38.42	---	38.28	38.20	38.24	37.97	38.24	38.44
MIN	38.36	38.44	38.41	38.39	38.29	---	38.16	38.12	37.98	37.90	37.98	38.22

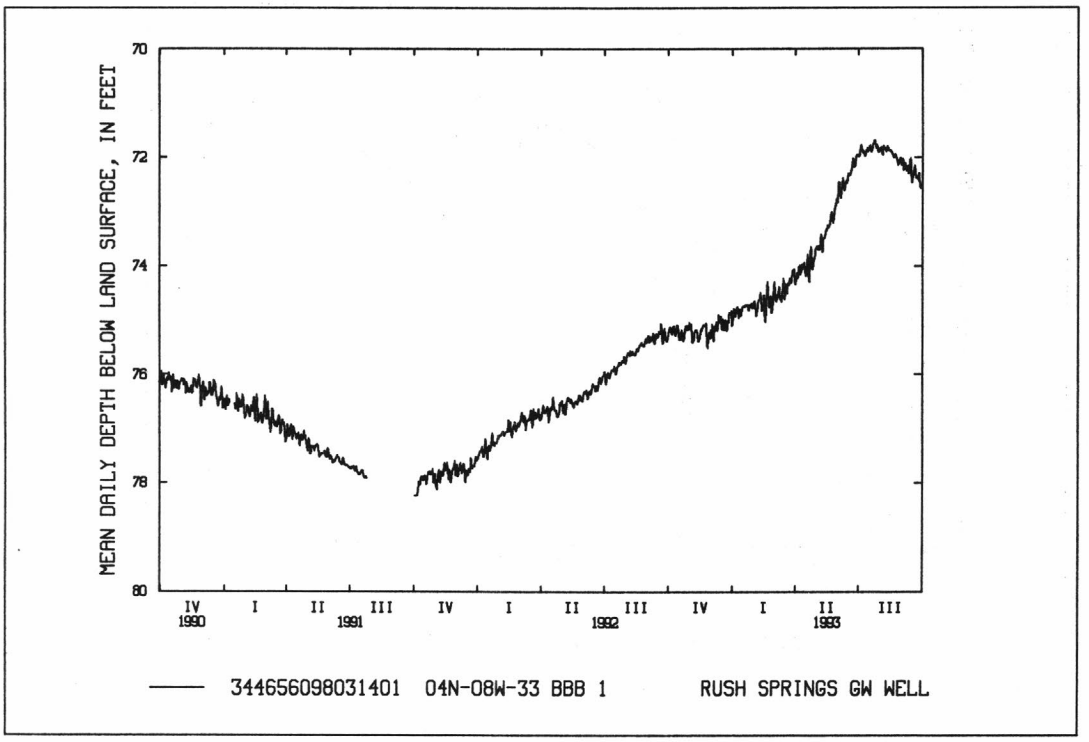


GRADY COUNTY

WELL-IDENTIFICATION NUMBER.--344656098031401. Local number 04N-08W-33 BBB 1.
LOCATION.--Lat 34°46'56", long 098°03'14", Hydrologic Unit 11130208, 5.6 mi west of Rush Springs on Hwy 17.
AQUIFER.--Rush Springs Formation.
WELL CHARACTERISTICS.--Drilled test well, diameter 6 in., depth 254 ft.
DATUM.--Altitude of land-surface datum is 1,360 ft. Measuring point: top of casing 3.98 ft above land-surface datum.
PERIOD OF RECORD.--1948 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 71.64 ft below land-surface datum, July 23, 1993; lowest water level, 85.67 ft below land-surface datum, Feb. 29, 1968.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	75.23	75.35	75.38	74.92	74.84	74.65	74.19	73.70	72.76	71.82	71.79	72.10
10	75.26	75.21	75.19	74.96	74.49	74.61	73.97	73.75	72.60	71.98	71.83	72.31
15	75.19	75.33	74.92	74.76	74.53	74.23	74.08	73.32	72.40	71.87	71.87	72.47
20	75.18	75.09	75.18	74.72	74.28	74.51	74.20	73.25	72.26	71.85	72.00	72.31
25	75.13	75.33	75.01	74.77	74.56	74.30	74.04	73.22	72.17	71.77	72.06	72.29
EOM	75.05	75.34	75.10	74.69	74.68	74.22	73.69	72.84	71.96	71.87	72.15	72.43
MAX	75.37	75.51	75.38	75.07	75.03	74.66	74.34	73.75	72.76	71.98	72.15	72.58
MIN	75.05	75.05	74.84	74.69	74.28	74.07	73.64	72.77	71.96	71.69	71.79	72.02

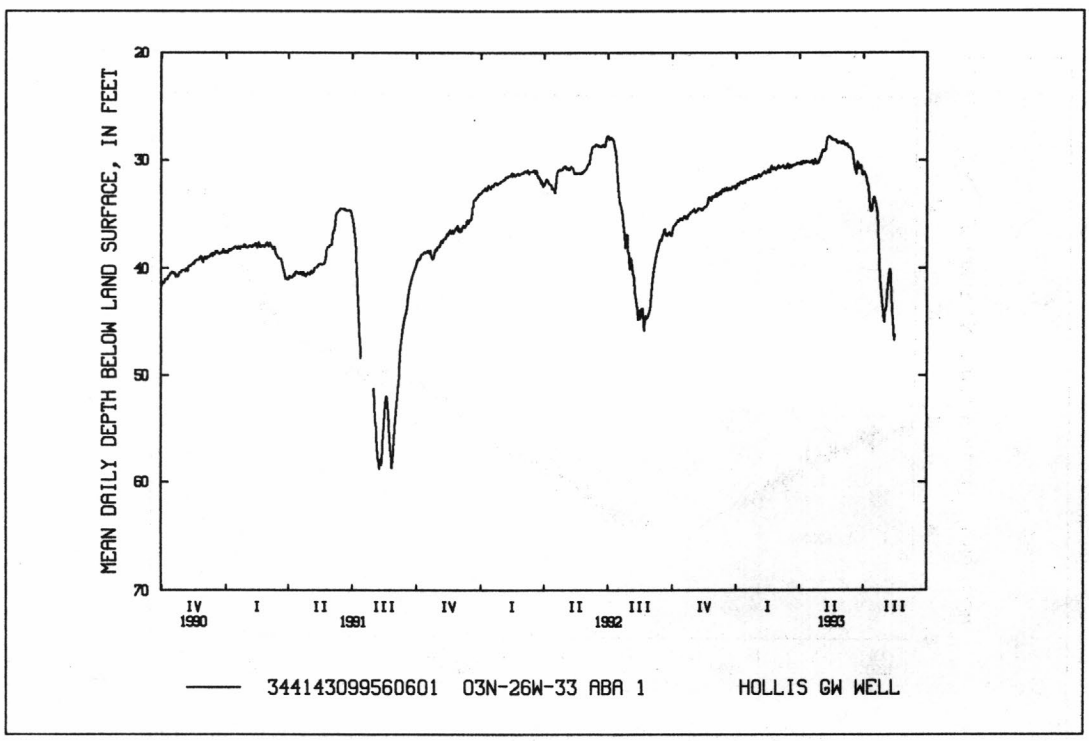


HARMON COUNTY

WELL-IDENTIFICATION NUMBER.--344143099560601. Local number 03N-26W-33 ABA 1
LOCATION.--Lat 34°41'43", long 099°56'06", Hydrologic Unit 11130101, 1 mi northwest of Hollis.
AQUIFER.--Blaine Gypsum.
WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 16 in., depth 237 ft.
DATUM.--Altitude of land-surface datum is 1,640 ft. Measuring point: top of casing 1.53 ft above land-surface datum.
PERIOD OF RECORD.--1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 27.73 ft below land-surface datum, June 30, 1992; lowest water level, 114.58 ft below land-surface datum Sept. 6, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	36.03	34.72	33.32	32.25	31.46	30.72	30.24	29.17	28.58	31.46	41.65	---
10	35.66	34.53	33.12	32.18	31.07	30.69	30.12	28.14	28.81	33.96	41.53	---
15	35.41	34.51	32.69	31.81	30.95	30.37	30.23	27.91	29.15	33.76	46.20	---
20	35.17	34.20	32.79	31.68	30.56	30.66	30.35	28.16	30.92	34.39	---	---
25	35.05	33.71	32.65	31.66	30.72	30.49	30.33	28.43	30.81	40.84	---	---
EOM	34.66	33.44	32.64	31.48	30.77	30.32	29.75	28.46	31.39	45.04	---	---
MAX	36.70	34.84	33.39	32.55	31.52	30.76	30.39	29.76	31.39	45.04	---	---
MIN	34.66	33.39	32.40	31.46	30.56	30.26	29.75	27.84	28.27	31.13	---	---



JOHNSTON COUNTY

WELL-IDENTIFICATION NUMBER.--341243096534501. Local number 04S-04E-16 BBC 1.

LOCATION.--Lat 34°12'45", long 096°53'51", Hydrologic Unit 11130304, 2.0 mi northwest of Mannsville.

AQUIFER.--Antlers Sand.

WELL CHARACTERISTICS.--Drilled unused well, diameter 4 in., depth 51.8 ft.

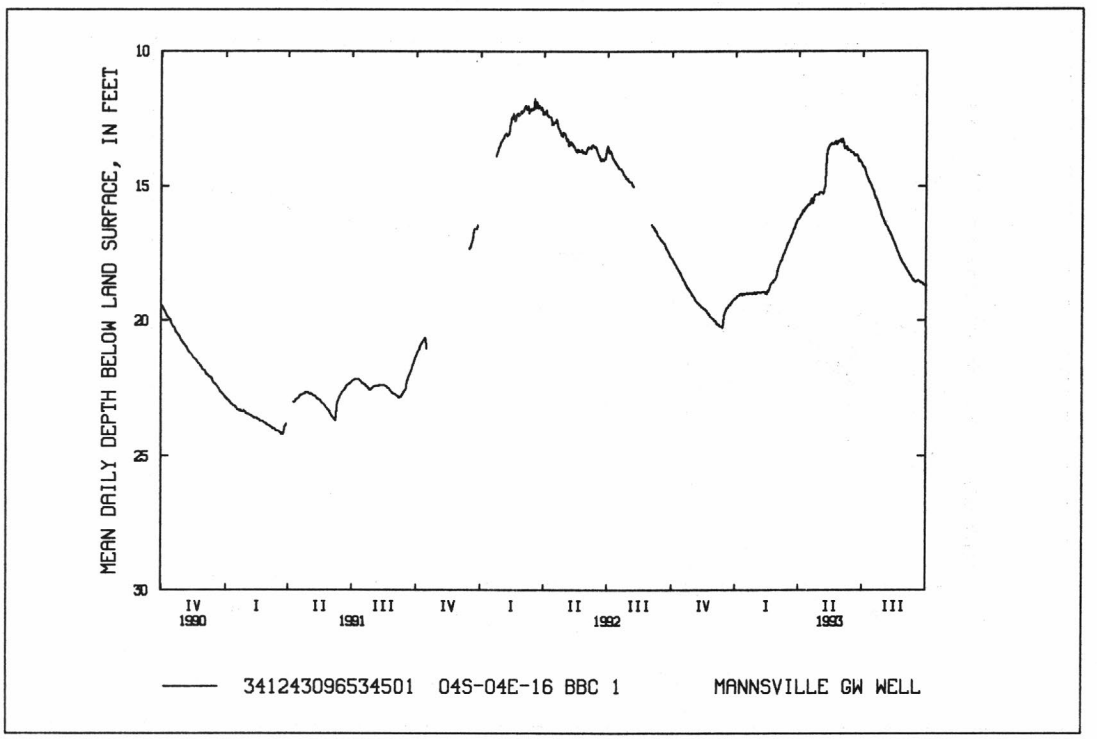
DATUM.--Altitude of land-surface datum is 745 ft. Measuring point: top of casing 1.00 ft above land-surface datum.

PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 11.65 ft below land-surface datum, Mar. 18, 1992; lowest water level, 31.05 ft below land-surface datum, Feb. 29, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	17.86	19.28	20.12	19.08	18.97	17.84	16.04	15.29	13.60	14.42	16.50	18.20
10	18.10	19.42	20.23	19.05	18.92	17.54	15.82	14.03	13.67	14.82	16.76	18.43
15	18.34	19.54	19.84	18.99	18.91	17.20	15.69	13.45	13.76	15.09	17.06	18.57
20	18.59	19.63	19.53	18.99	18.63	16.92	15.61	13.45	13.87	15.45	17.41	18.53
25	18.82	19.83	19.36	19.01	18.49	16.61	15.32	13.43	14.07	15.80	17.71	18.61
EOM	19.07	19.96	19.20	18.97	18.35	16.23	15.26	13.36	14.17	16.24	17.98	18.70
MAX	19.07	19.96	20.27	19.18	19.01	18.19	16.22	15.29	14.17	16.24	17.98	18.72
MIN	17.69	19.11	19.19	18.95	18.35	16.23	15.26	13.28	13.26	14.24	16.30	18.03



LINCOLN COUNTY

WELL-IDENTIFICATION NUMBER.--354442096400801. Local number 15N-06E-29 AAA 1.

LOCATION.--Lat 35°45'10", long 096°40'50", Hydrologic Unit 11100303, 1 mi west of junction of Hwy 99 and 66 in Stroud.

AQUIFER.--Vamoosa Formation.

WELL CHARACTERISTICS.--Drilled unused public supply well, diameter 6 in., depth 339 ft.

DATUM.--Altitude of land-surface datum is 950 ft. Measuring point: top of casing 1 ft above land-surface datum.

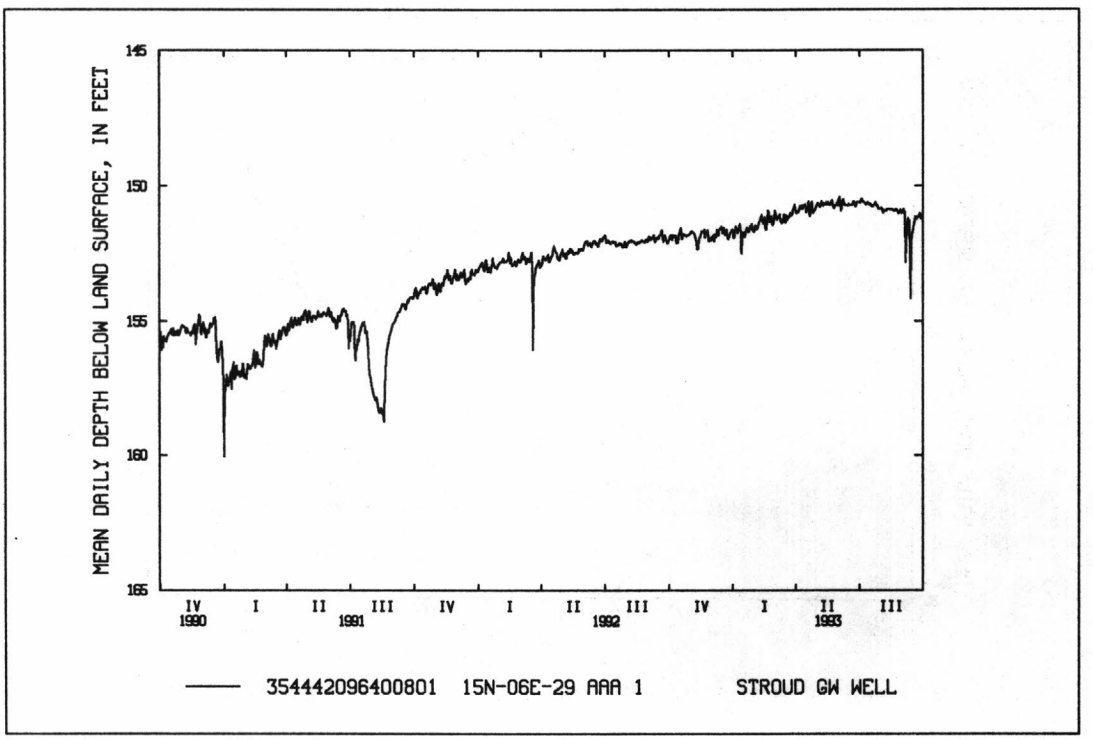
REMARKS.--Digital recorder installed May 28, 1981, mean-daily levels published thereafter.

PERIOD OF RECORD.--1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 150.35 ft below land-surface datum, June 3, 1993; lowest water level, 184.01 ft below land-surface datum, Nov. 10, 1977.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	151.92	151.70	152.04	151.48	151.56	151.22	150.96	150.74	150.93	150.46	150.91	152.82
10	151.91	152.18	151.76	151.47	151.13	151.26	150.74	150.75	150.69	150.67	150.86	151.29
15	151.83	151.86	151.50	151.70	151.12	151.04	150.74	150.60	150.73	150.68	150.87	151.71
20	151.96	151.66	151.68	151.60	150.91	151.26	150.92	150.70	150.70	150.76	150.91	151.15
25	151.83	151.63	151.96	151.52	151.10	151.07	150.86	150.79	150.72	150.67	150.97	150.98
EOM	151.77	151.97	151.59	151.68	151.36	150.79	150.77	150.71	150.59	150.83	150.98	151.08
MAX	152.12	152.33	152.04	152.51	151.60	151.37	151.11	150.82	150.93	150.85	151.01	154.17
MIN	151.56	151.61	151.50	151.39	150.91	150.71	150.56	150.50	150.41	150.46	150.80	150.88

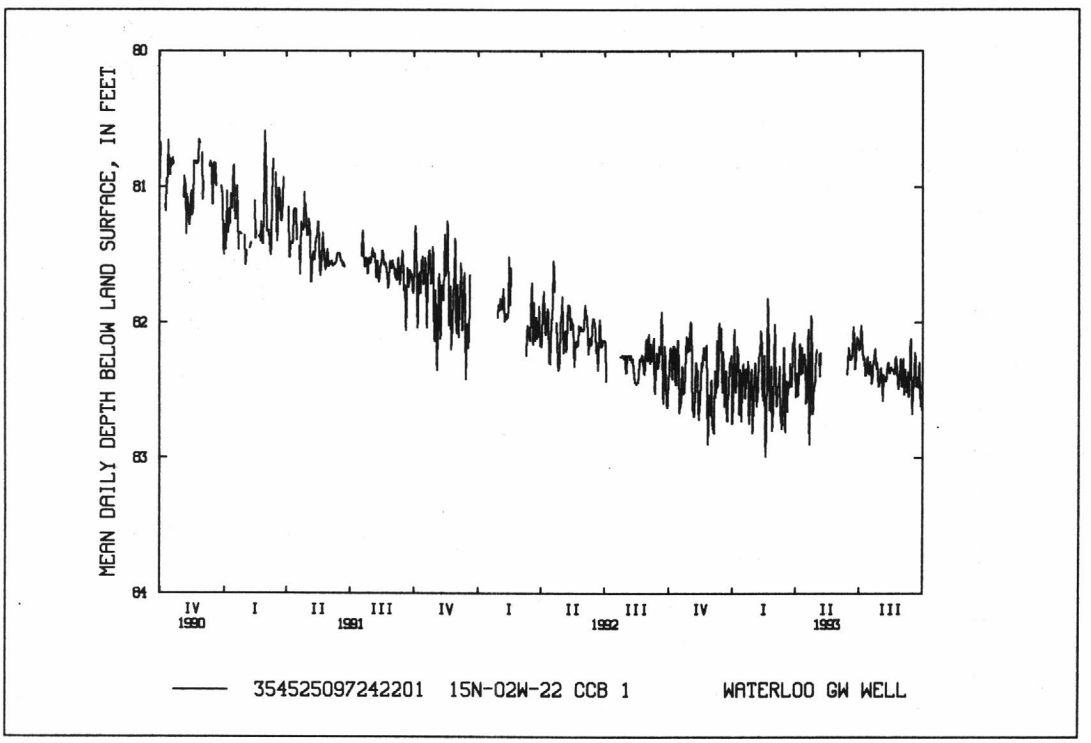


LOGAN COUNTY

WELL-IDENTIFICATION NUMBER.--354525097242201. Local number 15N-02W-22 CCB 1.
LOCATION.--Lat 35°45'25", long 097°24'22", Hydrologic Unit 11050002, 4.0 mi east of Waterloo.
AQUIFER.--Garber Sandstone.
WELL CHARACTERISTICS.--Drilled unused domestic well, diameter 6 in., depth 146 ft.
DATUM.--Altitude of land-surface datum is 1,225 ft. Measuring point: top of casing at land-surface datum.
PERIOD OF RECORD.--1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest daily water level, 70.46 ft below land-surface datum, June 3, 1987; lowest daily water level, 88.58 ft below land-surface datum, May 8, 1984.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	82.38	82.63	82.82	82.51	82.57	82.62	82.49	82.23	---	82.09	82.38	82.34
10	82.43	82.34	82.48	82.68	82.06	82.68	82.18	---	---	82.39	82.34	82.55
15	82.34	82.59	82.04	82.34	82.24	82.18	82.37	---	82.28	82.38	82.34	82.68
20	82.32	82.18	82.62	82.34	81.82	82.66	82.69	---	82.26	82.40	82.38	82.41
25	82.21	82.43	82.53	82.66	82.32	82.44	82.57	---	82.34	82.29	82.42	82.29
EOM	82.07	82.67	82.75	82.48	82.62	82.27	82.26	---	82.15	82.39	82.47	82.37
MAX	82.67	82.90	82.82	82.82	82.99	82.81	82.90	---	---	82.47	82.58	82.68
MIN	82.07	81.99	82.00	82.05	81.82	82.01	81.95	---	---	82.02	82.25	82.12

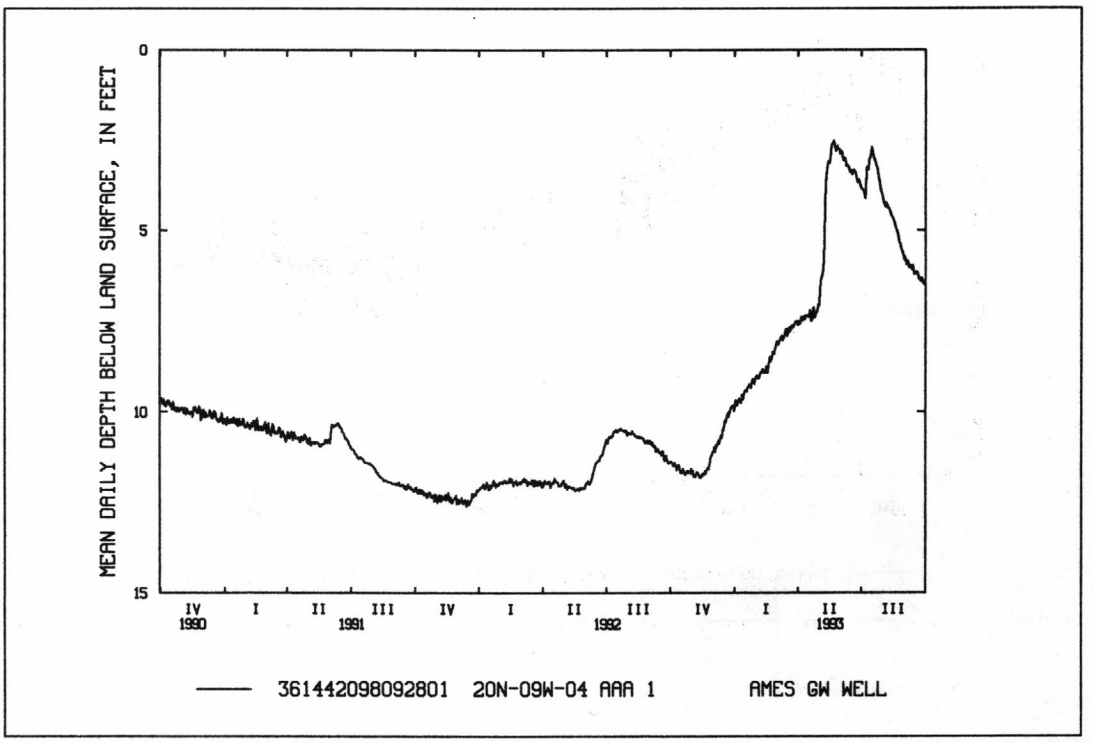


MAJOR COUNTY

WELL-IDENTIFICATION NUMBER.--361442098092801. Local number 20N-09W-04 AAA 1.
LOCATION.--Lat 36°14'42", long 098°09'28" (revised), Hydrologic Unit 11050002, 1.5 mi east of Ames.
AQUIFER.--Cimarron Terrace.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., depth 60 ft.
DATUM.--Altitude of land-surface datum is 1,225 ft. Measuring point: shelter base 2.10 ft above land-surface datum.
REMARKS.--Digital recorder installed Aug. 25, 1983, mean-daily water levels published thereafter. Recorder removed Nov. 8, 1993.
PERIOD OF RECORD.--1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.73 ft below land-surface datum, June 1, 1987; lowest water level, 25.97 ft below land-surface datum, Sept. 15, 1971.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

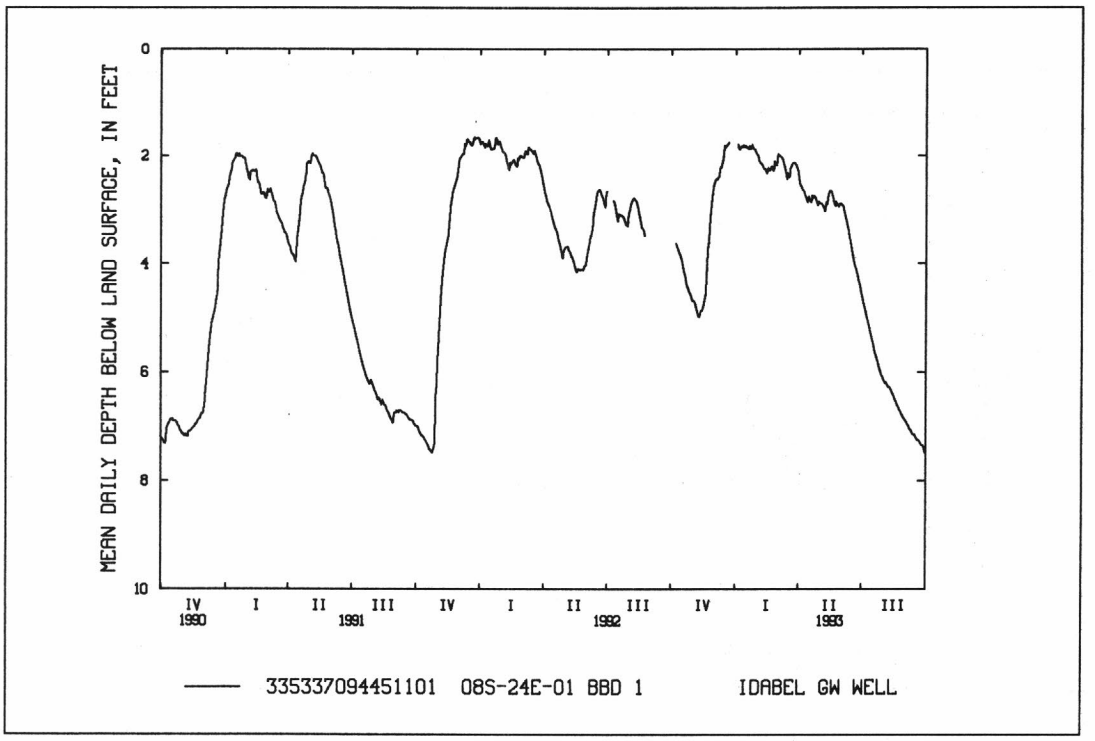
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.51	11.78	11.03	9.78	9.03	8.09	7.48	6.27	3.07	4.05	4.24	5.88
10	11.60	11.74	10.90	9.74	8.81	8.04	7.38	4.03	3.22	3.28	4.42	6.07
15	11.64	11.79	10.48	9.45	8.75	7.72	7.37	3.09	3.34	2.73	4.69	6.19
20	11.63	11.66	10.22	9.29	8.47	7.79	7.50	2.62	3.32	3.06	5.00	6.31
25	11.64	11.59	10.04	9.22	8.37	7.68	7.40	2.79	3.67	3.54	5.39	6.32
EOM	11.60	11.17	9.99	9.03	8.23	7.56	7.06	2.89	3.79	4.04	5.79	6.38
MAX	11.75	11.83	11.13	9.85	9.08	8.16	7.62	7.07	3.79	4.11	5.79	6.51
MIN	11.39	11.17	9.82	9.03	8.23	7.51	7.06	2.53	2.80	2.73	4.13	5.75



WELL-INDENTIFICATION NUMBER.--335337094451101. Local number 08S-24E-01 BBD 1.
LOCATION.--Lat 33°53'37", long 094°45'11", Hydrologic Unit 11140107, 3.0 mi east of Idabel.
AQUIFER.--Antlers Sand.
WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 6 in., depth 66 ft.
DATUM.--Altitude of land-surface datum is 408 ft. Measuring point: top of casing 1.50 ft above land-surface datum.
PERIOD OF RECORD.--1969 to 1971, 1983 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 1.63 ft measured Dec. 22, 1991, below land-surface datum; lowest water level, 8.94 ft below land-surface datum, Oct. 3, 1970.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	4.83	2.45	1.86	2.14	2.01	2.59	2.93	3.04	4.84	6.21	6.99
10	3.72	4.98	2.21	1.83	2.25	2.12	2.74	2.87	3.33	5.13	6.29	7.11
15	3.93	4.78	1.82	1.83	2.29	2.45	2.77	2.65	3.66	5.40	6.44	7.18
20	4.21	4.21	1.79	1.83	2.23	2.22	2.73	2.79	4.00	5.68	6.61	7.26
25	4.49	3.15	---	1.85	2.11	2.13	2.80	2.89	4.27	5.91	6.74	7.35
EOM	4.69	2.60	---	1.97	2.18	2.29	2.86	2.89	4.55	6.13	6.88	7.51
MAX	---	4.98	---	---	2.33	2.45	2.92	3.02	4.55	6.13	6.88	7.51
MIN	---	2.60	---	---	1.99	1.97	2.38	2.65	2.91	4.60	6.16	6.90

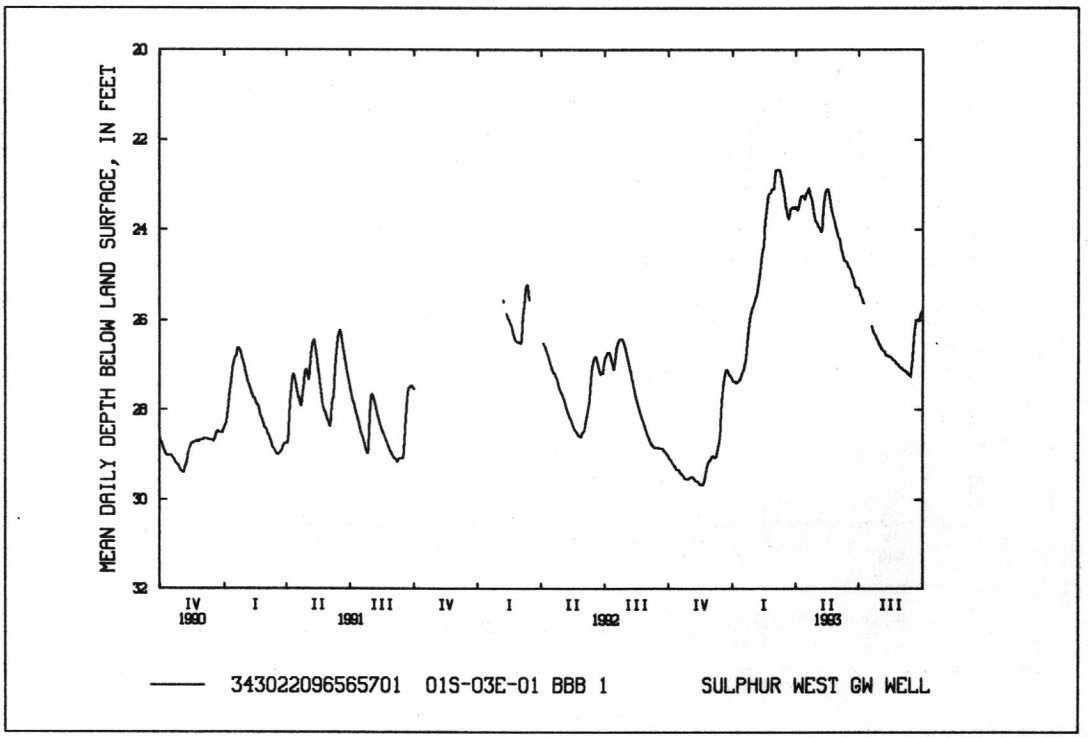


MURRAY COUNTY

WELL-IDENTIFICATION NUMBER.--343022096565701. Local number 01S-03E-01 BBB 1.
LOCATION.--Lat 34°30'22", long 096°56'57", Hydrologic Unit 11130303, 1 mi south of Sulphur.
AQUIFER.--Arbuckle Group.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., drilled depth 436 ft.
DATUM.--Altitude of land-surface datum is 1,080 ft. Measuring point: top of casing at land-surface datum.
REMARKS.--West observation well, measured depth 99 ft, Feb. 6, 1992.
PERIOD OF RECORD.--August 1972 to current year. Records August 1972 to December 1985 provided by National Park Service.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 22.67 ft below land-surface datum, Mar. 4-9, 1993; lowest water level, 34.93 ft below land-surface datum, Sept. 1, 1980.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	29.13	29.50	29.04	27.38	25.38	22.67	23.52	23.95	24.37	25.49	26.68	27.14
10	29.25	29.59	28.92	27.35	24.81	22.71	23.25	23.71	24.68	---	26.78	27.21
15	29.33	29.66	28.15	27.16	24.21	23.14	23.26	23.12	24.79	---	26.82	26.85
20	29.44	29.65	27.29	26.82	23.35	23.65	23.09	23.33	24.95	26.17	26.89	26.03
25	29.53	29.28	27.13	26.04	23.14	23.54	23.40	23.72	25.22	26.36	26.98	26.01
EOM	29.52	29.11	27.31	25.65	23.11	23.50	23.82	24.08	25.29	26.55	27.06	25.79
MAX	29.54	29.68	29.07	27.40	25.60	23.76	23.82	24.08	25.29	---	27.06	27.25
MIN	29.05	29.11	27.10	25.65	23.10	22.67	23.09	23.10	24.14	---	26.59	25.79

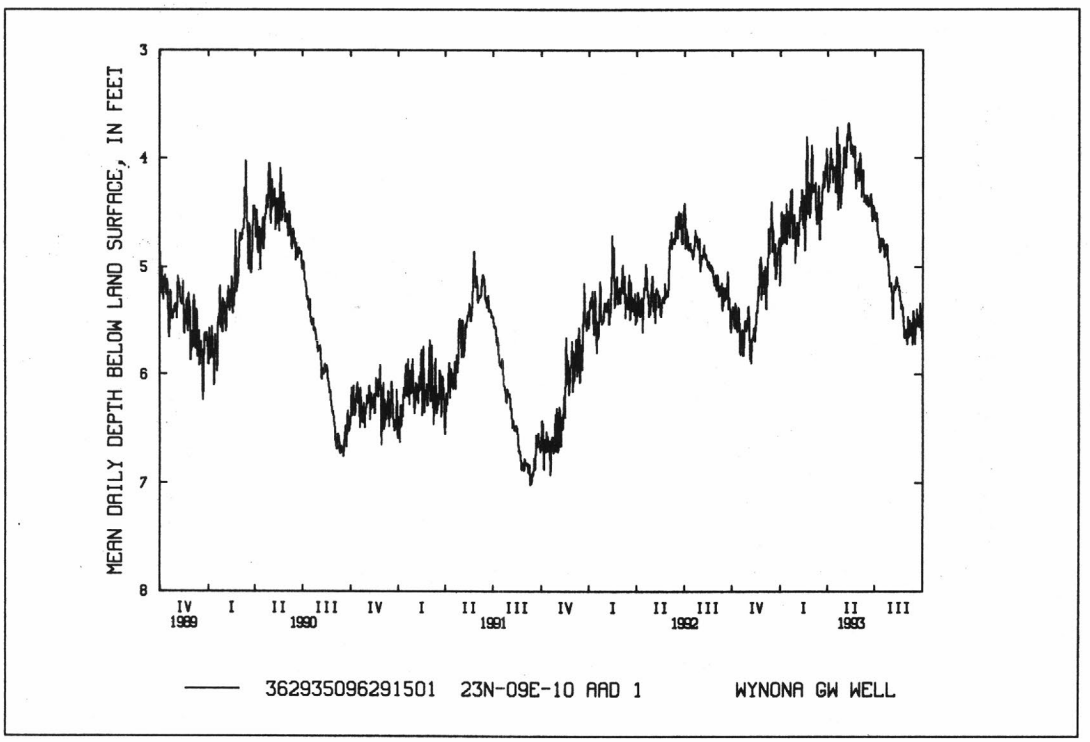


OSAGE COUNTY

WELL-IDENTIFICATION NUMBER.--362935096291501. Local number, 23N-09E-10 AAD 1.
LOCATION.--Lat 36°29'01", long 096°19'06", Hydrologic Unit 11070107, 4.2 mi southeast of Wynona.
AQUIFER.--Vamoosa Formation.
WELL CHARACTERISTICS.--Drilled unused well, diameter 13 in., depth 55 ft.
DATUM.--Altitude of land-surface datum is 835 ft. Measuring point: metal plate on top of casing 2.45 ft above land-surface datum.
REMARKS.--Digital recorder installed June 10, 1981, mean daily water levels thereafter.
PERIOD OF RECORD.--1971 to current year.
REVISED RECORDS.--WDR OK-91-1: 1982 (H), 1981, 1982.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 3.52 ft below land-surface datum, Feb. 20, 1993; Lowest water level, 9.45 ft below land-surface datum, Oct. 6, 1981.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.57	5.83	5.39	4.79	4.71	4.31	4.13	4.07	4.36	4.58	5.26	5.50
10	5.60	5.68	4.86	4.78	4.37	4.56	4.01	3.84	4.40	4.86	5.12	5.73
15	5.57	5.57	4.40	4.52	4.34	4.25	4.10	3.81	4.42	4.81	5.18	5.72
20	5.58	5.18	4.99	4.38	3.80	4.56	4.29	3.97	4.42	4.86	5.39	5.53
25	5.51	4.97	4.97	4.69	4.28	4.27	4.39	4.28	4.58	4.93	5.57	5.34
EOM	5.42	5.18	5.17	4.63	4.35	4.02	4.12	4.21	4.50	5.15	5.72	5.42
MAX	5.83	5.90	5.39	5.11	4.85	4.75	4.48	4.28	4.58	5.18	5.72	5.73
MIN	5.33	4.91	4.40	4.28	3.80	3.88	3.71	3.67	3.95	4.51	5.10	5.34

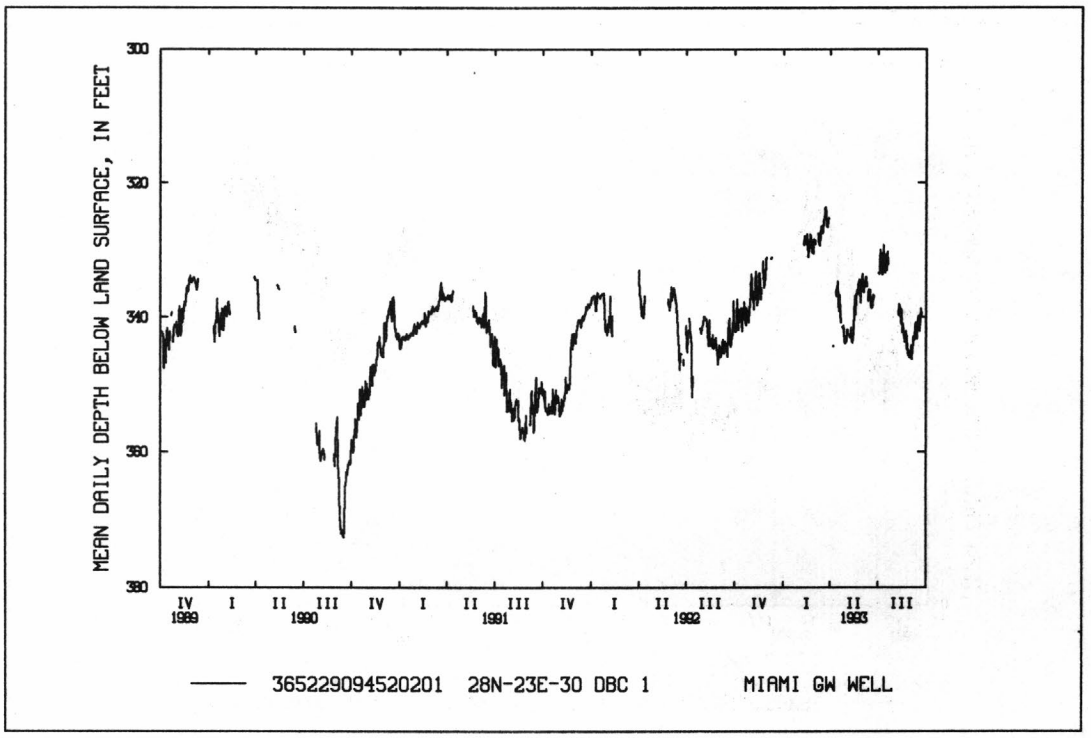


OTTAWA COUNTY

WELL-IDENTIFICATION NUMBER.--365229094520201. Local number 28N-23E-30 DBC 1.
LOCATION.--Lat 36°52'30", long 094°52'02", Hydrologic Unit 11070206, 200 ft northeast of the intersection of Central and I Streets in Miami.
AQUIFER.--Roubidoux Formation.
WELL CHARACTERISTICS.--Drilled unused well, diameter 6 in., reduced to 3.5 in., depth 1,490 ft.
DATUM.--Altitude of land-surface datum 770 ft. Measuring point: top of 6 in. casing 1.00 ft below land-surface datum.
PERIOD OF RECORD.--1980 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 323.14 ft below land-surface datum, Mar. 23, 1993; lowest water level, 469.44 ft below land-surface datum, July 31 to Aug. 2, 1983.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	339.80	336.88	---	---	---	---	---	342.44	---	331.78	---	343.79
10	338.97	333.27	331.20	---	329.24	328.57	---	342.17	335.54	331.62	338.23	340.72
15	339.99	337.32	---	---	329.27	326.39	334.82	341.82	336.75	332.57	339.74	339.79
20	339.15	337.48	---	---	329.30	325.14	339.60	336.91	338.53	332.19	342.42	338.78
25	339.94	333.25	---	---	330.37	326.38	341.50	334.96	---	---	344.74	---
EOM	336.43	331.47	---	---	329.44	---	343.90	334.52	---	---	345.92	---
MAX	342.03	---	---	---	---	---	---	---	---	---	---	---
MIN	336.43	---	---	---	---	---	---	---	---	---	---	---

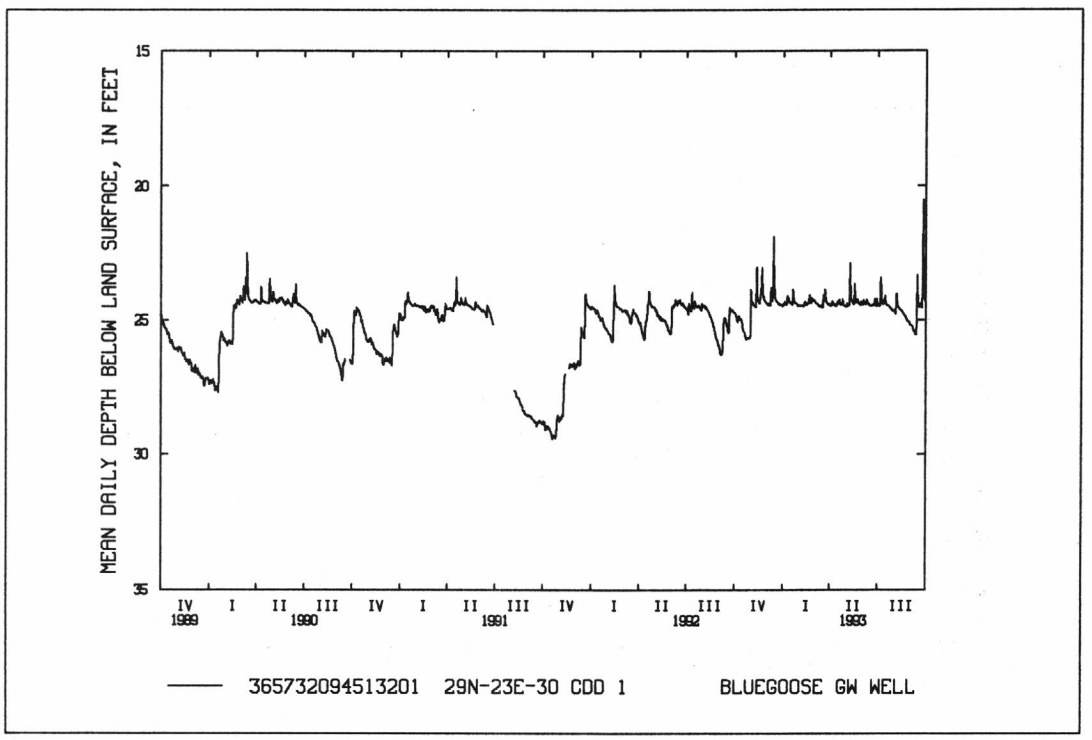


OTTAWA COUNTY--Continued

WELL-IDENTIFICATION NUMBER.--365732094513201. Local number, 29N-23E-30 CDD 1.
LOCATION.--Lat 36°57'34", long 094°51'27", Hydrologic Unit 11070206, 2.2 mi southeast of Picher.
AQUIFER.--Roubidoux Formation.
WELL CHARACTERISTICS.--Abandoned mine air shaft, diameter 8 in., depth 289 ft.
DATUM.--Altitude of land-surface datum is 820 ft. Measuring point: top of casing 1 ft above land-surface datum.
PERIOD OF RECORD.--1975 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 18.23 ft below land-surface datum Sept. 25, 1993; lowest, 170.70 ft below land-surface datum, Sept. 9, 1975.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.99	24.40	24.45	24.39	24.45	24.37	24.31	24.49	24.35	24.46	24.09	25.26
10	24.92	24.51	23.97	24.10	24.47	24.48	24.44	23.95	24.23	24.40	24.55	25.55
15	25.10	24.31	23.37	24.36	24.38	24.47	24.30	24.38	24.44	24.09	24.66	24.27
20	25.47	23.82	24.31	23.84	24.18	24.24	24.42	24.30	24.45	24.45	24.82	24.37
25	25.66	24.10	24.42	24.37	24.20	24.34	24.20	24.36	24.21	24.58	24.99	20.52
EOM	25.58	24.36	24.49	24.44	24.28	24.43	24.50	24.35	24.33	24.66	25.17	24.34
MAX	25.70	24.51	24.49	24.48	24.49	24.56	24.50	24.51	24.49	24.66	25.17	25.55
MIN	24.74	23.04	21.87	23.84	24.07	23.84	24.20	22.87	24.20	23.42	24.01	20.52

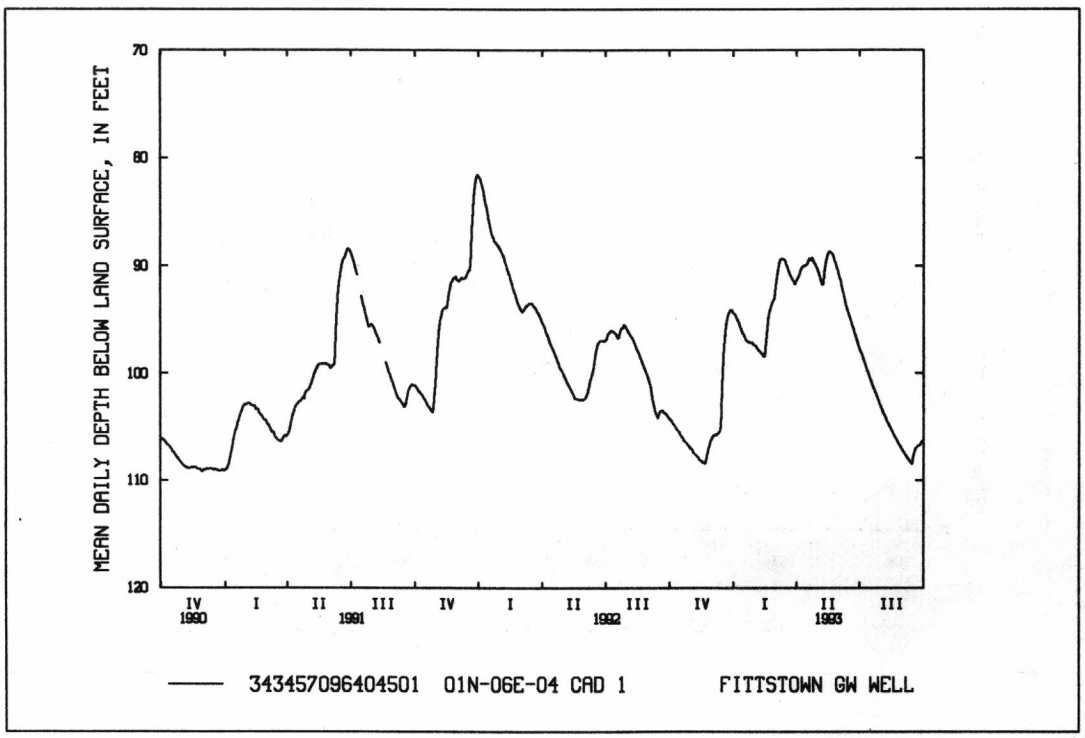


PONTOTOC COUNTY

WELL-IDENTIFICATION NUMBER.--343457096404501. Local number 01N-06E-04 CAD 1.
LOCATION.--Lat 34°34'57", long 096°40'45", Hydrologic Unit 11140102, 3.3 mi southwest of Fittstown.
AQUIFER.--Arbuckle Group.
WELL CHARACTERISTICS.--Drilled oil test well, diameter 18 in., depth 396 ft.
DATUM.--Altitude of land-surface datum is 1,155 ft. Measuring point: base of recorder shelter 2.83 ft above land-surface datum.
REMARKS.--Well originally 1,707 ft deep.
PERIOD OF RECORD.--1959 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest observed water level, 70.19 ft below land-surface datum, May 17, 1990; lowest water level, 128.23 ft below land-surface datum, Apr. 10, 1967.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	104.60	107.43	105.79	94.81	97.77	90.54	90.78	91.17	91.99	98.46	103.86	107.71
10	105.08	107.78	105.59	95.65	98.13	89.36	90.03	91.18	93.34	99.45	104.58	108.21
15	105.54	108.16	102.02	96.33	98.10	89.44	89.92	89.04	94.47	100.36	105.26	107.82
20	106.05	108.37	96.17	96.98	94.62	90.38	89.45	88.75	95.53	101.26	105.92	106.92
25	106.49	107.33	94.34	97.14	93.38	91.12	89.54	89.43	96.58	102.07	106.52	106.66
EOM	106.97	106.15	94.26	97.38	92.96	91.46	90.18	90.71	97.60	103.10	107.20	106.22
MAX	106.97	108.38	105.98	97.38	98.42	92.63	91.34	91.74	97.60	103.10	107.20	108.42
MIN	104.26	106.15	94.05	94.38	92.96	89.33	89.27	88.70	90.93	97.78	103.25	106.22

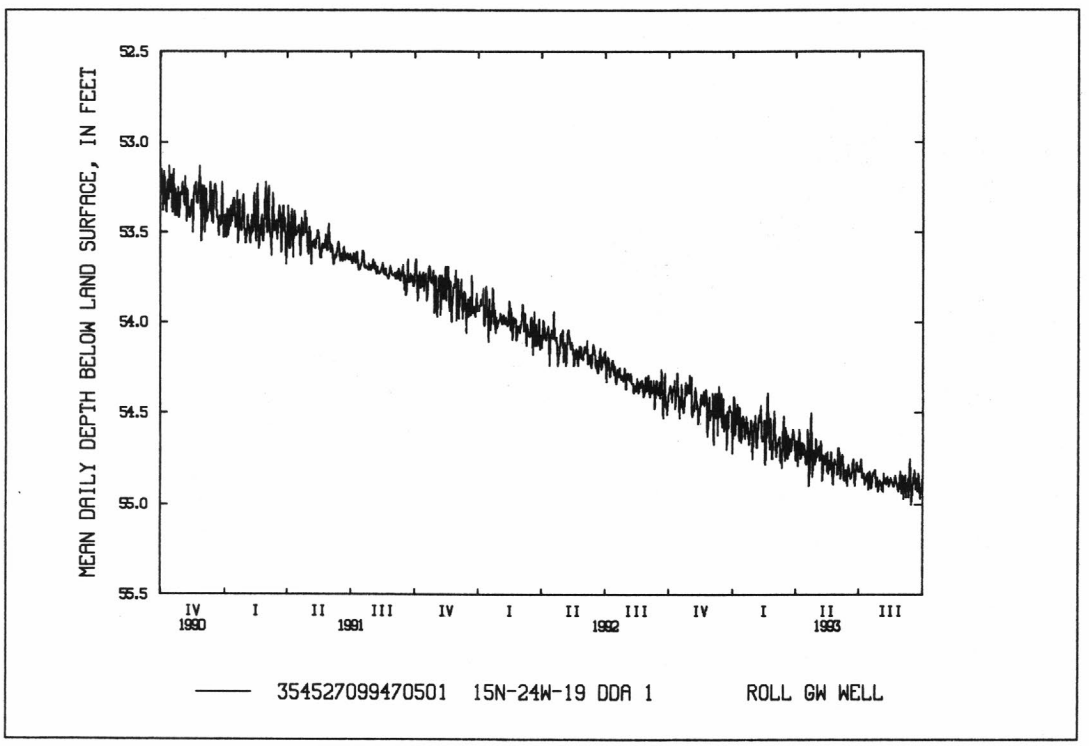


ROGER MILLS COUNTY

WELL-IDENTIFICATION NUMBER.--354527099470501. Local number 15N-24W-19 DDA 1.
LOCATION.--Lat 35°45'27", long 099°47'05", Hydrologic Unit 11130301, 4.5 mi southwest of Roll.
AQUIFER.--Ogallala Formation.
WELL CHARACTERISTICS.--Drilled unused irrigation well, diameter 12 in., depth 122 ft.
DATUM.--Altitude of land-surface datum is 2,315 ft. Measuring point: shelter base 2.28 ft above land-surface datum.
REMARKS.--Digital recorder installed May 19, 1981, mean-daily water levels published thereafter.
PERIOD OF RECORD.--1971 to current year.
REVISED RECORDS.--WDR OK-90-1; 1983, 1984.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 52.53 ft below land-surface datum, Mar. 2, 1989; lowest water level, 57.27 ft below land-surface datum, June 5, 1973.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	54.44	54.46	54.49	54.56	54.64	54.69	54.66	54.76	54.83	54.85	54.83	54.84
10	54.48	54.48	54.62	54.65	54.46	54.77	54.66	54.84	54.87	54.88	54.86	54.96
15	54.42	54.46	54.39	54.52	54.54	54.52	54.77	54.75	54.81	54.87	54.86	54.93
20	54.41	54.38	54.57	54.52	54.39	54.75	54.90	54.81	54.84	54.86	54.90	54.92
25	54.33	54.63	54.59	54.62	54.66	54.71	54.85	54.89	54.90	54.90	54.91	54.85
EOM	54.29	54.50	54.72	54.56	54.63	54.71	54.64	54.84	54.82	54.87	54.94	54.78
MAX	54.53	54.63	54.72	54.75	54.78	54.80	54.90	54.89	54.90	54.93	54.94	55.00
MIN	54.28	54.30	54.35	54.41	54.39	54.49	54.50	54.65	54.69	54.75	54.82	54.75

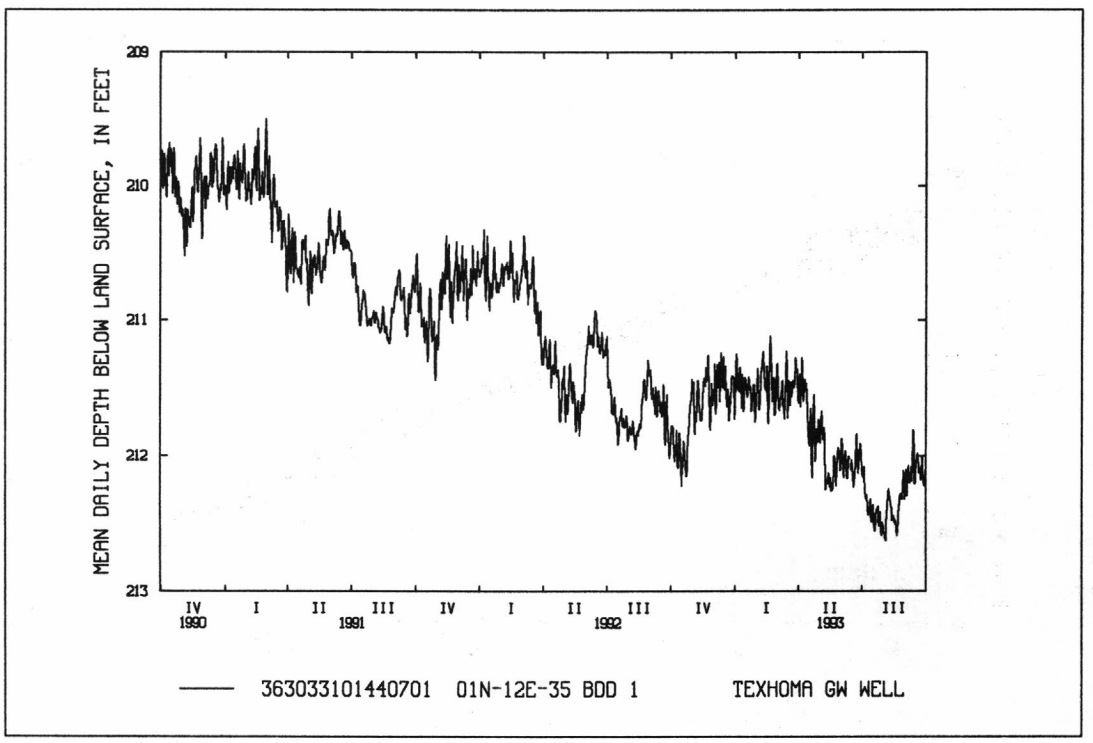


TEXAS COUNTY

WELL-IDENTIFICATION NUMBER.--363033101440701. Local number 01N-12E-35 BDD 1.
LOCATION.--Lat 36°30'33", long 101°44'07", Hydrologic Unit 11100103, 2.5 mi east of Texhoma.
AQUIFER.--Ogallala Formation.
WELL CHARACTERISTICS.--Drilled well, diameter 7 in., depth 386 ft.
DATUM.--Altitude of land-surface datum is 3,430 ft. Measuring point: top of casing 1.70 ft above land-surface datum.
REMARKS.--Digital recorder installed Mar. 17, 1980, mean-daily water levels published thereafter.
PERIOD OF RECORD.--1956 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 188.80 ft below land-surface datum, May 20, 1959; lowest water level, 212.68 ft below land-surface datum, Aug. 4, 1993.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	211.96	211.70	211.64	211.51	211.62	211.66	211.47	211.73	212.16	212.22	212.43	212.07
10	212.07	211.61	211.60	211.65	211.23	211.64	211.44	212.25	212.17	212.44	212.31	212.19
15	212.01	211.64	211.27	211.43	211.34	211.23	211.83	212.14	212.10	212.49	212.44	212.20
20	211.93	211.35	211.64	211.42	211.12	211.63	212.06	212.25	212.19	212.54	212.59	212.13
25	211.87	211.66	211.62	211.60	211.43	211.50	212.04	212.22	212.13	212.52	212.28	212.01
EOM	211.44	211.63	211.73	211.57	211.57	211.52	211.73	212.11	212.02	212.51	212.32	212.01
MAX	212.22	211.84	211.74	211.75	211.76	211.73	212.16	212.26	212.23	212.59	212.63	212.30
MIN	211.44	211.26	211.24	211.25	211.12	211.23	211.28	211.67	211.84	212.08	212.11	211.81

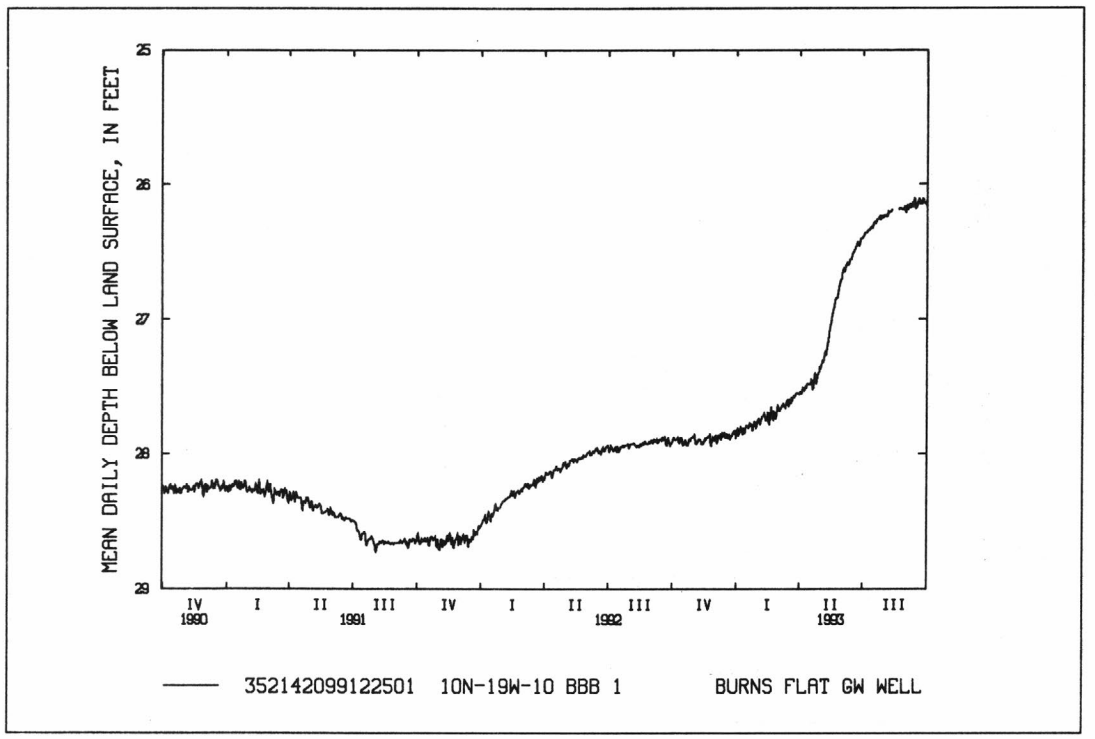


WASHITA COUNTY

WELL-IDENTIFICATION NUMBER.--352142099122501. Local number 10N-19W-10 BBB 1.
LOCATION.--Lat 35°21'49", long 099°12'19", Hydrologic Unit 11130302, 2 mi west of Burns Flat.
AQUIFER.--Elk City Sandstone.
WELL CHARACTERISTICS.--Drilled unused well, diameter 8 in., depth 107 ft.
DATUM.--Altitude of land-surface datum is 1,920 ft. Measuring point: top of casing 1.35 ft above land-surface datum.
REMARKS.--Digital recorder installed May 20, 1981, mean-daily water levels published thereafter. Recorder removed Oct. 7, 1993.
PERIOD OF RECORD.--April 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 26.08 ft below land-surface datum Sept. 30, 1993; lowest water level, 34.87 ft below land-surface datum, Apr. 4, 1982.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	27.90	27.93	27.91	27.85	27.76	27.67	27.53	27.32	26.64	26.36	26.20	26.15
10	27.91	27.90	27.90	27.86	27.69	27.65	27.50	27.23	26.60	26.34	26.20	26.17
15	27.90	27.92	27.84	27.79	27.69	27.60	27.49	27.05	26.53	26.30	---	26.17
20	27.90	27.88	27.89	27.77	27.65	27.63	27.52	26.92	26.47	26.27	---	26.14
25	27.89	27.93	27.87	27.80	27.70	27.58	27.48	26.84	26.46	26.26	26.19	26.11
EOM	27.87	27.90	27.89	27.76	27.68	27.56	27.36	26.71	26.40	26.23	26.21	26.10
MAX	27.94	27.94	27.92	27.86	27.78	27.68	27.56	27.37	26.66	26.39	---	26.19
MIN	27.87	27.86	27.83	27.76	27.65	27.55	27.36	26.71	26.40	26.23	---	26.10

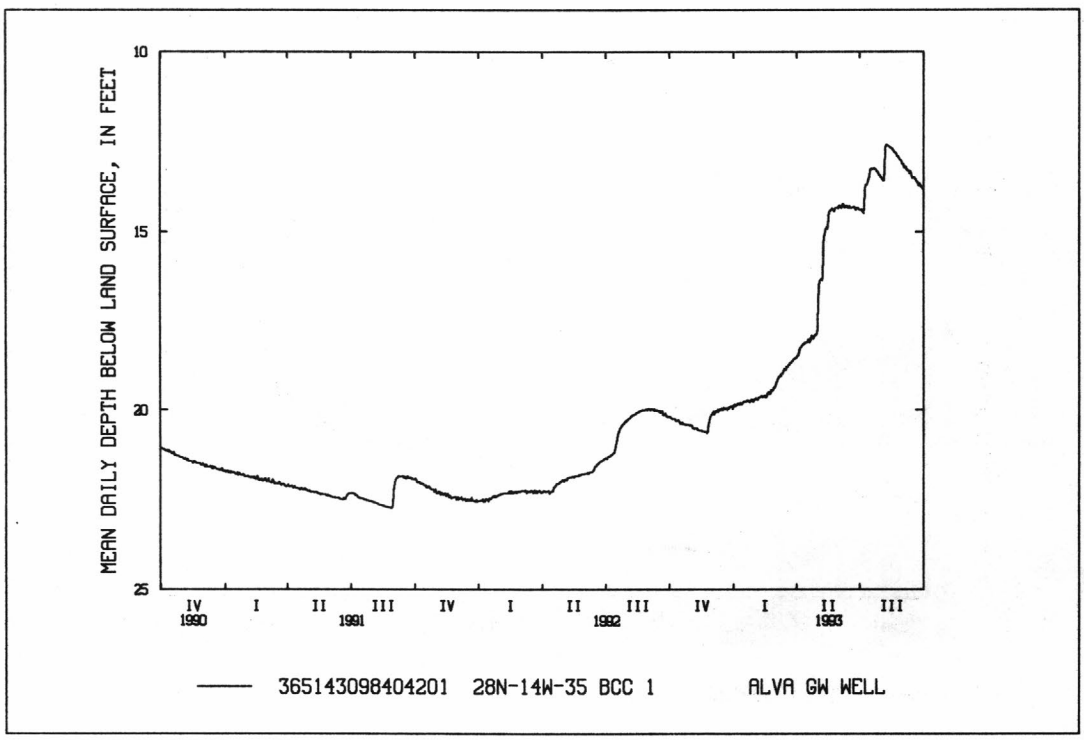


WOODS COUNTY

WELL-IDENTIFICATION NUMBER.--365143098404201. Local number 28N-14W-35 BCC 1.
LOCATION.--Lat 36°51'50", long 098°40'55", Hydrologic Unit 11060002, 4 mi north of Alva.
AQUIFER.--Cedar Hills Sandstone.
WELL CHARACTERISTICS.--Drilled unused municipal well, diameter 13 in., depth 54 ft.
DATUM.--Altitude of land-surface datum is 1,360 ft. Measuring point: edge of large hole in steel plate 2.60 ft above land-surface datum.
REMARKS.--Digital recorder installed July 30, 1980, mean-daily water levels published thereafter.
PERIOD OF RECORD.--1972 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest daily water level, 12.56 ft below land-surface datum, Aug. 7, 8, 1993; lowest water level, 24.25 ft below land-surface datum, Mar. 15, 1979.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.24	20.50	20.07	19.86	19.68	19.15	18.35	16.34	14.30	14.45	13.27	13.21
10	20.29	20.53	20.03	19.84	19.61	19.03	18.17	15.25	14.31	13.69	12.60	13.37
15	20.32	20.57	19.95	19.77	19.59	18.84	18.10	14.91	14.30	13.33	12.67	13.49
20	20.36	20.58	19.97	19.73	19.50	18.78	18.09	14.40	14.32	13.24	12.79	13.61
25	20.39	20.59	19.95	19.74	19.44	18.67	17.99	14.42	14.38	13.33	12.92	13.67
EOM	20.41	20.13	19.94	19.69	19.38	18.54	17.86	14.34	14.37	13.46	13.13	13.73
MAX	20.42	20.62	20.11	19.90	19.71	19.34	18.53	17.76	14.38	14.46	13.58	13.80
MIN	20.18	20.13	19.89	19.69	19.38	18.54	17.86	14.32	14.23	13.23	12.58	13.10

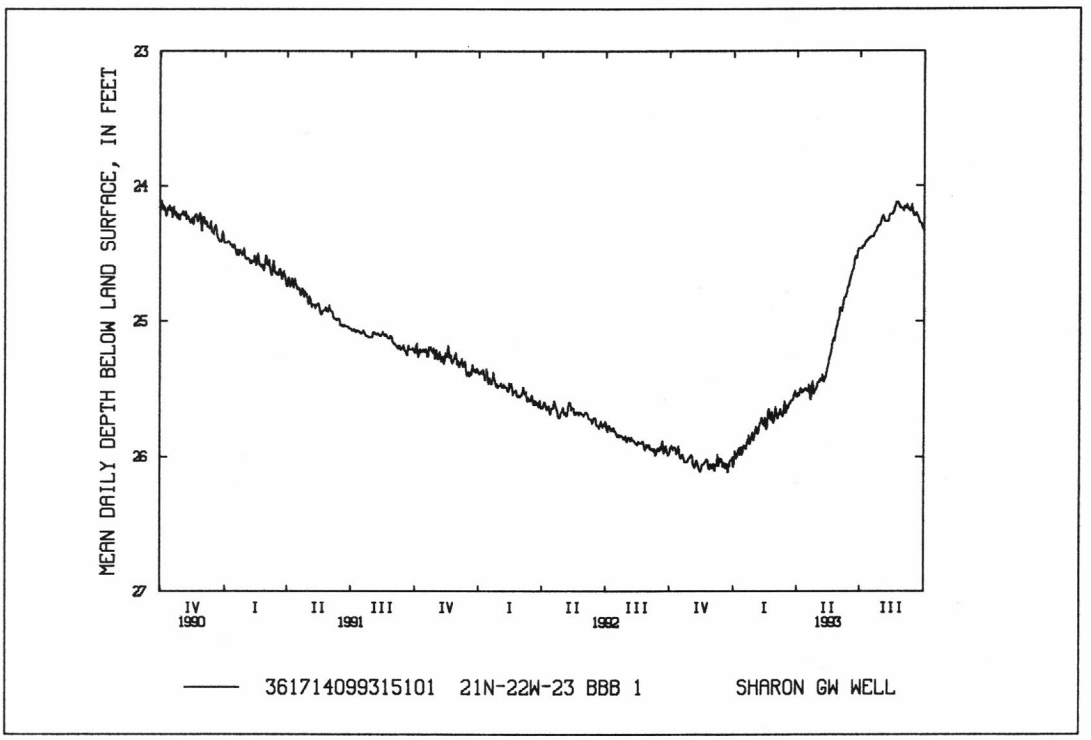


WOODWARD COUNTY

WELL-IDENTIFICATION NUMBER.--361714099315101. Local number 21N-22W-23 BBB 1.
LOCATION.--Lat 36°17'25", long 099°31'58", Hydrologic Unit 11100203, 11 mi west of Sharon.
AQUIFER.--Ogallala Formation.
WELL CHARACTERISTICS.--Drilled test hole, diameter 6 in., depth 322 ft.
DATUM.--Altitude of land-surface datum is 2,335 ft. Measuring point: top of shelf 3 ft above land-surface datum.
REMARKS.--Digital recorder installed Sept. 30, 1982, mean-daily water levels published thereafter.
PERIOD OF RECORD.--1957 to 1963, 1965 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest daily water level, 21.78 ft below land-surface datum, Nov. 15, 1987; lowest water level, 32.64 ft below land-surface datum, May 19, 1971.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1992 TO SEPTEMBER 1993
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	25.93	26.07	26.11	26.01	25.83	25.72	25.55	25.43	24.92	24.44	24.26	24.14
10	25.95	26.04	26.03	25.98	25.71	25.69	25.51	25.45	24.82	24.41	24.26	24.18
15	25.95	26.11	26.02	25.93	25.71	25.60	25.50	25.34	24.73	24.38	24.21	24.22
20	25.98	26.05	26.09	25.90	25.65	25.64	25.53	25.24	24.62	24.37	24.15	24.21
25	26.04	26.03	26.06	25.89	25.67	25.59	25.51	25.14	24.53	24.30	24.14	24.27
EOM	26.00	26.08	26.06	25.84	25.73	25.54	25.49	24.99	24.46	24.25	24.17	24.31
MAX	26.04	26.11	26.12	26.08	25.83	25.72	25.58	25.46	24.96	24.46	24.26	24.32
MIN	25.92	25.99	25.98	25.82	25.65	25.52	25.45	24.99	24.46	24.25	24.12	24.14



CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
	Length	
inch (in.)	2.54×10^{1}	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^{0}	kilometer
	Area	
acre	4.047×10^{3}	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi^2)	2.590×10^{0}	square kilometer
	Volume	
gallon (gal)	3.785×10^{0}	liter
	3.785×10^{0}	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^{3}	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft^3)	2.832×10^{1}	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic–foot–per–second day [(ft^3/s) d]	2.447×10^{3}	cubic meter
	2.447×10^{-3}	cubic hectometer
acre–foot (acre–ft)	1.233×10^{3}	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
	Flow	
cubic foot per second (ft^3/s)	2.832×10^{1}	liter per second
	2.832×10^{1}	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^{1}	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
	Mass	
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first–order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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