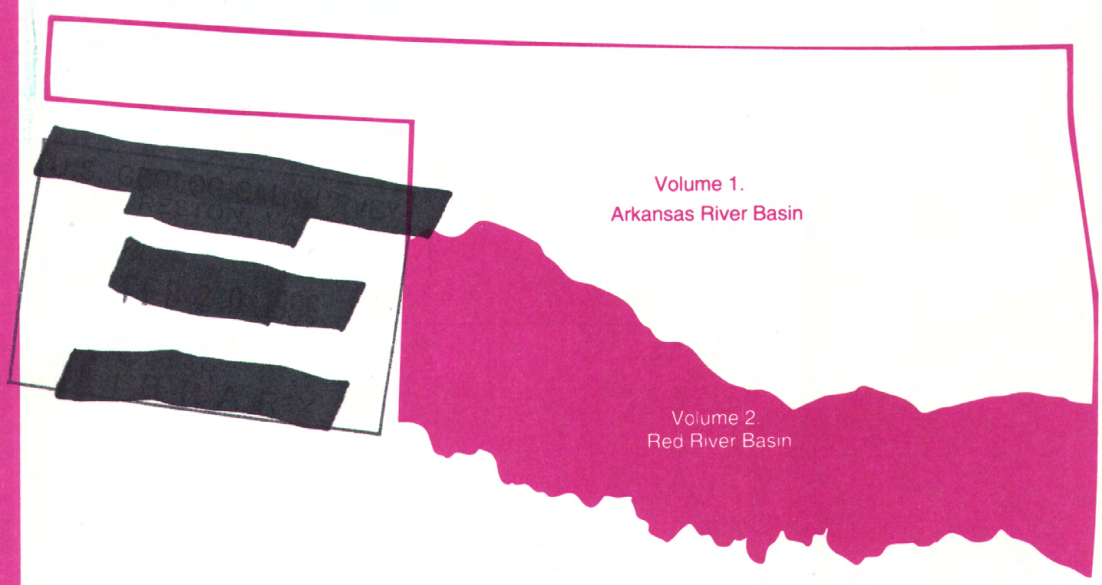
Water Resources Data Oklahoma Water Year 1994

Volume 2. Red River Basin



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT OK-94-2
Prepared in cooperation with the State of Oklahoma and with other agencies

CALENDAR FOR WATER YEAR 1994

1993

OCTOBER

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1994

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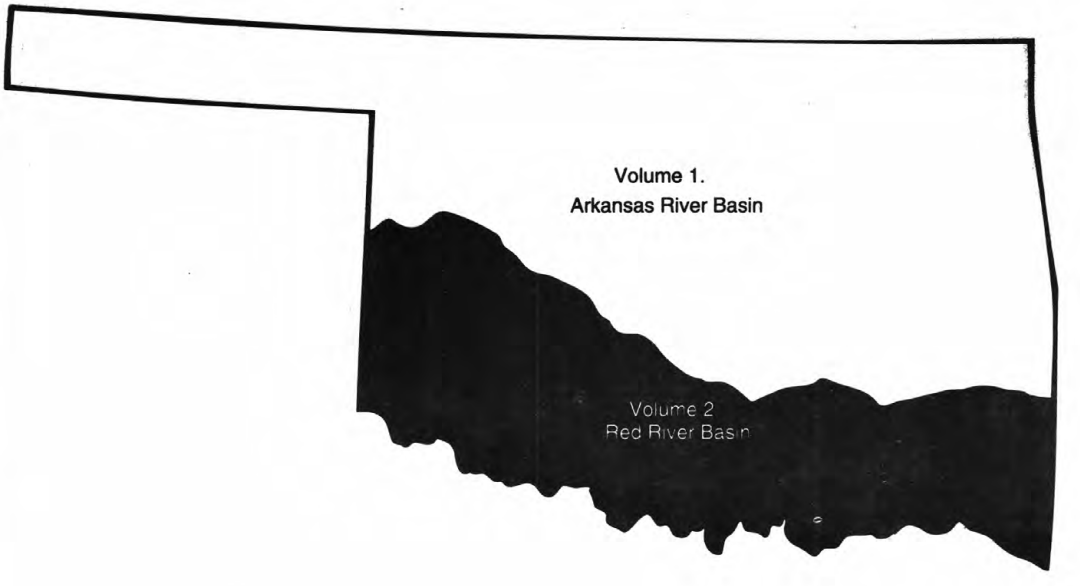
Water Resources Data Oklahoma Water Year 1994

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-94-2
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

1995

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:

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D.L. Boyle	R.E. Johnson	J.E. Norvell	S.D. Smith
C.R. Bullock	C.Z. Jones	L.K. Osburn	R.L. Tortorelli
P.A. Carpenter	J.F. Kerestes	M.L. Phillips	D.M. Walters
T.E. Coffey	J.K. Kurklin	R.D. Ross	D.K. White
R.D. Gist	J.E. May	D.L. Runkle	

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

REPORT DOCUMENTATION PAGE

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13. ABSTRACT *(Maximum 200 words)*

Volumes 1 and 2 of the water resources data for the 1994 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 wells. This report contains discharge records for 118 gaging stations; stage and contents for 8 lakes or reservoirs; water quality for 47 gaging stations; 21 partial-record or miscellaneous streamflow stations and 28 ground-water sites. Also included are lists of discontinued surface-water discharge and water-quality sites. 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.

14. SUBJECT TERMS
*Oklahoma, *Hydrologic data, *Surface water, *Water quality, Flow rate, Gaging stations, Lakes, Reservoirs, Chemical analyses, Sediment, Water temperature, Sampling sites, Water analyses, Ground water

15. NUMBER OF PAGES

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UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED	UL

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ILLUSTRATIONS

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

[Letters after station names designate type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (s) sediment, (t) temperature, (e) elevation, gage heights, or contents]

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

[Letters after station names designate type of data: (d) discharge, (c) chemical, (b) biological, (m) microbiological, (s) sediment, (t) temperature, (e) elevation, gage heights, or contents]

GROUND-WATER WELLS, BY COUNTY, 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
Elk Creek near Hobart, OK	07304500	549	1904-08, 1950-93
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
Beaver Creek near Waurika, OK	07313500	563	1953-93
Cow Creek at Waurika, OK	07313600	193	1966-70
Waurika Lake near Waurika, OK	07313400	562	1977-93
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

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
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
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
Wildhorse Creek near Hoover, OK	07329700	604	1970-93
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
Lake Texoma near Denison, TX	07331500	39,719	1942-93
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

DISCONTINUED SURFACE-WATER DISCHARGE STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Clear Boggy Creek near Wapanucka, OK	07334500	516	1940-43
Clear Boggy Creek near Caney, OK	07335000	720	1943-89
Sardis Lake near Clayton, OK	07335775	275	1982-93
Tenmile Creek near Miller, OK	07336000	68	1956-70
Kiamichi River near Belzoni, OK	07336500	1,423	1926-72
Hugo Lake near Hugo, OK	07336600	1,709	1974-93
Pine Creek Lake Wright City, OK	07337300	635	1969-93
Little River near Wright City, OK	07337500	645	1930-31, 1945-89
Little River near Idabel, OK	07338000	1,173	1930-46
Broken Bow Lake near Broken Bow, OK	07338900	754	1968-93

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 Lakeview, TX	07299495	6,794	1987-88
Prairie Dog Town Fork Red River at Estelline, TX	07299505	7,293	1987-88
Jonah Creek near Newlin, TX	07299510	46.3	1987-88
Jonah Creek near Estelline, TX	07299512	57.1	1987-88
Prairie Dog Town Fork Red River near Childress, TX	07299540	7,725	1987-88
Salt Creek near Childress, TX	07299542	113	1987-88
Buck Creek at Loco, TX	07299545	175	1987-88
Buck Creek near Loco, TX	07299548	205	1987-88
Buck Creek near Childress, TX	07299550	222	1987-88
Red River near Hollis, OK	07299565	8,154	1986-88
Red River near Quanah, TX	07299570	8,321	1986-88
Groesbeck Creek near Quanah, TX	07299580	322	1986-88
Bitter Creek near Hollis, OK	07299705	10.4	1986-88
Sandy Creek near Gould, OK	07299707	169	1987-88
Sandy Creek near Louis, OK	072997087	224	1987-88
Tributary to Sandy Creek near Lincoln, OK	07299709	6.32	1987-88
Sandy Creek at Lincoln, OK	072997092		1986-88
Sandy Creek near Lincoln, OK	072997095	255	1987-88
Sandy Creek near Eldorado, OK	07299710	280	1986-88
Sandy Creek at Eldorado, OK	07299712	297	1987-88
Sandy Creek South of Eldorado, OK, formerly published as Sandy Creek in Eldorado Township, OK	07299714	312	1987-88
Sandy Creek Southeast of Eldorado, OK, formerly published as Sandy Creek near OKlahoma-Texas State-line	07299716	320	1986-88
Wanderers Creek near Odell, TX	07299732	156	1986, 1988
Gypsum Creek North of Eldorado, OK, formerly published as Tributary to Gypsum Creek near Jackson Co Line, OK	07299760	2.12	1986-88
Gypsum Creek near Duke, OK	07299764	14	1986-88
Tributary to Gypsum Creek near Eldorado, OK	07299766	4.53	1986-88
Gypsum Creek near Prairie Hill, OK	07299768	28.1	1987-88

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Gypsum Creek at Creta, OK	07299770	34.6	1987-88
Gypsum Creek near Creta, OK	07299775	56.1	1987-88
Gypsum Creek near Olustee, OK	07299780	99.2	1986-88
Salt Fork Red River near Wellington, TX	07300000	1,222	1987-88
Panther Creek near Wellington, TX	07300005	4.61	1987-88
Salt Fork Red River near Dodson, TX	07300120	1,297	1987-88
Tributary to Salt Fork Red River near Madge, OK	07300140	4.79	1986-88
Salt Fork Red River near Madge, OK	07300145	1,388	1986-88
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
Cave Creek near Reed, OK	07300470	46.7	1986-88
Mulberry Creek near Mangum, OK	07300485	9.3	1986-88
Fish Creek near Mangum, OK	07300495	5.3	1987-88
Salt Fork Red River at Mangum, OK	07300500	1,566	1938-51, 1953-56, 1959-70, 1972, 1974-79, 1986-89
Bitter Creek near Altus, OK	07300600		1986-88
Turkey Creek near McQueen, OK	07300960	51.5	1987-88
Turkey Creek Near Gould, OK, formerly published asTurkey Creek at Jackson-Harmon County-line, OK	07300965	76.9	1987-88
Turkey Creek near Duke, OK	07300970	84.8	1986-88
Tributary to Turkey Creek near Duke, OK	07300975	56.5	1987-88
Turkey Creek at U.S. Highway 62 near Duke, OK	07300980	148	1986-88
Cottonwood Creek near Duke, OK	07300985	54.5	1986-88
Spring Branch at Duke, OK	07300990	14	1986-88
Turkey Creek near Prairie Hill, OK	07300995	238	1987-88
Tributary to Turkey Creek near Prairie Hill, OK	07300997	13.7	1987-88
Horse Branch near Victory, OK	07301020	25.3	1986-88
Tributary to Horse Branch Northwest of Victory, OK, formerly published as Trib to Horse Branch in Duke Twnp near Victory, OK	07301030	8.39	1986-88

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Tributary to Horse Branch at Victory, OK	07301040	0.23	1986, 1988
Turkey Creek near Altus, OK	07301050	309	1986-88
Turkey Creek at Olustee, OK	07301100	317	1986-88
Tributary to Salt Fork Red River near Elmer, OK	07301105		1986-88
Red River near Elmer, OK	07301150	16,459	1986-88
North Fork Red River near Texola, OK	07301315	1,284	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	2,159	1987-90
North Fork Red River near Carter, OK	07301500	2,337	1948-53, 1959-63, 1968-80, 1985-90
North Fork Red River near Granite, OK	07302000	2,494	1938-44
Altus Canal Blw Lake Altus near Lugert, OK	07302510		1949-50
North Fork Red River Blw Altus Dam near Lugert, OK	07303000	2,515	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
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
North Ford Red River near Headrick, OK	07305000	4,244	1951-57, 1958-63, 1968-93

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
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	4,691	1960, 1985-89
East Cache Creek near Elgin, OK	07309000	248	1975-80
East Cache Creek near Walters, OK	07311000	675	1947, 48, 1951-55, 1958-63, 1970-93
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	1,387	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	1,551	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	1,977	1938-45, 1947-50, 1959-63, 1975, 1987-90
Washita River at Carnegie, OK	07325500	3,129	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	3,656	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

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
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	4,706	1942-53
Winter Creek near Alex, OK	07328070	33	1985-87
Washita River at Alex, OK	07328100	4,787	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

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Red River at Denison Dam near Denison, TX	07331600	39,720	1942-43, 1945-49, 1959-85
Red River near Colbert, OK	07332000	39,777	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
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	1,087	1938-81
Byrds Mill Spring near Fittstown, OK	07334200		1953, 1955, 56, 1990-93
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	44,531	1938-80, 1982
Kiamichi River near Clayton, OK	07335790	708	1976-77

DISCONTINUED SURFACE-WATER-QUALITY STATIONS

Station name	Station number	Drainage area (mi^2)	Period of record
RED RIVER BASIN			
Kiamichi River near Antlers, OK	07336200	1,138	1962, 1972-81
Kiamichi River near Belzoni, OK	07336500	1,423	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
Little River Blw Lukfata Creek, near Idabel, OK	07338500	1,226	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
Coal Ck Trib near Lehigh	342652096152202		1977-81
Coal Ck Tributary	342743096154701		1977-81
Little Blue Creek at Pontotoc, OK	342914096370701	11.6	1977-78
Blue River at Ford, OK	343554096250801		1976-77

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 and 2 of this report includes records on both surface water and ground water in the State. Specifically they contain: (1) Discharge records for 118 streamflow-gaging stations, and 21 partial-record or miscellaneous streamflow stations, (2) stage and content records for 8 lakes and reservoirs, (3) water-quality records for 47 streamflow-gaging stations; (4) water-level records for 28 observation wells.

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-94-2." 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 characterize 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 below normal during October, November, January, May, June, and September of the water year. Monthly totals were above normal in April and July. December, February, March, and August totals were about average.

Precipitation was not spread uniformly across the State. Many areas of western Oklahoma reported annual deficits of greater than 5 inches. Generally precipitation was far above normal in northeastern and south-central Oklahoma; far below normal in western Oklahoma, and about normal over the rest of the State. A major snow storm on March 8 and 9 across all of northern Oklahoma alleviated the dry conditions of previous months. Heavy rains in April offset the lower-than-normal precipitation in May; Pawhuska, in east-central Oklahoma, received a 24-hour total of 8.33 inches of precipitation, which led to flash flooding Three children were drowned in a flash flood near Duncan when swept away from an automobile by high waters during the last week of May. In Kenton, in the far northwestern corner of the State, a rare heavy rainfall of 3.18 inches fell on May 9. June was hot and dry across most of the State. Two children were drowned during localized flash flooding at Davis when their family car was swept off a low-water crossing and two golfers were killed by a lightning strike in Oklahoma City. July was the fourteenth wettest during the 104 years of State weather records.

A comparison of daily, monthly, and annual streamflow for the 1994 water year with the period of record at eight selected stations (fig. 1-8) reflected about average conditions in northeastern and southeastern Oklahoma; above-average streamflow for east-central and south-central Oklahoma; and below-average streamflow in western, north-central, and central Oklahoma. 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 1994 water year were minimal for the State. Streamflow was below normal in streams during the entire water year in northwestern Oklahoma (fig. 1). For the north-central, northeastern, central, and southwestern part of the State, streamflow was below average in June (fig. 2-6). In north-central and northeastern Oklahoma, there were high flows in April and May (fig. 2-3). In east-central Oklahoma flows were also high flows from October through December and February through March (fig. 4). In southwestern and central Oklahoma, streamflow was high during March and April (fig. 5-6). In the south-central and southeastern part of the State high flows occurred during December, March, and May (fig. 7-8). Overall the streamflow was below normal in western Oklahoma; above normal in the east-central and south-central part of the State; and normal in the rest of the State, with all annual peak flows in the low to medium flow range, except in the northeastern part of the State, which were in the high flow range.

The worst flooding occurred during April along the Neosho River, causing the evacuation of 50 homes in Miami, in the northeastern part of the State. Local flooding occurred during May in Duncan, south-central Oklahoma, and Tulsa, Rogers, and Nowata counties in northeastern Oklahoma. Locally, heavy thunderstorms during the second week of June produced local flooding in western and southern Oklahoma. Thunderstorms in the eastern two-thirds of the State over the first 2 weeks of July led to local flooding in many areas.

The average discharge streamflow statistic for the 1994 water year also illustrates normal runoff conditions in northeastern and southeastern Oklahoma, above-normal streamflow for east-central and south-central part of the State

and below-normal runoff conditions for the rest of the State.

The following table presents a comparison of streamflow for the 1994 water year with streamflow for the period of record at the eight selected stations:

STATION IDENTIFICATION	Statistics of discharge during 1994 water year (cubic feet per second)			Statistics of discharge during period of record (cubic feet per second)		
	Maximum instantaneous	Minimum mean daily	Average	Maximum instantaneous	Minimum mean daily	Average
ARKANSAS RIVER BASIN						
07152500 Arkansas River at Ralston	56,500	353	3,822	211,000	14	4,826
				(Prior to regulation 1926-75)		
				174,000	52	5,641
				(Since regulation by Kaw Lake 1977-94)		
07185000 Neosho River near Commerce	106,000	83	3,509	267,000	0	3,744
						(1940-94)
07197000 Baron Fork at Eldon	9,240	43	398	50,600	1.8	325
						(1949-94)
07231500 Canadian River at Calvin	20,800	70	916	174,000	0	1,773
					(1906, 1939-42, 1945-1994)	
07237500 North Canadian River at Woodward	209	1.2	30.6	42,000	0	194
				(Prior to regulation 1939-78)		
				3,090	0	97.8
				(Since regulation by Optima Lake 1979-94)		
RED RIVER BASIN						
07300500 Salt Fork Red River near Mangum	1,010	0	36.4	72,000	0	85.2
						(1938-94)
07331000 Washita River near Dickson	32,900	160	2,034	98,000	0	1,573
				(Prior to regulation 1929-58)		
				118,000	0.10	1,750
				(Since regulation by Fort Cobb Reservoir 1962-94)		
07332500 Blue River near Blue	7,920	39	361	65,200	0	323
						(1937-94)

Conservation storage in four selected reservoirs in the State indicates that conservation storage was reduced when comparing the start of the water year to the end of the water year.

The following table presents a comparison of conservation storage capacity for the start and end of the 1994 water year for the four selected reservoirs:

STATION IDENTIFICATION	Conservation Storage Capacity			
	Start of 1994 water year		End of 1994 water year	
	(acre-feet)	(percent)	(acre-feet)	(percent)
ARKANSAS RIVER BASIN				
07190000 Lake O' the Cherokees at Langely	2,035,000	136	1,492,000	100
07229900 Lake Thunderbird near Norman	116,200	59	108,400	55
RED RIVER BASIN				
07302500 Lake Altus at Lugert	79,590	60	25,460	19
07324300 Foss Reservoir near Foss	162,400	37	154,200	35

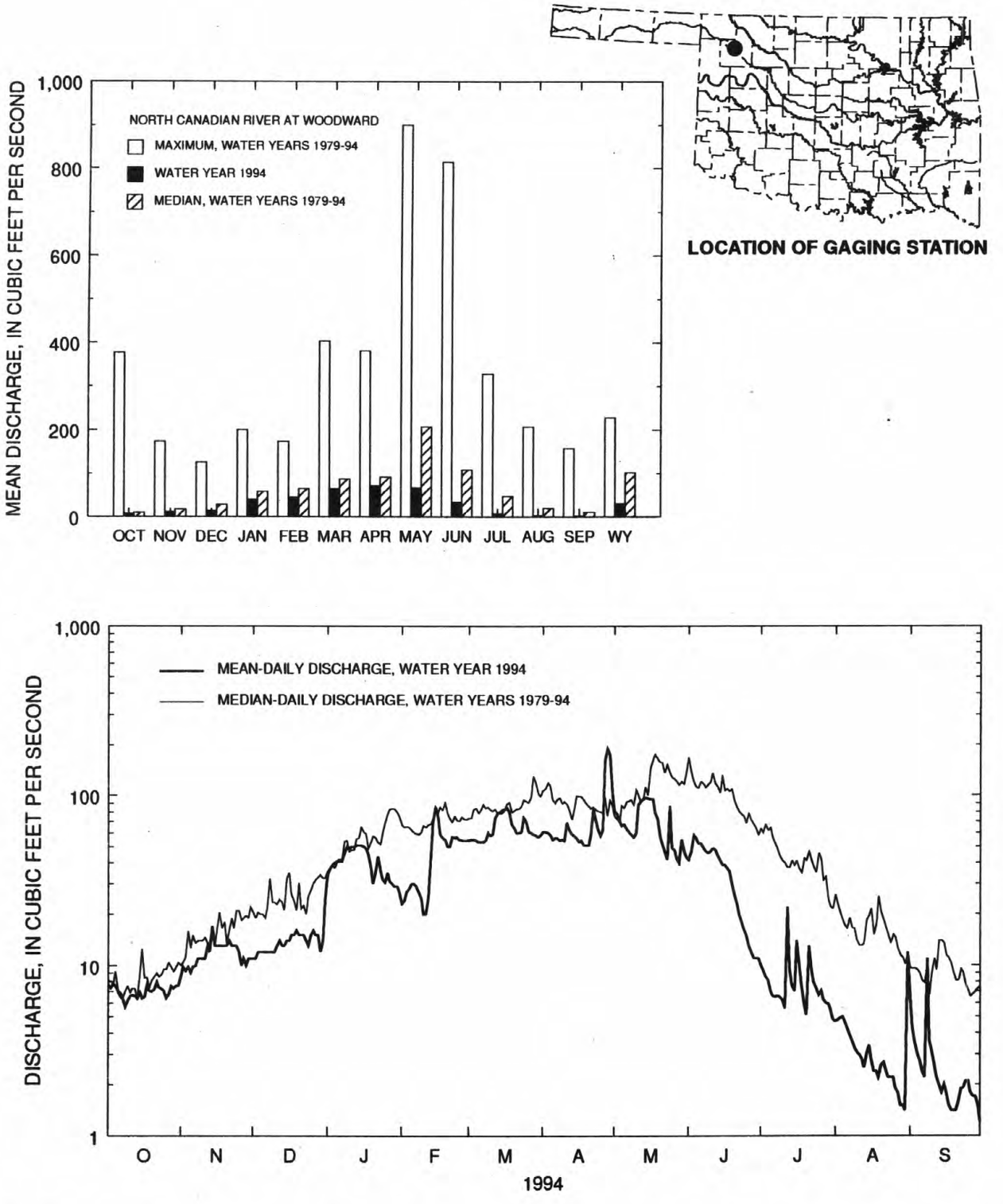


Figure 2.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for North Canadian River at Woodward, Oklahoma.

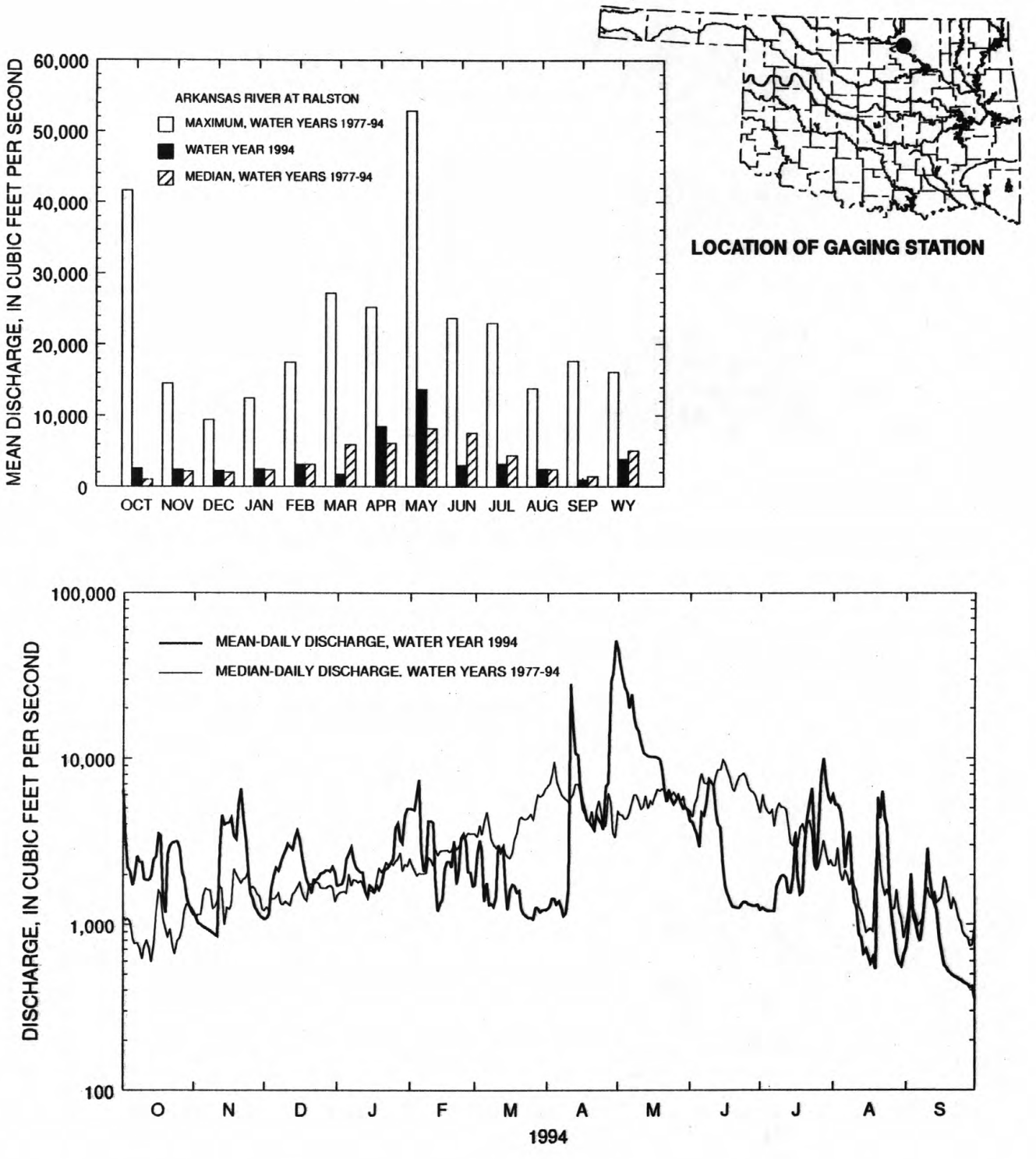


Figure 2.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for Arkansas River at Ralston, Oklahoma.

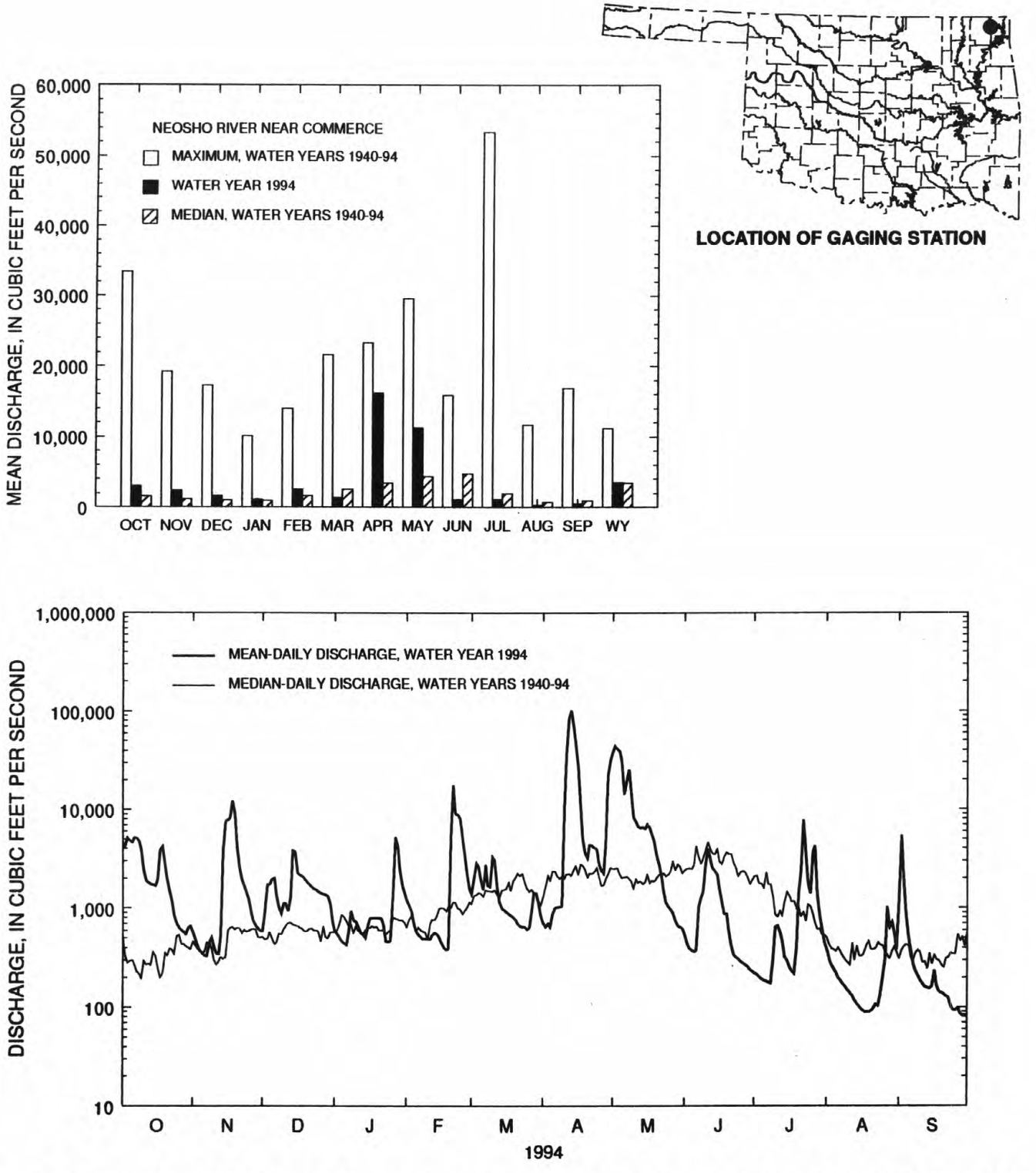


Figure 3.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for Neosho River near Commerce, Oklahoma.

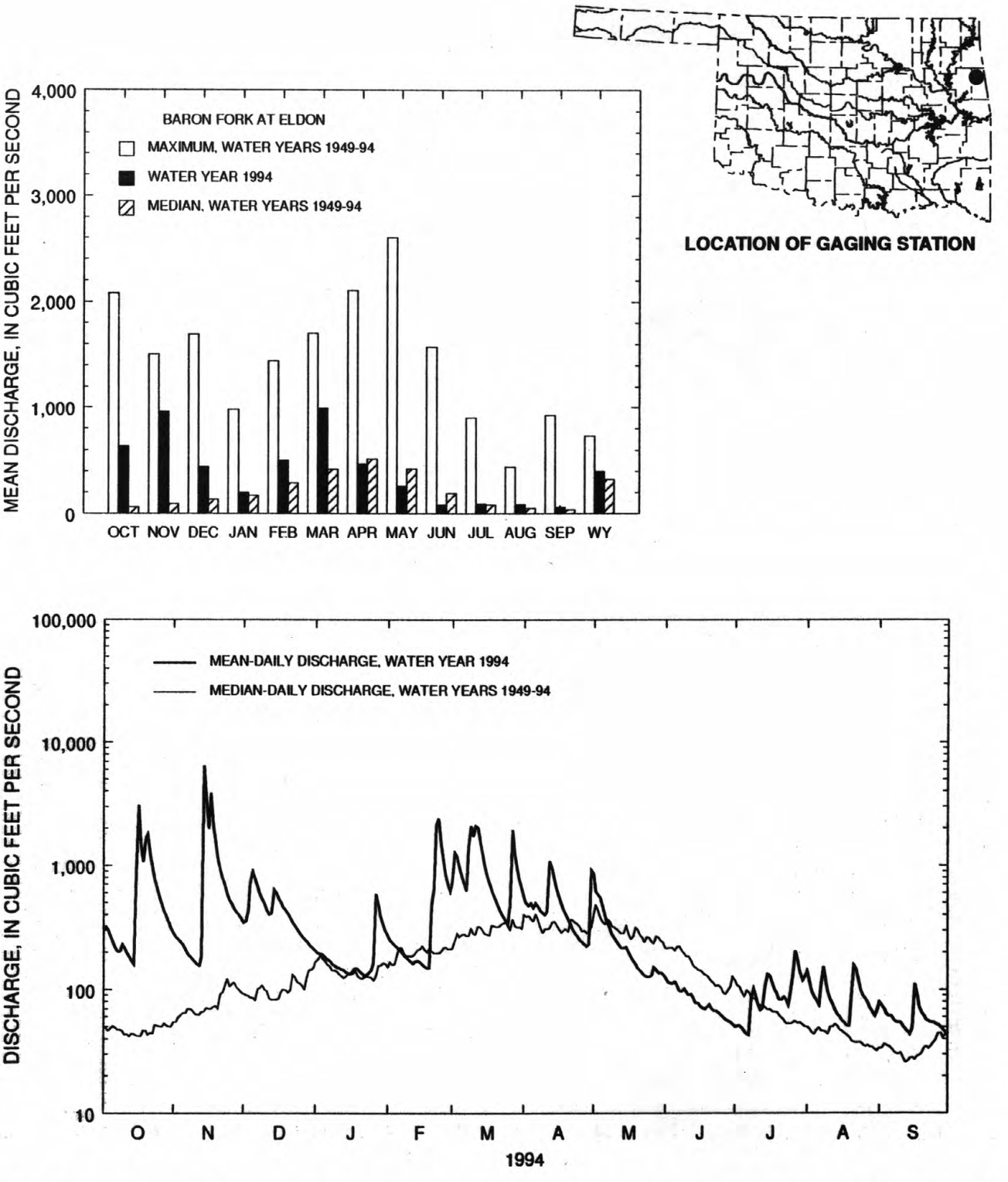


Figure 4.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for Baron Fork at Eldon, Oklahoma.

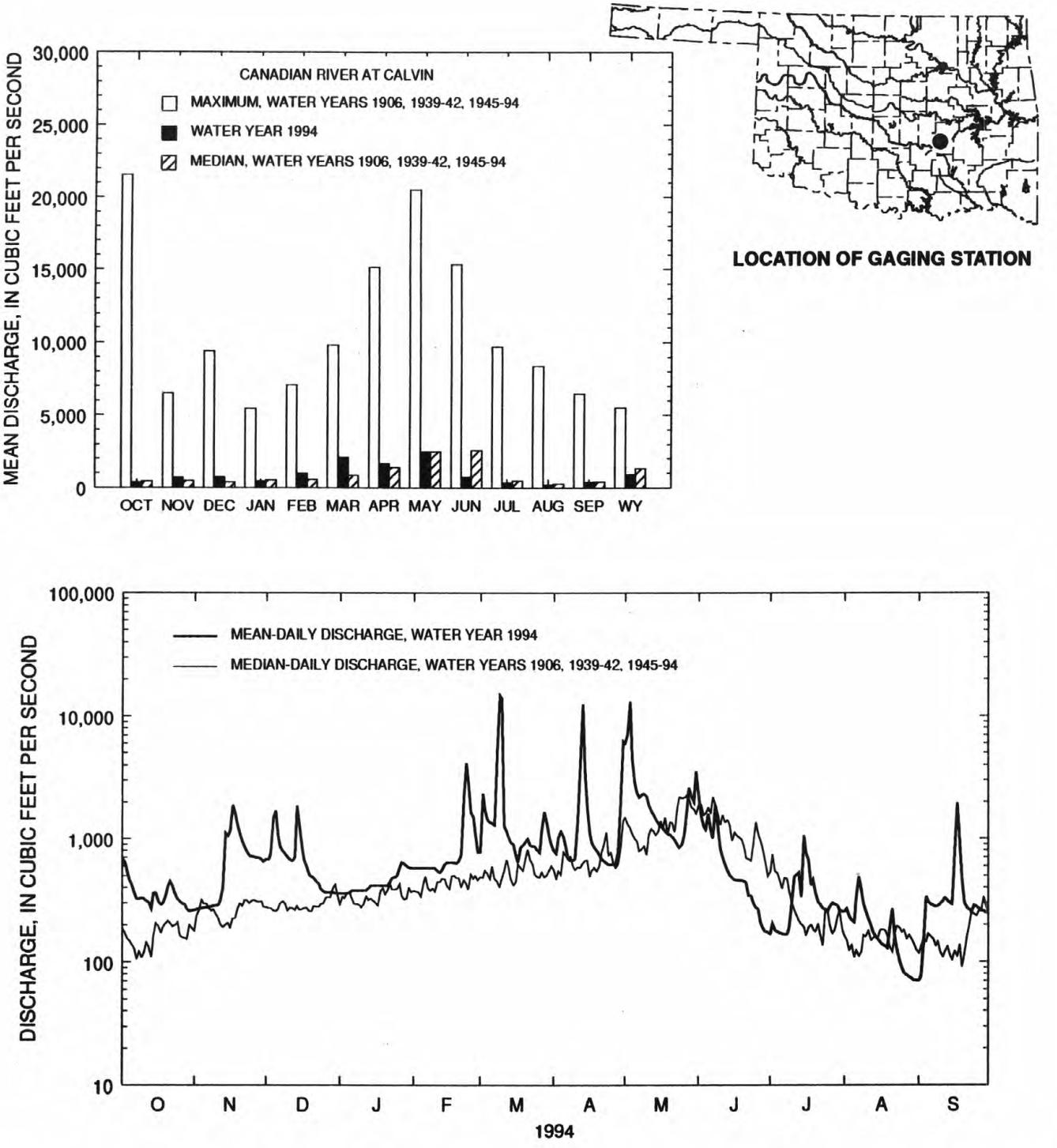
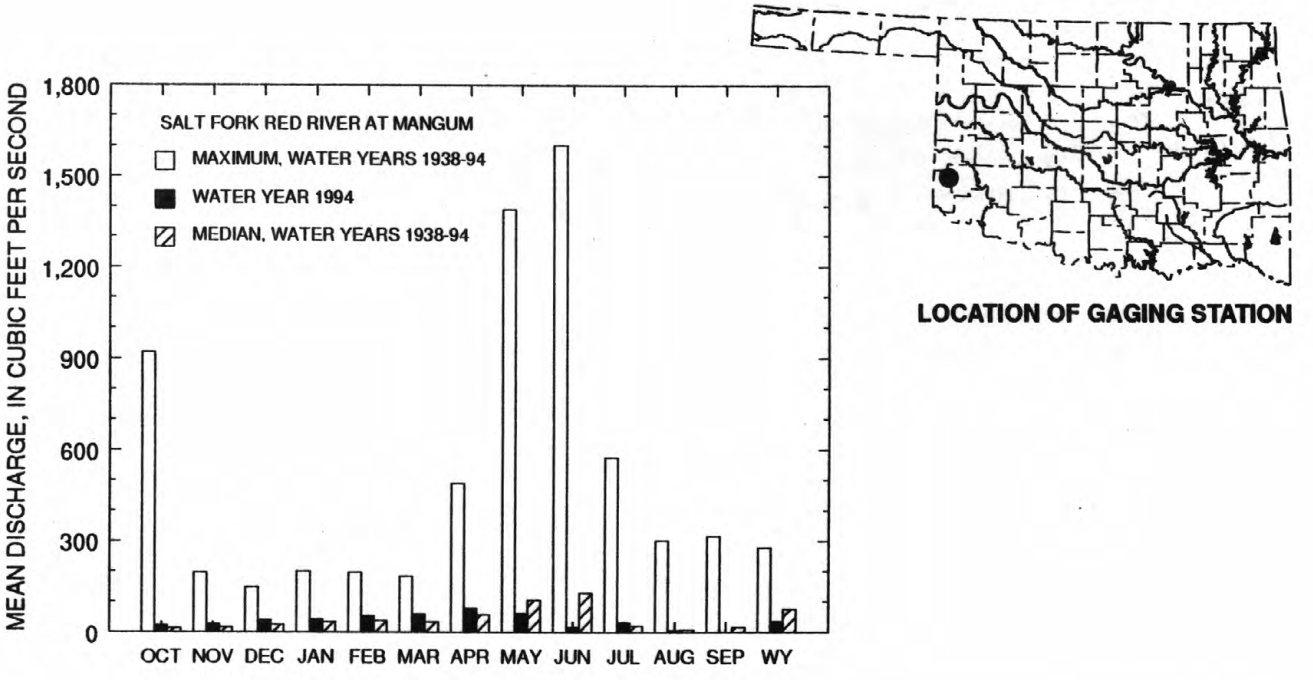


Figure 5.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for Canadian River at Calvin, Oklahoma.



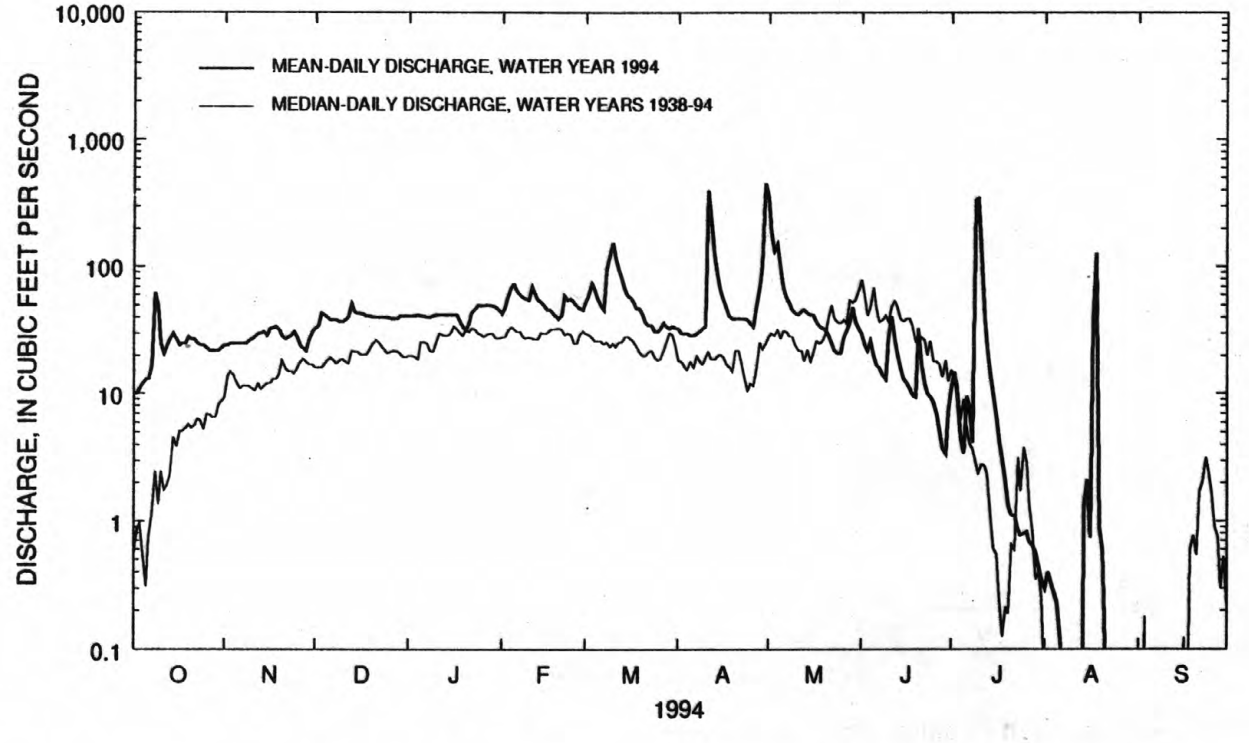


Figure 6.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for Salt Fork Red River at Mangum, Oklahoma.

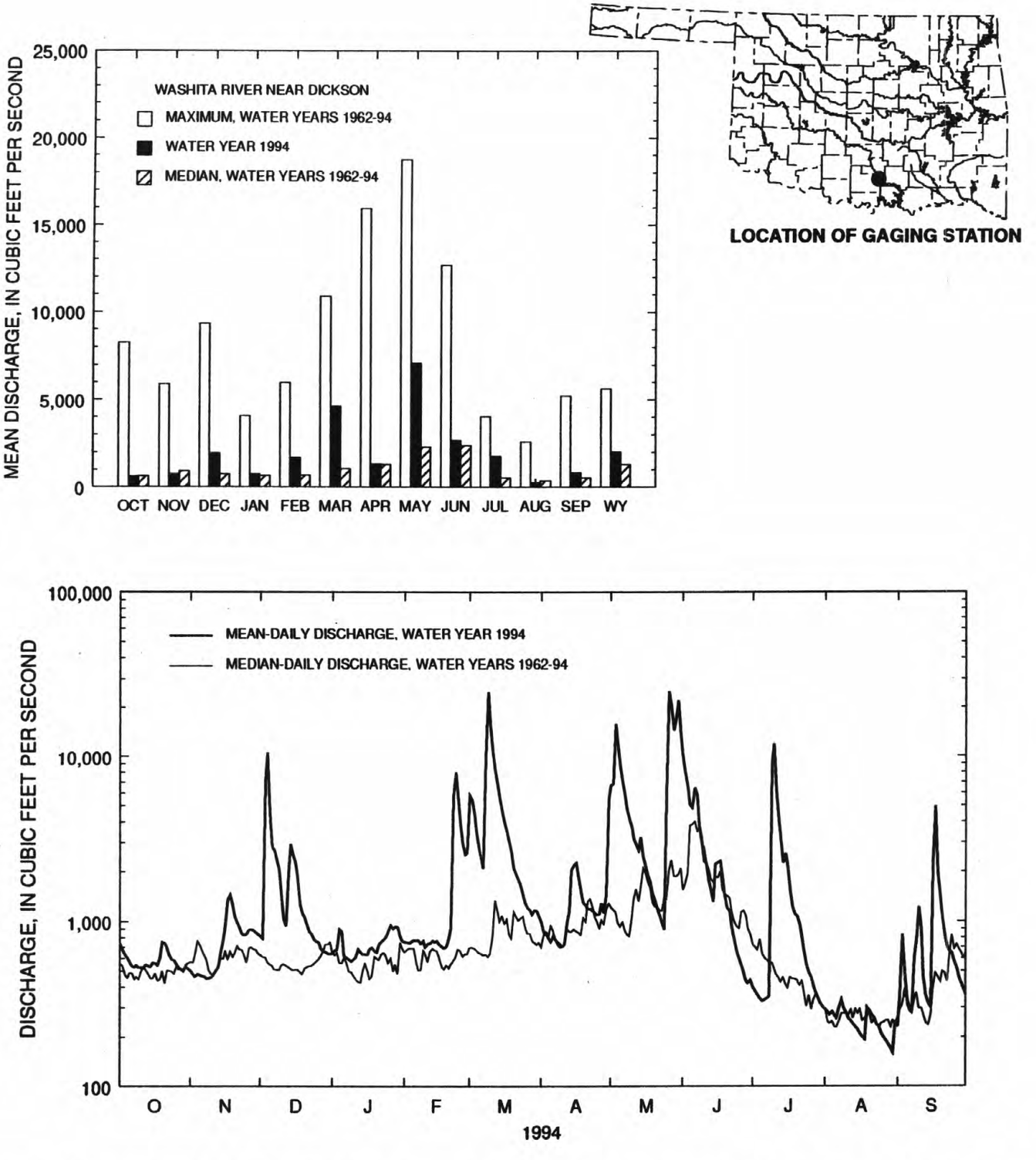


Figure 7.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for Washita River near Dickson, Oklahoma.

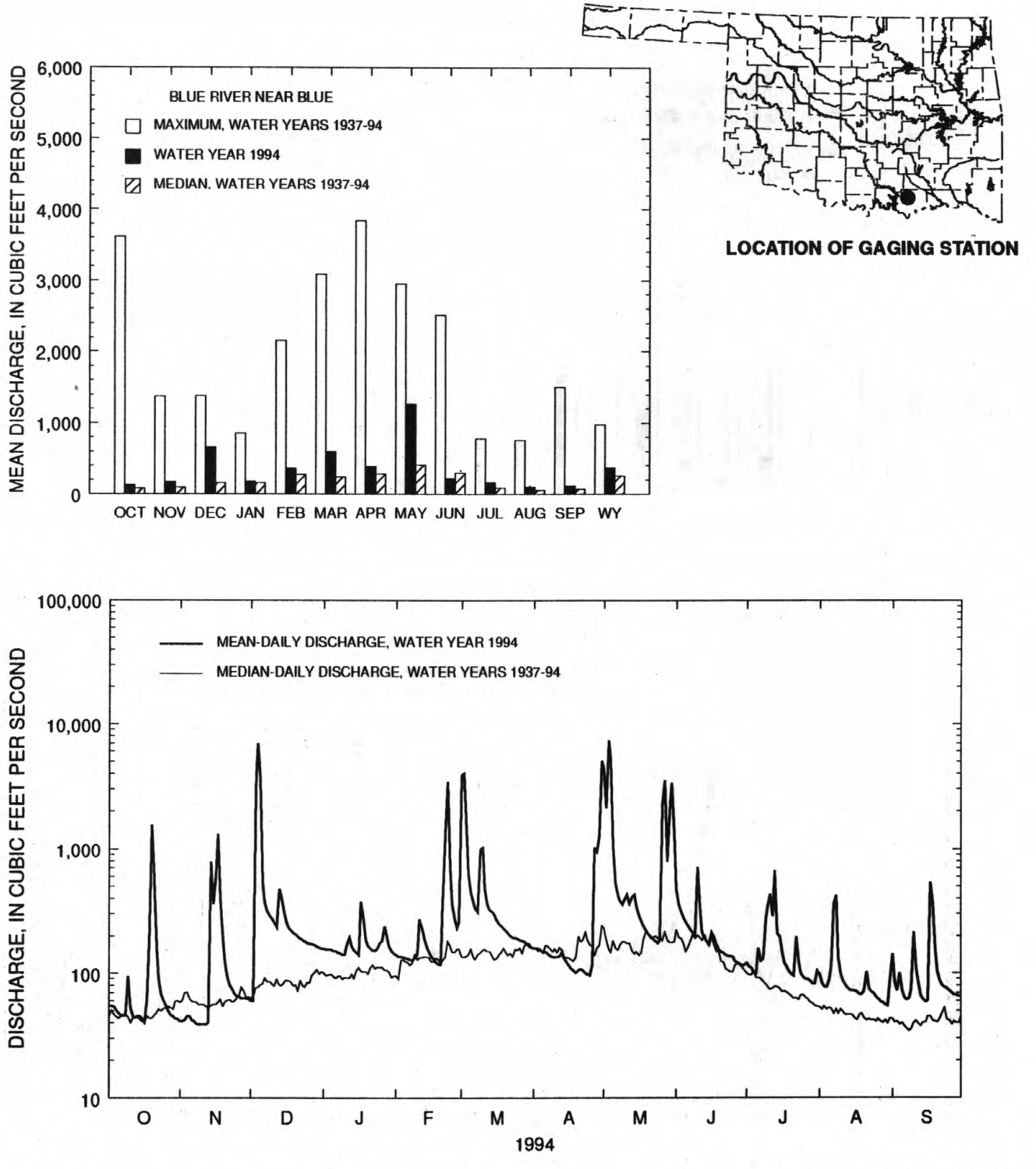


Figure 8.—Comparison of daily, monthly, and annual discharges for water year 1994 and period of record for Blue River near Blue, Oklahoma.

Chemical Quality of Streamflow

The concentrations of selected dissolved chemical constituents measured at surface-water sampling stations in the State during the 1994 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 1994 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 1994 water year are compared to maximum and minimum concentrations for the 1970 through 1990 water years.

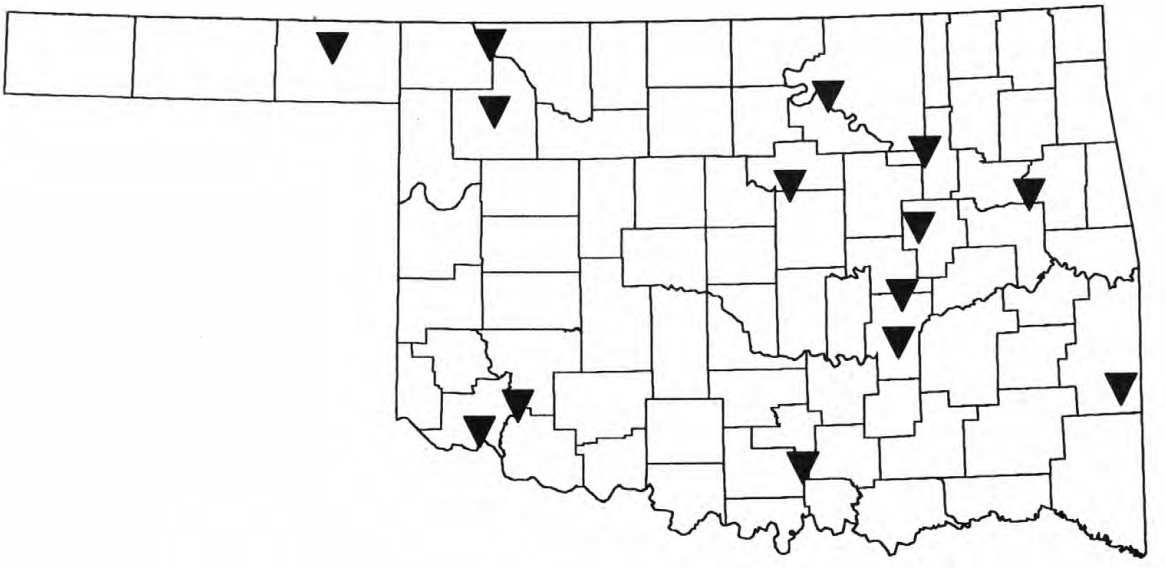


Figure 9.—Location of water-quality stations on selected principal streams.

The maximum dissolved-solids concentration measured in these streams in 1994 was 27,800 milligrams per liter (mg/L) in the Cimarron River near Buffalo. The minimum concentrations for 1994 are larger than the 20-year minimums. The maximum concentrations for 1994 are smaller than the 20-year maximums. Dissolved-solids concentrations, in mg/L, are shown in the following graphs:

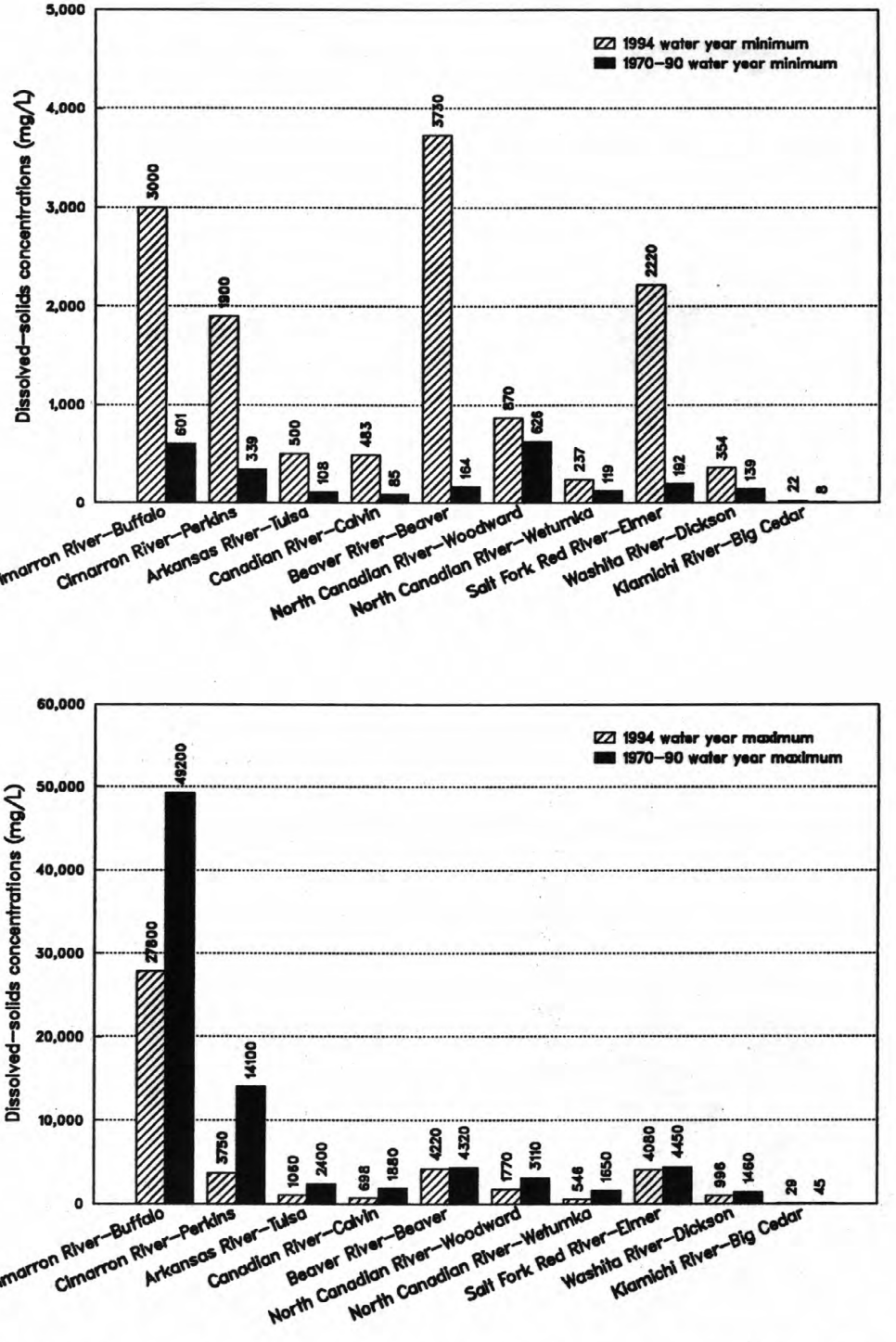
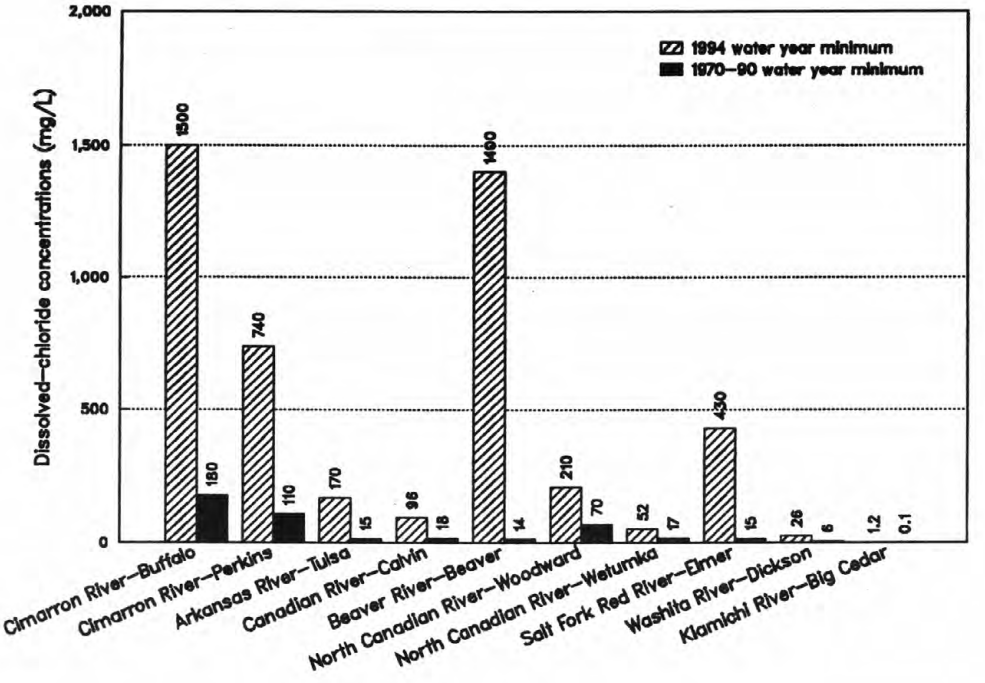


Figure 10.—Comparisons of minimum and maximum dissolved-solids concentrations, in milligrams per liter (mg/L), for water year 1994 and water years 1970-90.

The maximum dissolved-chloride concentration measured at the selected stations in 1994 was 16,000 mg/L in the Cimarron River near Buffalo. The minimum chloride concentrations for 1994 were larger than the 20-year minimums. The maximum concentrations for 1994 were smaller than the 20-year maximums, except for the value at Beaver River at Beaver. The 1994 value equalled the 20-year maximum. Dissolved-chloride concentrations, in mg/L, are shown in the following graphs:



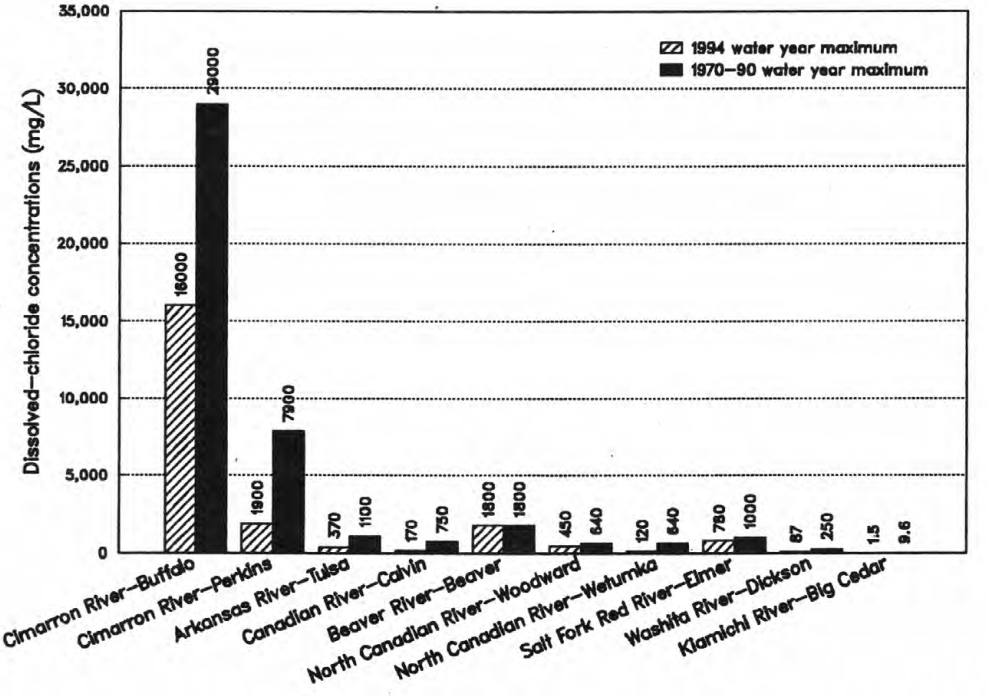
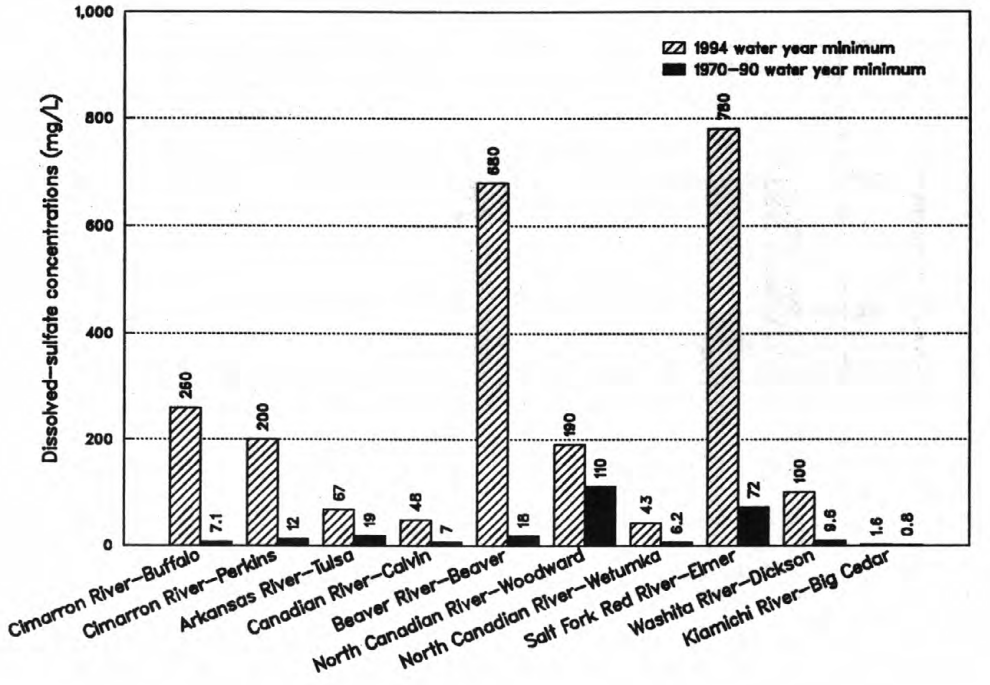


Figure 11.—Comparisons of minimum and maximum dissolved-chloride concentrations, in milligrams per liter (mg/L), for water year 1994 and water years 1970-90.

The maximum dissolved-sulfate concentration measured at the selected stations in 1994 was 1,700 mg/L in the Salt Fork Red River near Elmer. The minimum concentrations for 1994 are larger than the 20-year mnimums. The maximum concentrations for 1994 are small than the 20-year maximums. Dissolved-sulfate concentrations, in mg/L, are shown in the following graphs:



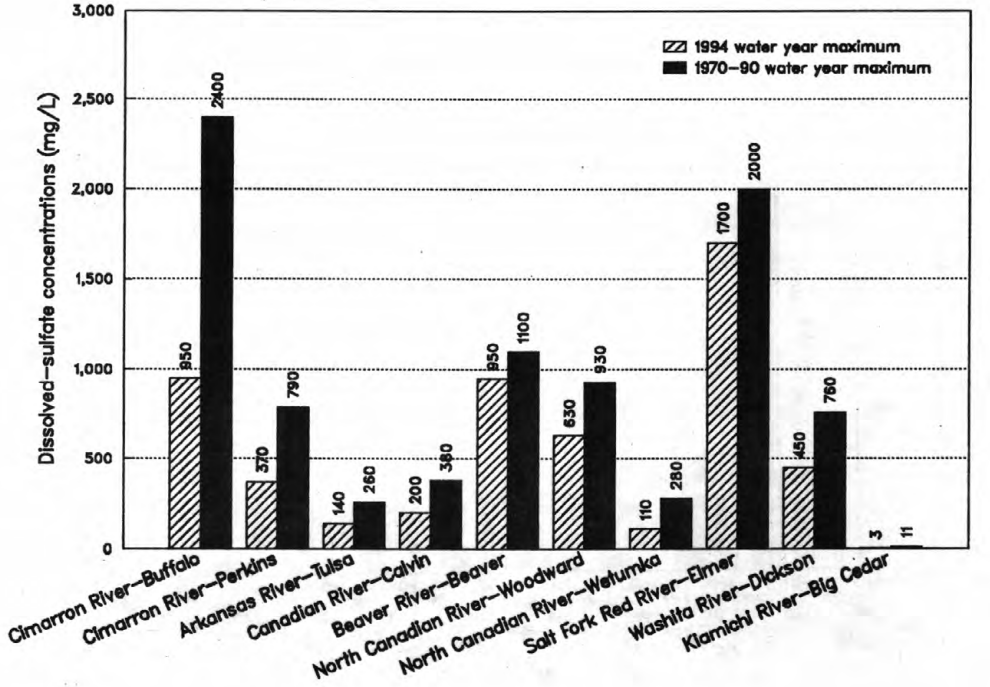


Figure 12.—Comparisons of minimum and maximum dissolved-sulfate concentrations, in milligrams per liter (mg/L), for water year 1994 and water years 1970-90.

The maximum suspended-sediment concentration measured at the selected stations in 1994 was 1,280 mg/L in the Cimarron River near Buffalo. The minimum suspended-sediment concentrations for 1994 were larger than the 20-year values, except for the 1994 value for North Canadian River at Woodward, which was smaller. The maximum concentrations were smaller than the 20-year maximums. Suspended-sediment concentrations, in mg/L, are shown in the following graphs:

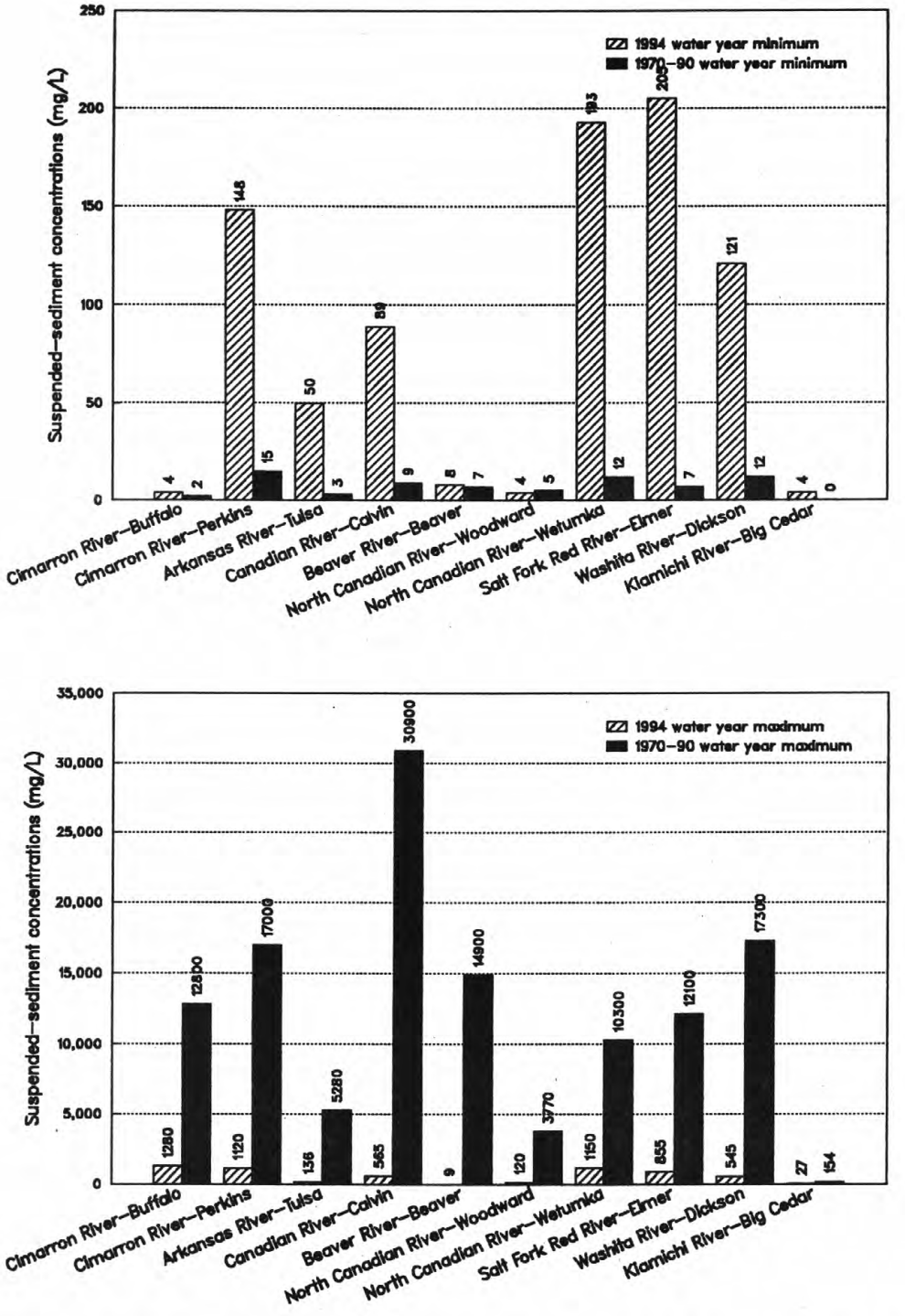


Figure 13.—Comparisons of minimum and maximum suspended-sediment concentrations, in milligrams per liter (mg/L), for water year 1994 and water years 1970-90.

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 that are measured quarterly, monthly, or are equipped with continuous recorders.

Figures 14-18 show 3-year hydrographs for five of the network 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 continues its decline of nearly one foot per year for the last six years after a reversal last water year.

Conversely, the Taloga GW well (Dewey County) (fig. 17) hydrograph shows rising water levels in the Rush Springs aquifer for the last three years. The Taloga well was the only reporting well 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 receding after elevated levels for the past two years.

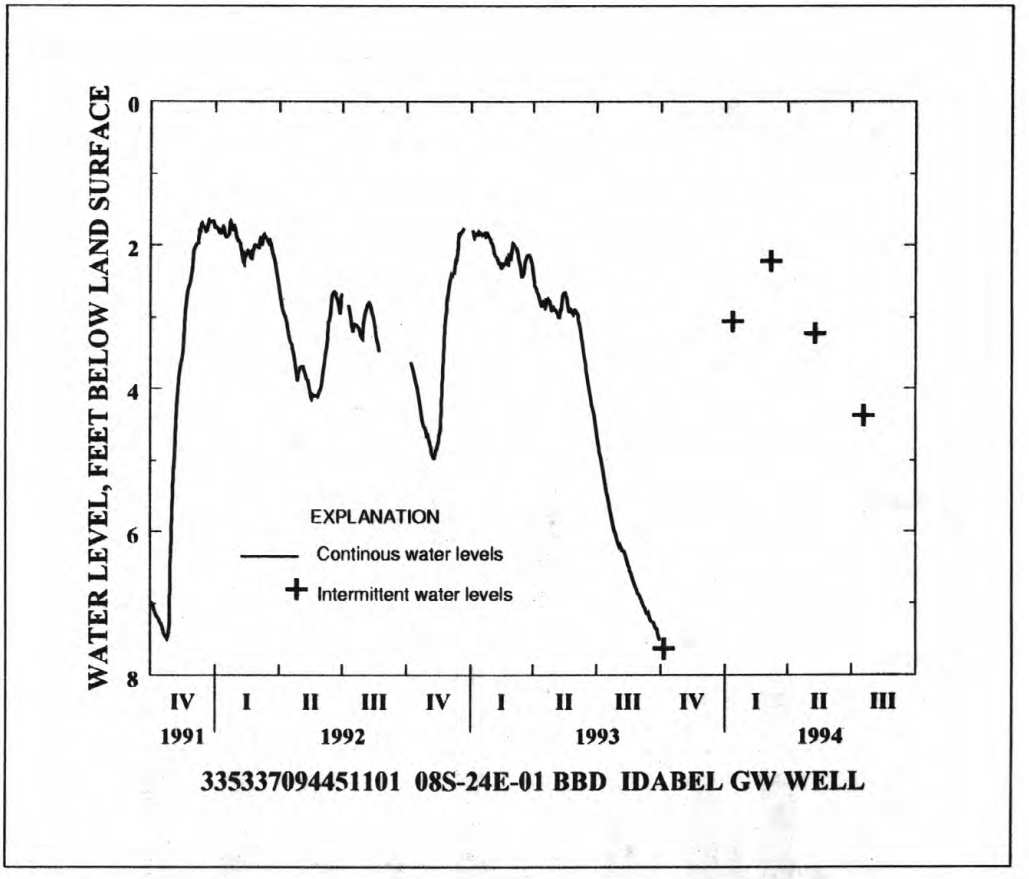


Figure 14.—Hydrograph for well 08S-24E-01 BBD 1 (Idabel GW Well, 335337094451101) for water years 1992-94.

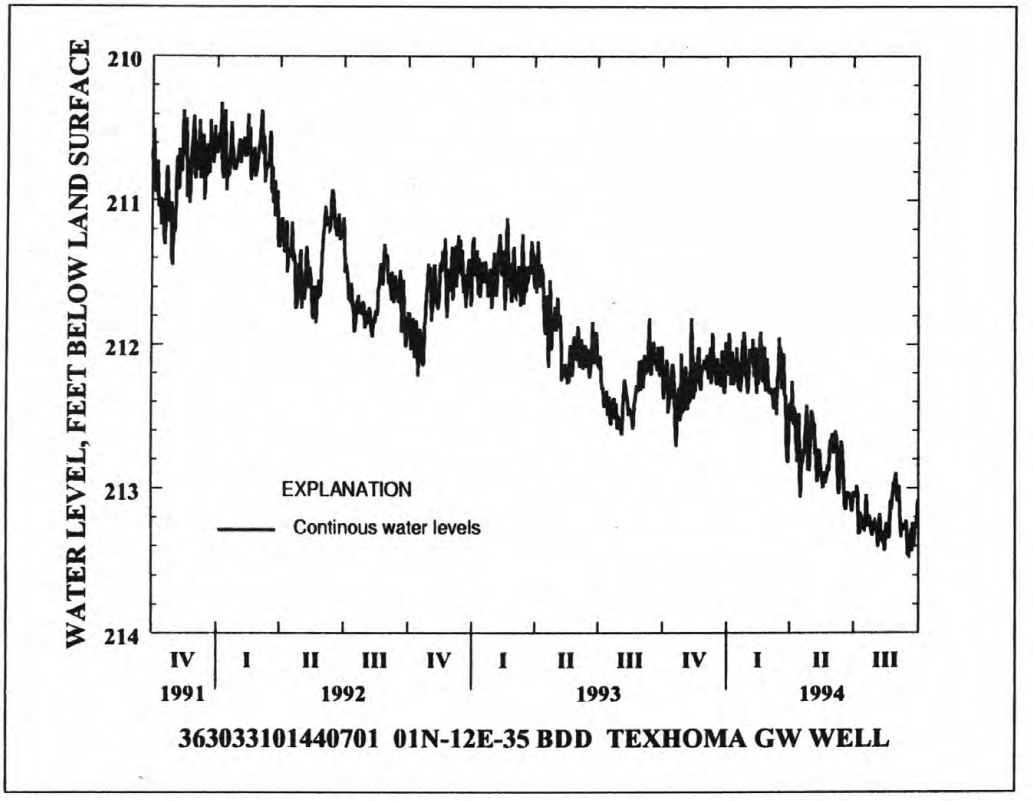


Figure 15.—Hydrograph for well 01N-12E-35 BBD 1 (Texhoma GW Well, 363033101440701) for water years 1992-94.

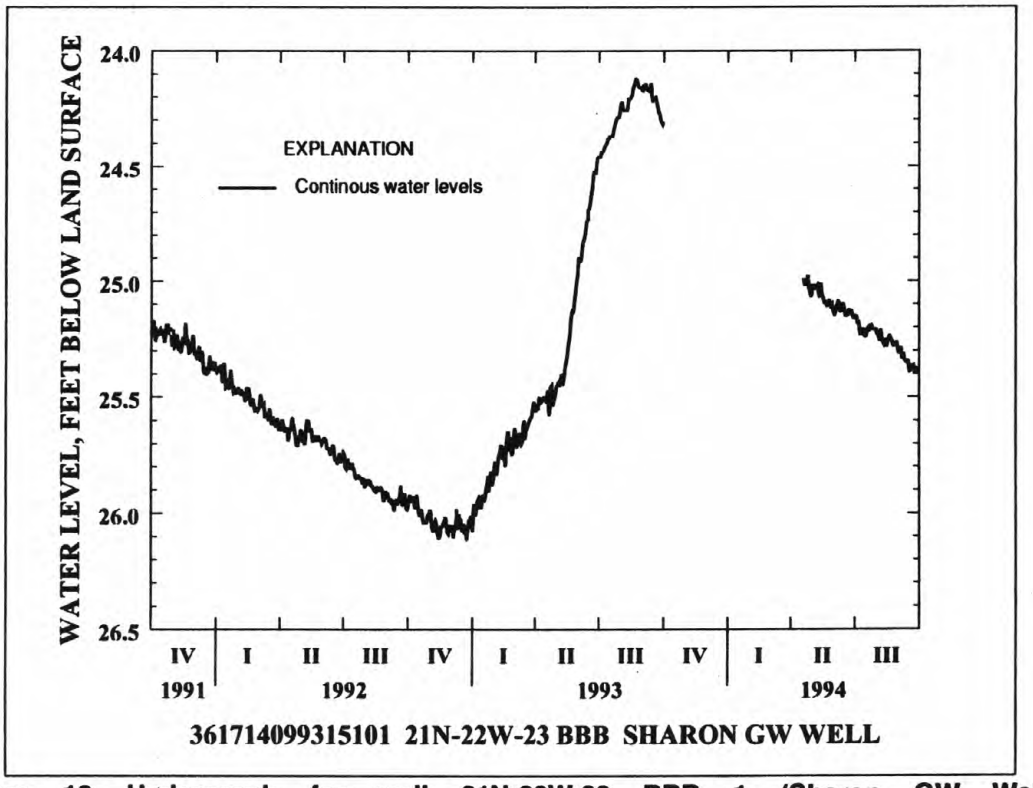


Figure 16.—Hydrograph for well 21N-22W-23 BBB 1 (Sharon GW Well, 361714099315101) for water years 1992-94.

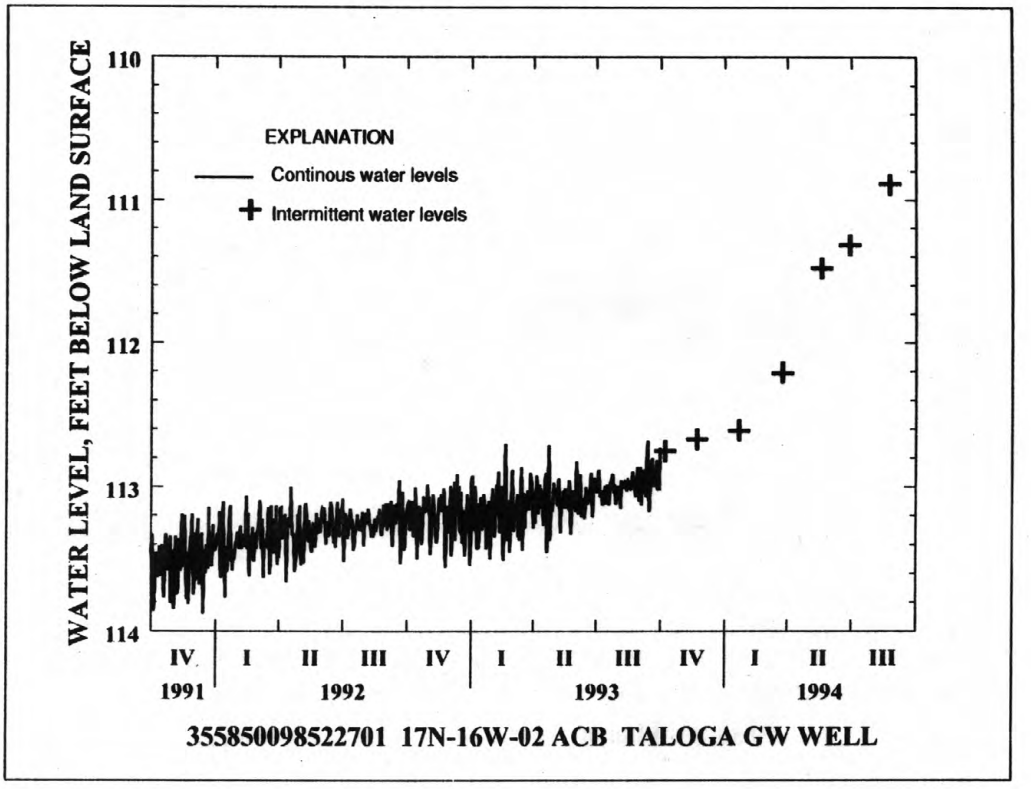


Figure 17.—Hydrograph for well 17N-16W-02 ACB 1 (Taloga GW Well, 355850098522701) for water years 1992-94.

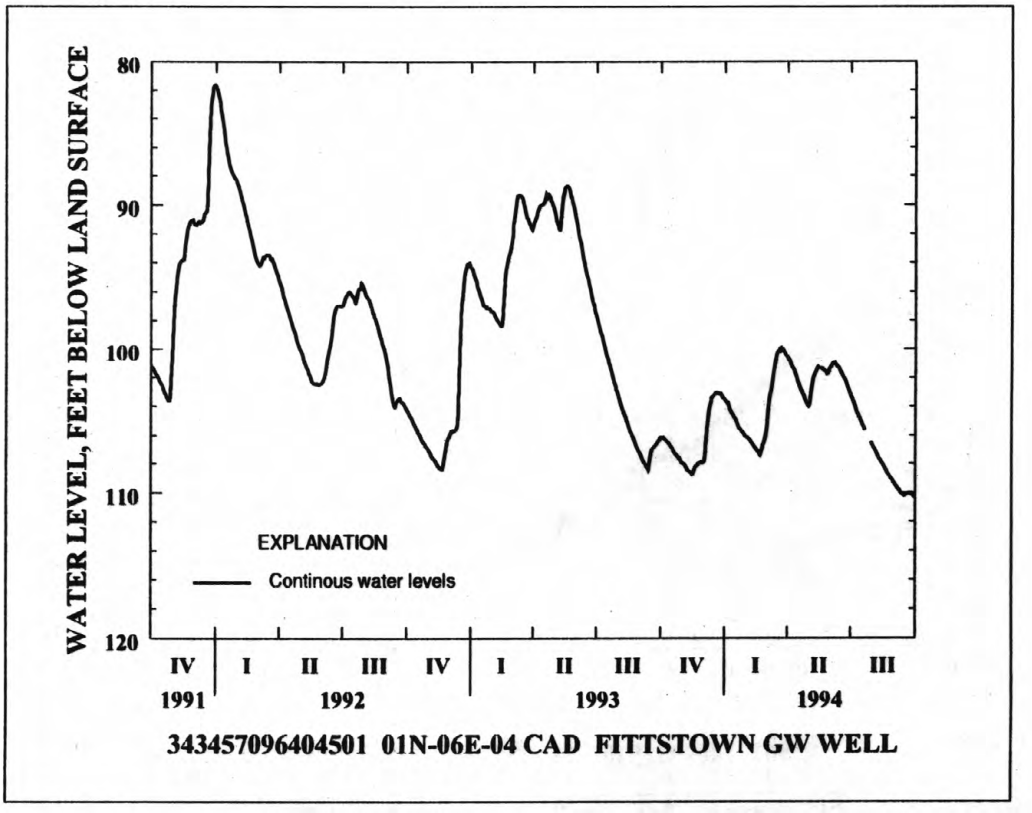


Figure 18.—Hydrograph for well 01N-06E-04 CAD 1 (Fittstown GW Well, 343457096404501) for water years 1992-94.

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Bench-Mark Network is a network of 53 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.

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 284 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 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).

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, diverse, and geographically distributed part of the Nation's ground- and surface-water resources, and to identify, describe, and explain the major natural and human factors that affect these observed conditions and trends.

Assessment activities have begun in about two-thirds of the study units and ultimately will be conducted in 60 study units (major watersheds and aquifer systems) that represent a wide range of environmental settings nationwide and that account for a large percentage of the Nation's water use. A wide array of chemical constituents will be measured in ground water, surface water, streambed sediments, and fish tissues. The coordinated application of comparative hydrologic studies at a wide range of spatial and temporal scales will provide information for decision making by water-resources managers and a foundation for aggregation and comparison of findings to address water-quality issues of regional and national interest.

Radiochemical Programs is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF THE RECORDS

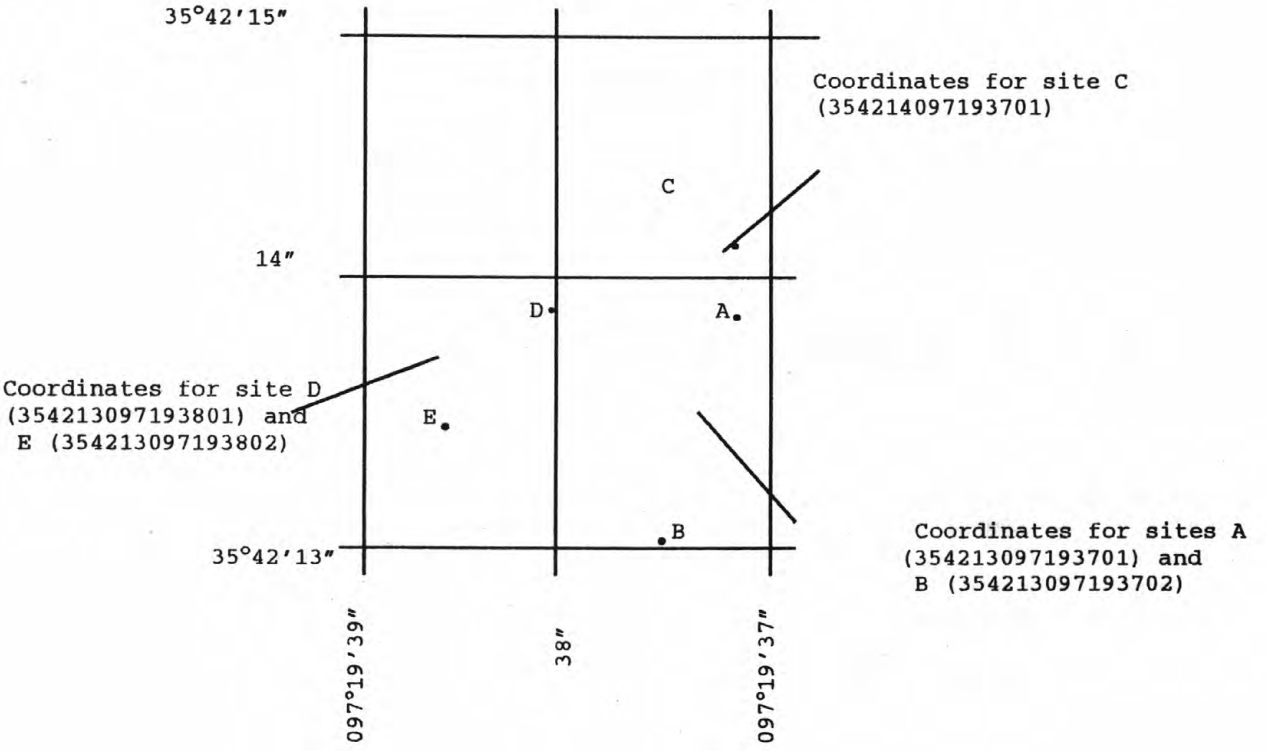
The surface-water and ground-water records published in this report are for the 1994 water year that began Oct. 1, 1993, and ended Sept. 30, 1994. A calendar of the water year is provided on the inside of the front cover. The records contain streamflow data, stage and content data for lakes and reservoirs, 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 19-21. 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



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

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, 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 figure 19.

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 A1 through A19 and Book 8, Chapters A2 and B2. The methods are consistent with the American Society with the American society for Testing and Materials (ASTM) standards and generally follow the standards of the International Organization for Standards (ISO).

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 continuous-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 works 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 previously 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-flow 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 is exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge is exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge is exceeded 90 percent of the time 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 rectangular 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 ft3/s; to the nearest tenth between 1.0 and 10 ft3/s; to whole numbers between 10 and 1,000 ft3/s; and to 3 significant figures for more than 1,000 ft3/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 on-site measurements and for collecting, treating, and shipping samples are detailed in TWRI Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, and A4. These references are listed in PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS section of this report. These methods are consistent with ASTM standards and generally follow ISO standards.

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. Methods used in the computation of sediment records are described in the TWRI Book 3, Chapters C1 and C3. These methods are consistent with ASTM standards and generally follow ISO standards.

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 to analyze sediment samples and to compute sediment records are described in the TWRI, Book 5, Chapter C1. Methods used by the U.S. Geological Survey laboratories are given in the TWRI, Book 1, Chapter D2; Book 3, Chapter C2; and Book 5, Chapters A1, A3, A4, and A5. These methods are consistent with ASTM standards and generally follow ISO standards.

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.

Remarks 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 (ng/L). 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 began using new trace-element protocols at all stations in the water year 1994.

Records of Ground-Water Levels

Only water-level data from a national network of observation 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 21.

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 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-cell, colonial, or multicelled plants, containing chlorophyll 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 35oC ± 1.0oC 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 500oC for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m3), and periphyton and benthic organisms in grams per square meter (g/m2).

Dry mass refers to the mass of residue present after drying in an oven at 105oC 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 (CaCO3).

HWM is a high-water mark or flood mark.

Hydrologic Benchmark Network is a network of 53 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 284 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 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).

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 (m2), 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 nuisance 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/m3.time)] for periphyton and macrophytes and [mg C/(m3.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/(m3.time)] for periphyton and macrophytes and [mg O/m3.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 (ft3/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 multiplet 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, Branch of Information Services, Box 25286, Federal Center, 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. Ficke, 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. MacCary: 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 measurement 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-Al0. *Discharge ratings at gaging stations,* by E. J. Kennedy: USGS--TWRI Book 3, Chapter A10. 1984. 59 pages.

3-A11. *Measurement of discharge by the 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,* Revised, by J. F. Wilson, Jr., E. D. Cobb, and F. A. Kilpatrick: USGS- -TWRI Book 3, Chapter A12. 1986. 34 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.

3-A16. *Measurement of discharge using tracers*, by F. A. Kilpatrick and E. D. Cobb: USGS--TWRI Book 3, Chapter A16. 1985. 52 pages.

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. Rathbun, Nobuhiro Yotsukura, G. W. Parker, and L. L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.

3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS--TWRI Book 3, Chapter A19. 1990. 31 pages.

3-A20. *Simulation of soluable waste transport and buildup in surface waters using tracers*, by F. A. Kilpatrick: USGS--TWRI Book 3, Chapter A20. 1993. 38 pages.

3-B1. *Aquifer-test design, observation, and data analysis,* by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programed 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. 190 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.

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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, editors: 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.

5-A3. *Methods for the determination of organic substances in water and fluvial sediments,* edited by R. L. Wershaw, M. J. Fishman, R. R. Grabbe, and L. E. Lowe: USGS--TWRI Book 5, Chapter A3. 1987. 80 pages.

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-flow 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. Schaffranek, 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.

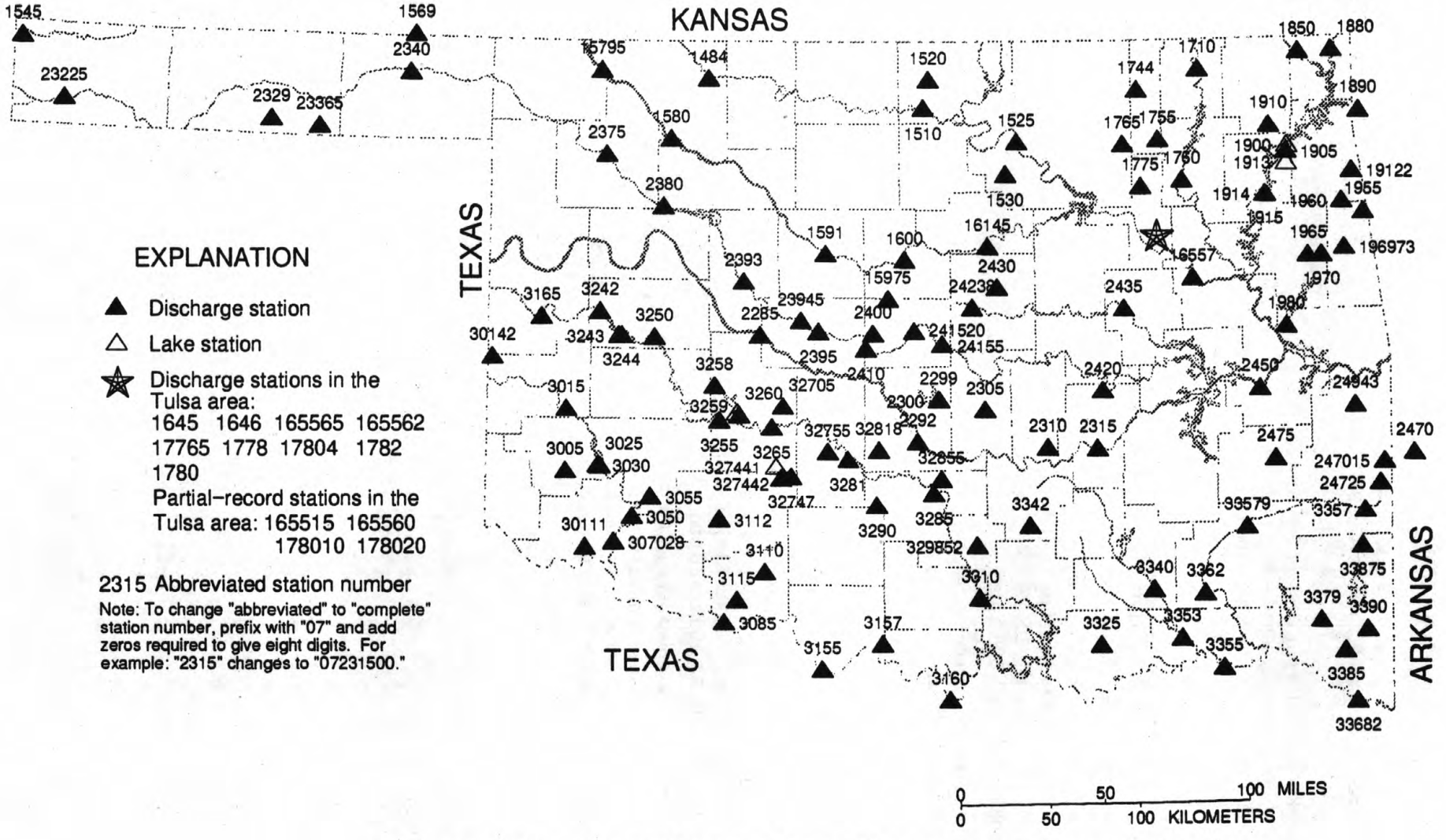


Figure 19.--Locations of continuous and partial-record surface-water stations, water year 1994

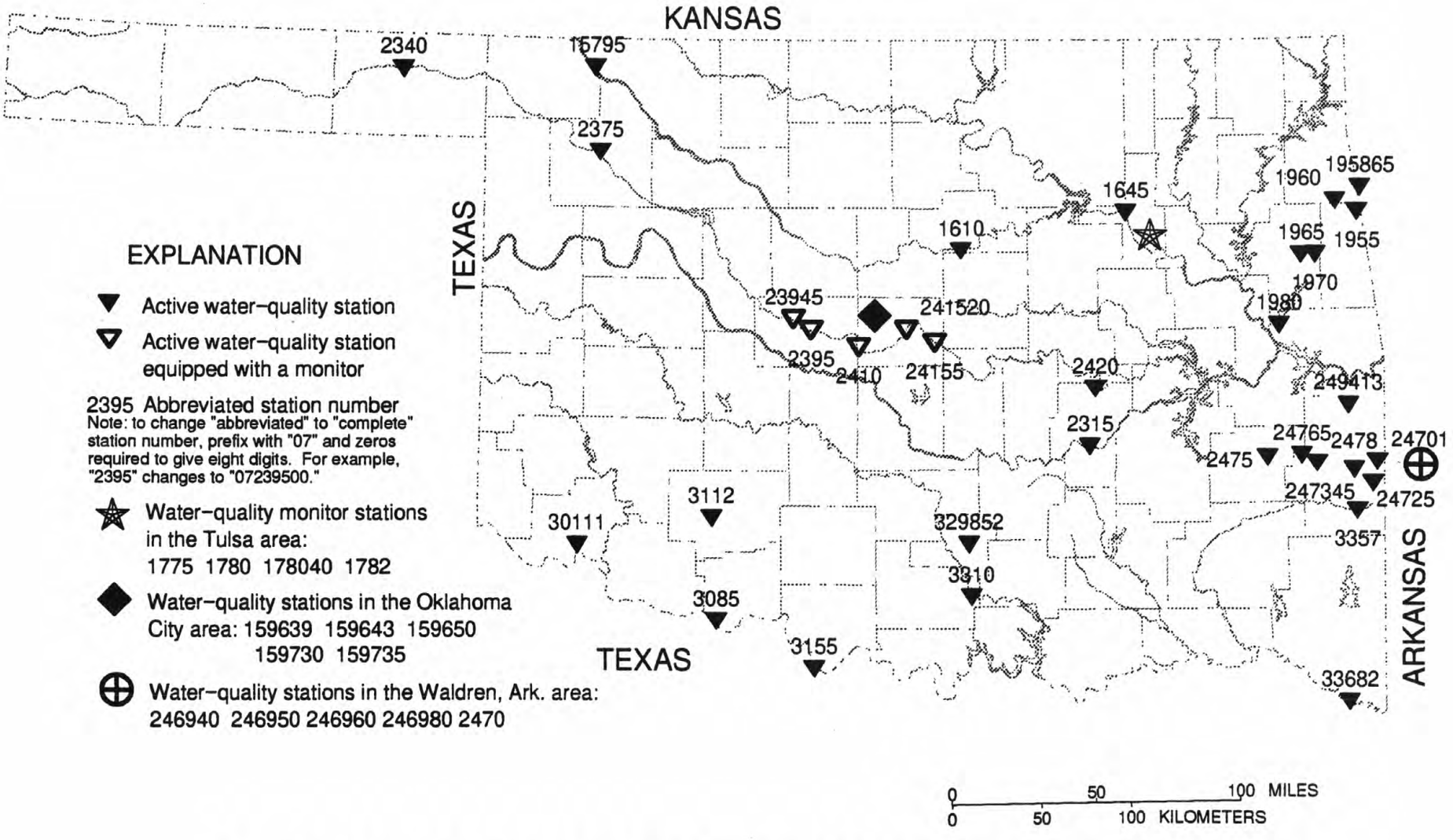


Figure 20.--Locations of water-quality stations, water year 1994

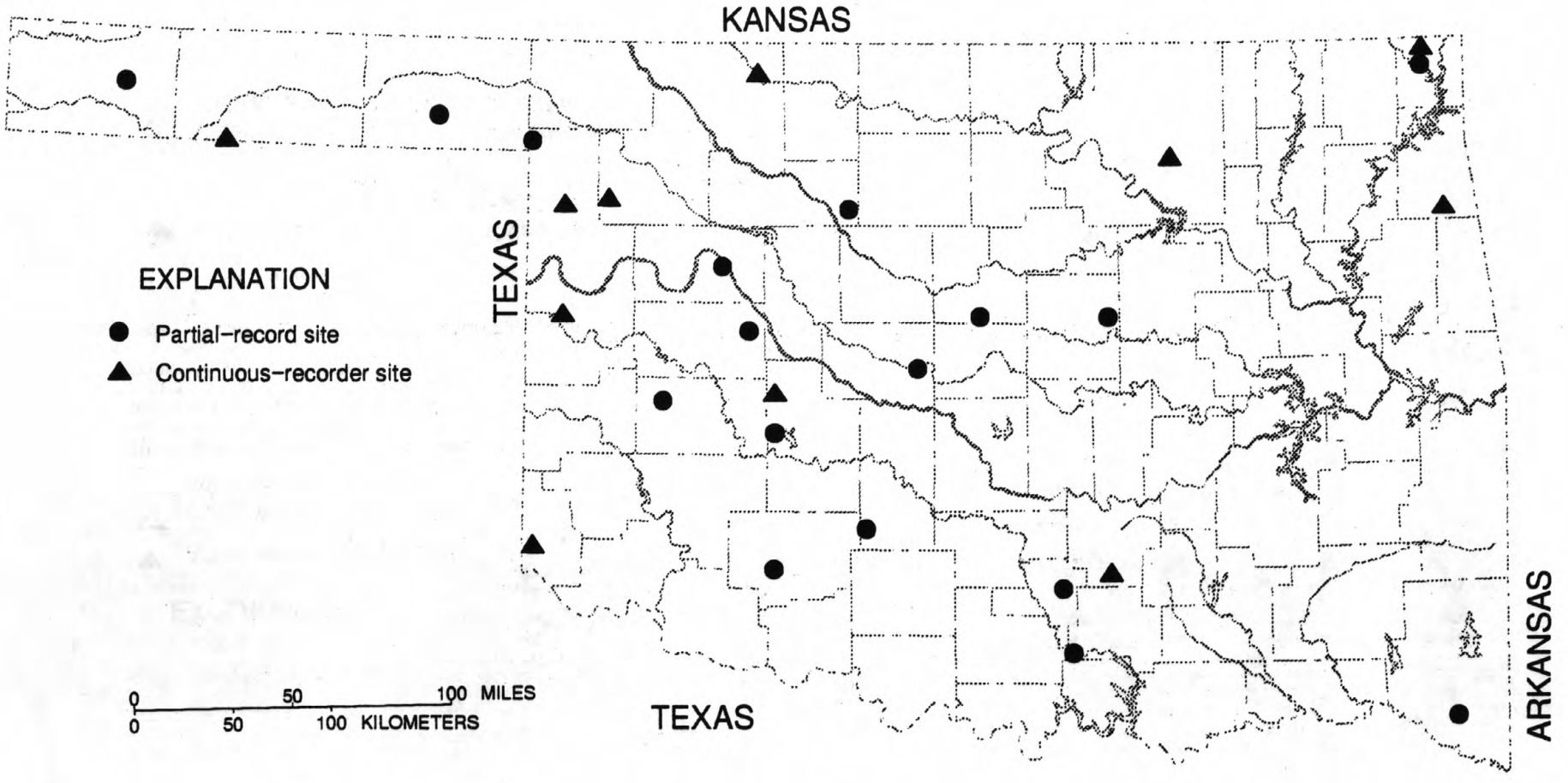
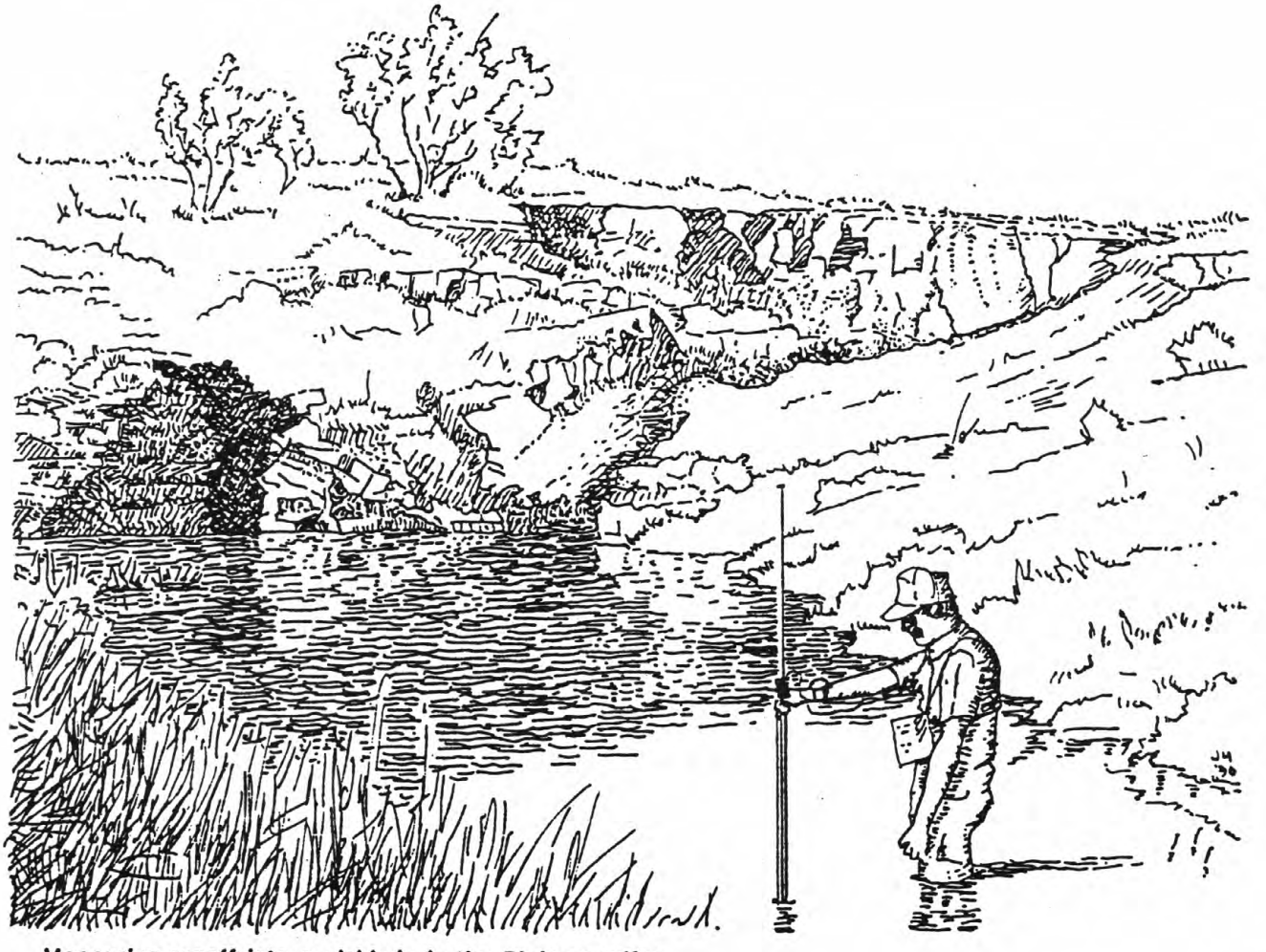


Figure 21.--Locations of network ground-water wells, water year 1994



Measuring runoff into a sinkhole in the Blaine aquifer

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)

No peaks greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	24	33	41	e43	52	33	349	30	11	.30	.00
2	10	24	34	41	e47	60	30	186	24	15	.40	.00
3	10	25	43	41	e58	74	30	132	22	10	.34	.00
4	11	25	42	42	68	67	30	150	26	4.6	.28	.00
5	12	25	40	41	74	56	29	95	20	3.4	.23	.00
6	13	25	38	41	65	50	29	70	17	9.5	.12	.00
7	13	25	38	40	60	46	30	57	16	8.0	.05	.00
8	17	25	38	40	57	94	31	51	14	4.1	.01	.00
9	63	26	37	41	e56	120	33	46	13	334	.01	.00
10	48	27	37	42	e55	155	34	43	28	341	.00	.00
11	25	28	38	42	e70	119	397	42	41	120	.00	.00
12	21	30	40	42	62	95	223	45	27	39	.00	.00
13	24	30	51	42	55	80	122	46	21	23	.00	.00
14	27	31	44	42	53	66	83	43	16	14	1.3	.00
15	30	29	43	42	50	59	66	42	13	9.5	2.1	.00
16	27	33	43	42	46	57	55	42	12	6.2	.73	.00
17	24	33	42	42	46	52	47	37	11	4.1	38	.00
18	25	34	41	e37	43	47	41	34	9.7	2.9	127	.00
19	25	32	41	e34	41	47	39	33	9.4	1.9	.88	.00
20	28	29	40	e32	39	42	39	32	33	1.3	.59	.00
21	27	27	40	e36	42	37	39	29	17	1.1	.11	.00
22	27	28	40	44	59	35	39	25	12	1.1	.00	.00
23	25	29	40	46	55	35	39	22	10	.86	.00	.00
24	24	31	40	50	56	31	38	21	9.5	.77	.00	.00
25	24	28	40	49	52	31	36	21	8.5	.79	.00	.00
26	23	24	39	49	49	33	34	28	6.8	.82	.00	.00
27	22	e23	39	50	47	36	49	31	5.2	.67	.00	.00
28	22	e22	39	e50	46	34	70	36	3.7	.64	.00	.00
29	22	e27	41	e49	---	33	101	48	3.4	.56	.00	.00
30	22	e31	41	e48	---	34	451	37	7.2	.43	.00	.00
31	23	---	41	e46	---	33	---	33	---	.35	.00	---
TOTAL	725	830	1243	1324	1494	1810	2317	1906	486.4	970.59	172.45	0.00
MEAN	23.4	27.7	40.1	42.7	53.4	58.4	77.2	61.5	16.2	31.3	5.56	.000
MAX	63	34	51	50	74	155	451	349	41	341	127	.00
MIN	10	22	33	32	39	31	29	21	3.4	.35	.00	.00
AC-FT	1440	1650	2470	2630	2960	3590	4600	3780	965	1930	342	.00

e Estimated

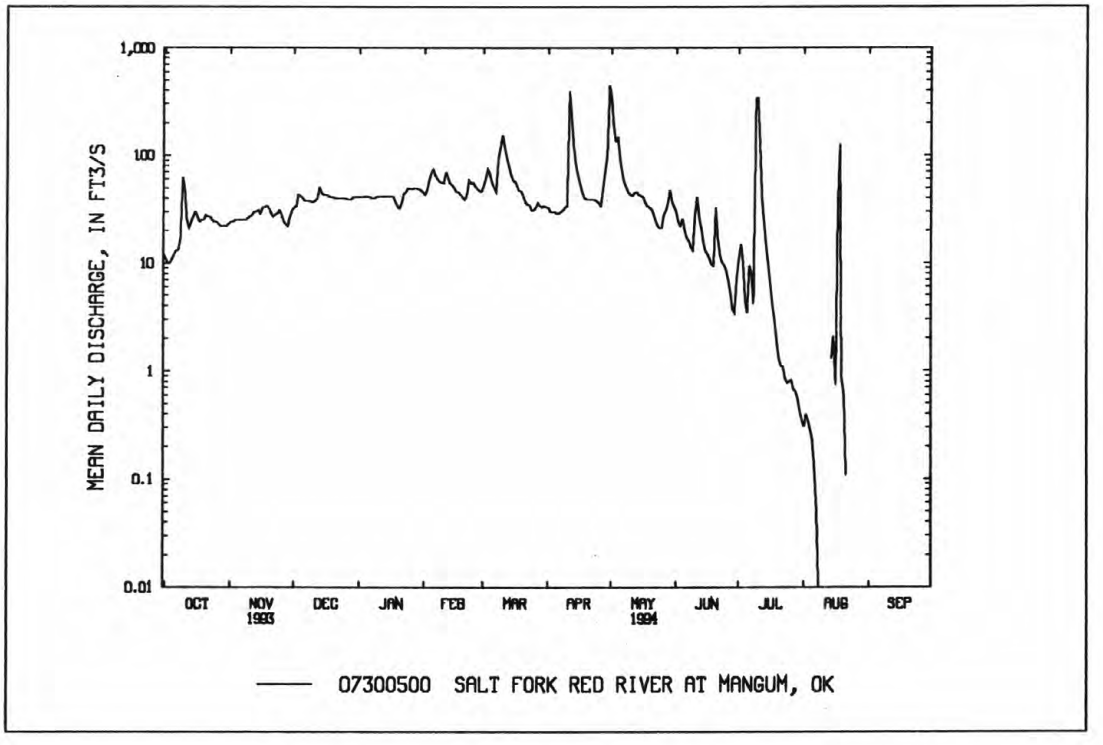
07300500 SALT FORK RED RIVER AT MANGUM, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	79.4	28.2	35.5	45.6	51.9	48.5	86.2	273	234	63.5	31.4	44.4
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1938-94	
ANNUAL TOTAL	45691.5		13278.44			
ANNUAL MEAN	125		36.4		85.2	
HIGHEST ANNUAL MEAN					277	1941
LOWEST ANNUAL MEAN					12.3	1940
HIGHEST DAILY MEAN	8710	Jul 7	451	Apr 30	22600	May 28 1978
LOWEST DAILY MEAN	6.3	Aug 29	.00	Aug 10	[a].00	Oct 2 1937
ANNUAL SEVEN-DAY MINIMUM	7.4	Aug 23	.00	Aug 22	.00	Aug 14 1938
INSTANTANEOUS PEAK FLOW			1010	Jul 9	72000	May 16 1957
INSTANTANEOUS PEAK STAGE			6.27	Jul 9	14.70	Jun 16 1938
ANNUAL RUNOFF (AC-FT)	90630		26340		61720	
10 PERCENT EXCEEDS	147		59		118	
50 PERCENT EXCEEDS	61		31		16	
90 PERCENT EXCEEDS	19		.00		.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 irrigation returns from Lake Altus.

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

Date	Time	Discharge (ft^3/s)	Gage Height (ft)	Date	Time	Discharge (ft^3/s)	Gage Height (ft)
No peaks above base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e32	46	58	56	67	81	73	833	e55	91	88	106
2	e30	48	55	56	56	89	70	495	e48	95	122	69
3	e28	50	73	55	77	92	67	405	e45	51	124	91
4	26	54	77	55	75	114	68	375	e68	35	148	32
5	e25	51	73	55	86	125	72	334	e86	48	128	31
6	24	53	64	55	88	113	80	292	e64	64	87	49
7	21	51	57	54	95	100	72	216	49	134	106	42
8	20	53	52	53	94	498	71	181	31	46	135	28
9	15	50	51	53	92	620	69	152	19	288	110	20
10	15	55	50	55	62	459	74	133	48	411	76	16
11	82	59	46	53	66	396	1020	132	357	503	99	14
12	e80	62	52	56	79	307	882	137	161	380	83	13
13	e101	67	65	54	90	257	410	532	100	209	91	11
14	e89	80	69	52	73	217	302	447	69	151	132	10
15	e80	77	72	52	72	192	231	202	53	150	747	18
16	e75	75	68	53	69	170	173	154	37	144	1240	15
17	e70	77	64	53	63	157	139	140	29	71	393	14
18	e71	78	58	57	66	143	118	118	25	74	571	13
19	e67	74	58	43	64	129	99	100	22	84	894	13
20	e83	72	57	42	62	120	87	85	20	62	286	12
21	124	68	55	52	68	109	81	72	19	75	157	11
22	71	62	55	69	113	93	77	63	47	42	117	11
23	62	60	53	73	116	89	64	55	57	49	93	11
24	62	55	55	68	100	88	60	45	23	110	105	11
25	61	55	56	66	89	82	55	43	35	76	109	11
26	53	51	56	74	81	80	46	350	45	47	98	11
27	50	45	57	69	72	84	105	e129	55	34	78	11
28	49	45	49	67	78	80	87	e74	52	44	94	11
29	46	50	51	66	---	80	185	e55	48	61	163	10
30	44	55	53	70	---	76	730	e215	67	66	105	9.3
31	43	---	58	77	---	75	---	e68	---	90	100	---
TOTAL	1699	1778	1817	1813	2213	5315	5667	6632	1834	3785	6879	724.3
MEAN	54.8	59.3	58.6	58.5	79.0	171	189	214	61.1	122	222	24.1
MAX	124	80	77	77	116	620	1020	833	357	503	1240	106
MIN	15	45	46	42	56	75	46	43	19	34	76	9.3
AC-FT	3370	3530	3600	3600	4390	10540	11240	13150	3640	7510	13640	1440

e Estimated

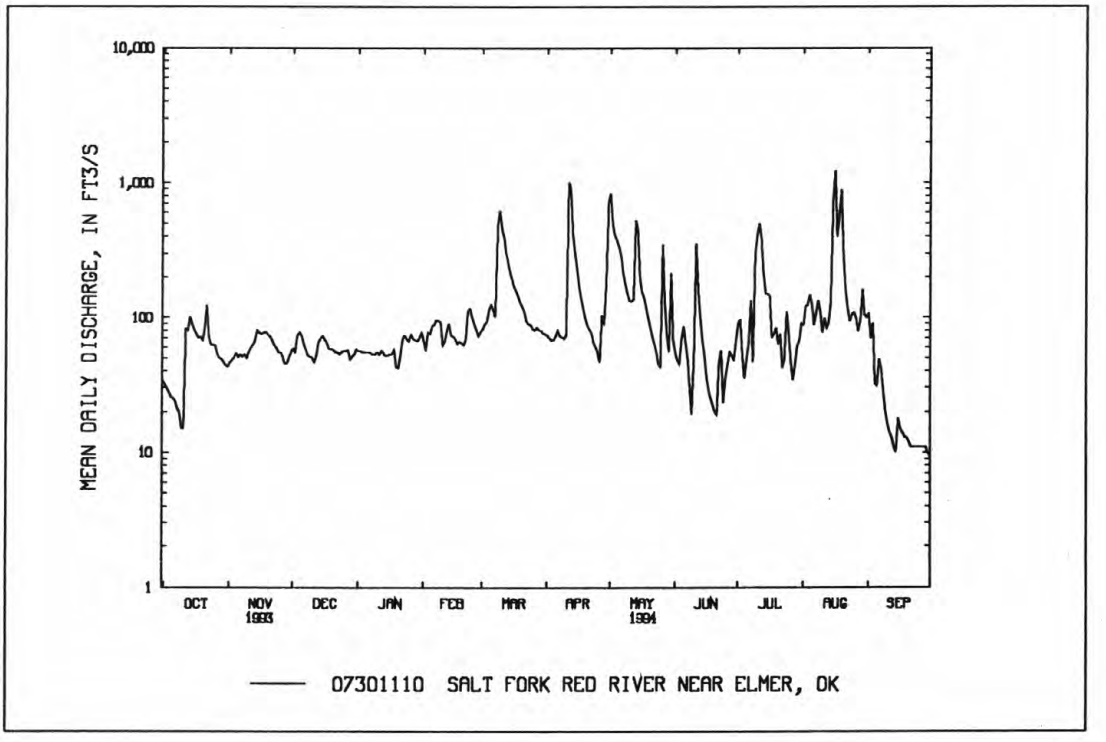
07301110 SALT FORK RED RIVER NEAR ELMER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	294	135	135	129	135	165	198	639	621	154	150	155
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	61.1	9.25	4.19	7.90
(WY)	1985	1985	1983	1981	1981	1982	1982	1984	1994	1981	1981	1981

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1980-94	
ANNUAL TOTAL	129850		40156.3			
ANNUAL MEAN	356		110		243	
HIGHEST ANNUAL MEAN					591	1987
LOWEST ANNUAL MEAN					71.2	1983
HIGHEST DAILY MEAN	13700	May 10	1240	Aug 16	21100	Oct 20 1983
LOWEST DAILY MEAN	15	Oct 9	9.3	Sep 30	.08	Sep 4 1981
ANNUAL SEVEN-DAY MINIMUM	21	Oct 4	11	Sep 24	.12	Aug 30 1981
INSTANTANEOUS PEAK FLOW			1670	Apr 11	44900	Oct 20 1983
INSTANTANEOUS PEAK STAGE			4.61	Apr 11	[a]16.06	May 29 1987
ANNUAL RUNOFF (AC-FT)	257600		79650		176000	
10 PERCENT EXCEEDS	639		205		423	
50 PERCENT EXCEEDS	166		69		75	
90 PERCENT EXCEEDS	52		28		11	

[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 September 1994 (discontinued).

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 1993 TO SEPTEMBER 1994

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											
07...	2000	8.00	32.0	725	1028	1028	49	2.26	3590	7.9	8.5
07...	2001	16.0	32.0	725	1028	1028	49	2.26	3590	8.1	8.5
07...	2002	24.0	32.0	725	1028	1028	49	2.26	3590	8.3	8.5
07...	2003	32.0	32.0	725	1028	1028	49	2.26	3590	8.4	8.5
07...	2004	40.0	31.5	725	1028	1028	49	2.26	3600	8.4	8.6
07...	2005	48.0	31.5	725	1028	1028	49	2.26	3590	8.3	8.6
07...	2006	56.0	31.5	725	1028	1028	49	2.26	3590	8.2	8.6
07...	2007	64.0	31.5	725	1028	1028	49	2.26	3590	7.9	8.6
07...	2008	72.0	31.5	725	1028	1028	49	2.26	3590	8.0	8.5
07...	2009	80.0	32.0	725	1028	1028	49	2.26	3590	7.8	8.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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											
04...	1620	1028	80020	26	5160	8.0	31.5	29.5	1.4	737	9.0
DEC											
15...	1345	1028	80020	75	3860	8.1	7.0	7.5	18	732	11.7
APR											
05...	1320	1028	80020	72	4410	8.2	5.0	10.5	3.0	731	11.4
JUN											
07...	1830	1028	80020	49	3520	8.6	32.5	33.0	6.5	725	8.4
AUG											
31...	0830	1028	80020	110	3220	8.3	23.0	23.5	38	733	7.4

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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 DISSOLVED (MG/L AS CACO3) (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											
04...	124	25	39	--	--	530	--	--	--	--	7.4
DEC											
15...	104	27	110	1800	--	500	130	300	27	3	6.1
APR											
05...	108	99	33	1900	1800	520	150	350	28	3	6.4
JUN											
07...	125	220	100	1400	1300	380	110	300	32	3	10
AUG											
31...	91	1400	1300	1000	900	240	100	320	41	4	8.0

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											
04...	163	0	133	1600	780	0.50	7.8	4080	--	--	--
DEC											
15...	--	--	--	1600	480	0.50	12	3240	3130	4.41	656
APR											
05...	170	0	139	1700	560	0.50	7.7	3610	3380	4.91	702
JUN											
07...	103	15	110	1200	480	0.40	10	2690	2560	3.66	356
AUG											
31...	141	0	116	780	430	0.60	9.8	2220	1960	3.02	659

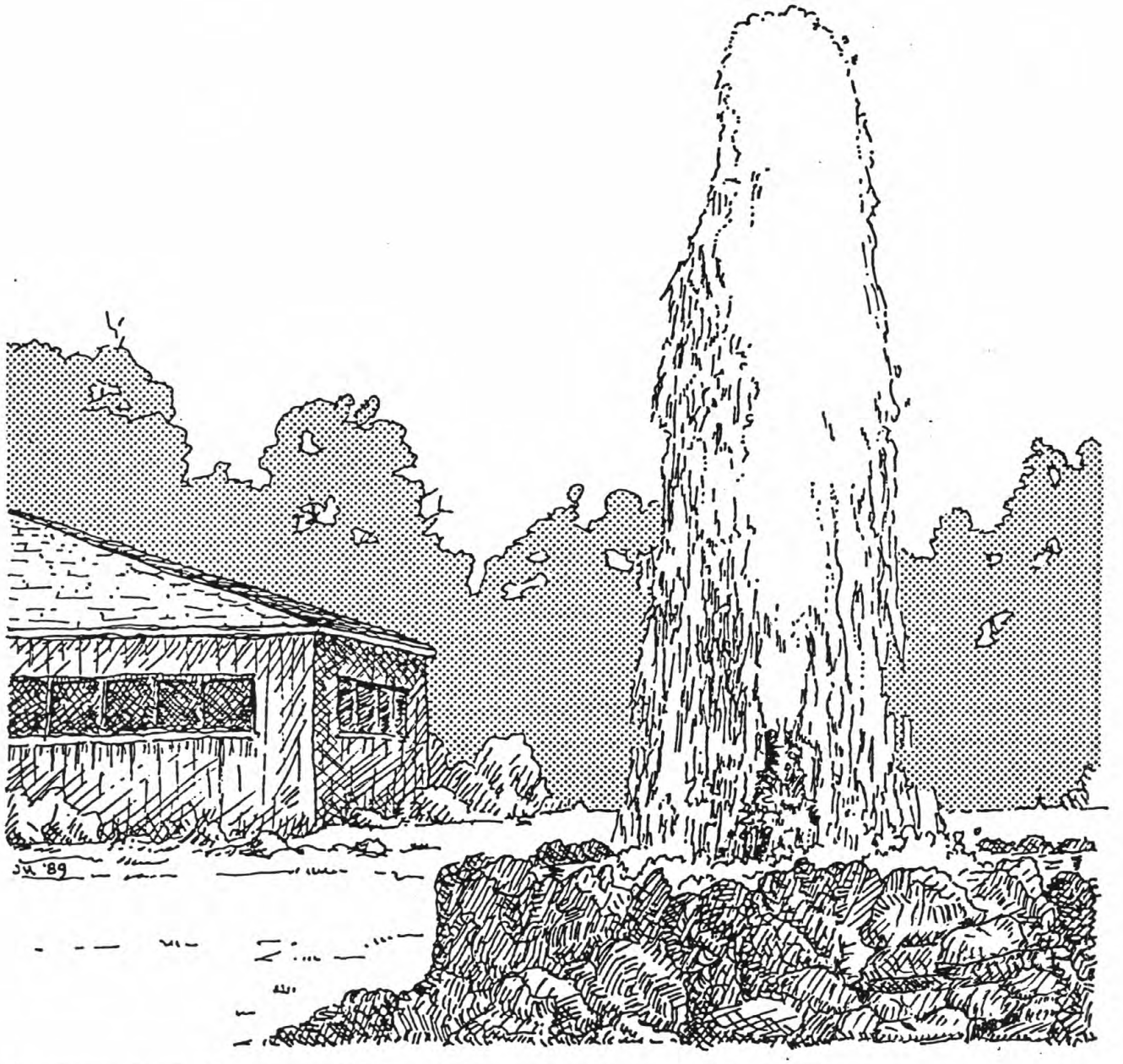
DATE	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 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										
04...	1.96	1.96	8.7	0.040	0.13	2.00	2.00	0.110	0.14	0.49
DEC										
15...	1.97	1.97	8.7	0.030	0.10	2.00	2.00	0.100	0.13	0.30
APR										
05...	1.06	1.06	4.7	0.040	0.13	1.10	1.10	0.050	0.06	0.55
JUN										
07...	0.110	--	--	<0.010	--	0.110	0.110	0.110	0.14	1.1
AUG										
31...	0.610	0.610	2.7	0.020	0.07	0.630	0.630	0.030	0.04	1.8

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

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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, DISSOLVED (MG/L AS P) (00671)	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)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
OCT 04...	0.60	2.6	0.040	0.020	<0.010	20	100	<1	40	130
DEC 15...	0.40	2.4	0.020	<0.010	<0.010	10	<100	<1	40	90
APR 05...	0.60	1.7	0.050	<0.010	<0.010	--	--	--	--	--
JUN 07...	1.2	1.3	0.160	0.010	<0.010	20	100	<1	20	90
AUG 31...	1.8	2.4	0.250	0.010	<0.010	10	120	<9	<9	52

DATE	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 04...	20	5	69	9	<1.0	--	29	855	60	96
DEC 15...	20	4	<1	8	<1.0	5300	13	--	--	--
APR 05...	--	--	--	--	--	--	--	238	46	98
JUN 07...	30	5	2	3	<1.0	4500	22	205	27	82
AUG 31...	<3	<30	1	2	<1.0	3200	<18	206	61	6



Vendome Well, Chickasaw National Recreation Area, in the 1930's

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.49	5.1	11	15	e12	20	17	66	10	1.0	.15	.10
2	e.46	5.5	11	15	e13	21	17	46	10	.97	.16	.10
3	e.50	5.8	11	15	e15	20	16	39	10	.97	.24	.08
4	e.45	5.8	13	14	e19	19	16	36	11	.73	.23	.03
5	.48	5.8	13	14	21	19	17	32	18	.80	.17	.18
6	.56	5.9	12	14	20	18	17	29	14	2.4	.17	.11
7	.55	6.1	12	14	19	18	17	26	11	1.4	.14	.06
8	.56	6.8	12	14	19	24	17	23	9.0	1.2	.10	.66
9	.52	6.7	12	15	e15	42	18	23	7.7	1.1	.10	.14
10	.57	6.9	12	16	e14	44	17	22	9.7	1.1	.08	.09
11	.62	7.1	11	15	e16	43	21	22	15	1.2	.06	.07
12	.76	7.3	12	15	20	41	32	21	13	2.6	.05	.08
13	1.0	7.6	13	15	18	33	27	21	11	2.3	.05	.08
14	1.2	8.0	13	15	18	29	23	21	9.0	2.0	.07	.10
15	1.3	8.8	13	15	18	26	20	22	7.4	1.6	.13	.16
16	1.4	9.6	13	16	17	24	19	19	6.5	1.3	.09	.09
17	1.5	11	13	e15	17	23	18	18	5.6	.87	.06	.06
18	1.8	12	12	e13	18	22	17	17	5.0	.74	.05	.03
19	2.2	11	13	e12	18	21	17	17	4.7	.55	.03	.01
20	2.9	10	13	e14	17	19	17	16	4.5	.46	.07	.01
21	3.2	9.8	12	e13	17	18	16	15	4.1	.81	.12	.00
22	3.4	9.9	14	e15	18	18	17	15	3.4	.62	.05	.01
23	3.7	9.6	12	18	19	18	18	14	2.8	.55	.04	.04
24	4.0	9.8	14	18	19	17	20	13	2.2	.45	.04	.06
25	4.3	e9.5	14	18	18	17	20	13	1.8	.43	.03	.07
26	4.0	e9.0	14	18	17	18	19	15	1.5	.60	.01	.06
27	4.2	e10	14	20	17	18	17	14	1.3	.38	.00	.03
28	4.3	e11	14	20	18	17	20	14	1.1	.25	.00	.00
29	4.4	12	13	18	---	17	33	14	.96	.22	.00	.00
30	4.7	12	13	18	---	17	67	13	1.0	.21	.00	.00
31	4.8	---	15	e15	---	17	---	12	---	.18	.00	---
TOTAL	64.82	255.4	394	482	487	718	627	688	212.26	29.99	2.49	2.51
MEAN	2.09	8.51	12.7	15.5	17.4	23.2	20.9	22.2	7.08	.97	.080	.084
MAX	4.8	12	15	20	21	44	67	66	18	2.6	.24	.66
MIN	.45	5.1	11	12	12	17	16	12	.96	.18	.00	.00
AC-FT	129	507	781	956	966	1420	1240	1360	421	59	4.9	5.0

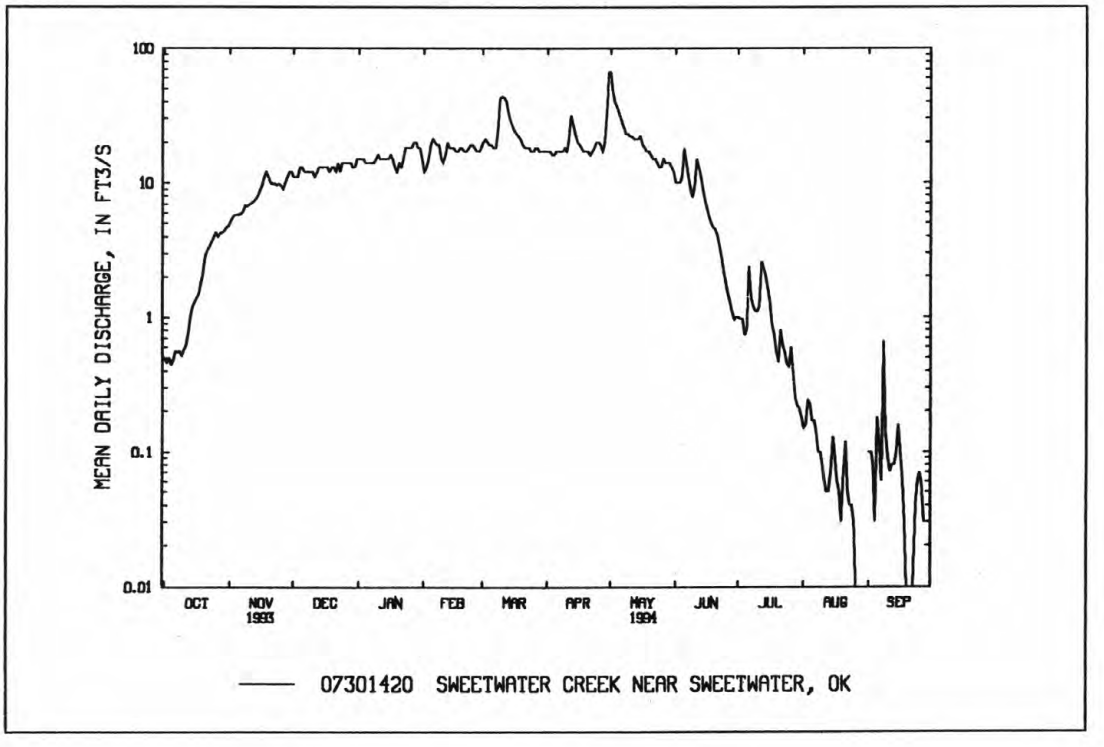
e Estimated

07301420 SWEETWATER CREEK NEAR SWEETWATER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.2	21.1	24.2	28.1	30.1	37.0	30.6	31.9	28.5	9.65	4.11	10.7
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	8.51	12.7	15.5	17.4	17.9	16.2	18.1	7.08	.97	.080	.084
(WY)	1993	1994	1994	1994	1994	1991	1991	1991	1994	1994	1994	1994

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1986-94	
ANNUAL TOTAL	6473.85		3963.47			
ANNUAL MEAN	17.7		10.9		22.8	
HIGHEST ANNUAL MEAN					41.4	1987
LOWEST ANNUAL MEAN					10.9	1994
HIGHEST DAILY MEAN	107	May 3	67	Apr 30	310	Jun 14 1989
LOWEST DAILY MEAN	.08	Aug 30	.00	at times	.00	at times
ANNUAL SEVEN-DAY MINIMUM	.15	Aug 24	.01	Aug 25	.01	Aug 25 1994
INSTANTANEOUS PEAK FLOW	84	Apr 30	84	Apr 30	545	Jun 14 1989
INSTANTANEOUS PEAK STAGE			9.24	Apr 30	12.80	Jun 14 1989
ANNUAL RUNOFF (AC-FT)	12840		7860		16500	
10 PERCENT EXCEEDS	37		20		43	
50 PERCENT EXCEEDS	13		12		18	
90 PERCENT EXCEEDS	.59		.08		1.5	



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)
No peak greater than base discharge.							

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	7.5	24	42	e58	81	45	232	29	2.7	.00	.00
2	.84	8.0	25	44	e60	91	44	234	26	2.4	.00	.00
3	.64	8.3	27	45	63	106	43	285	23	.89	.00	.00
4	.78	8.8	28	46	67	100	43	271	22	.17	.00	.00
5	.83	9.1	28	46	85	91	43	197	20	.01	.00	.00
6	.65	9.1	28	46	91	85	38	154	30	1.5	.00	.00
7	1.0	9.9	28	44	90	80	37	131	28	.40	.00	.00
8	6.2	11	28	44	80	96	38	112	21	.00	.00	.00
9	5.4	11	29	43	e70	183	38	103	19	2.0	.00	.00
10	4.2	12	29	45	e74	226	41	94	20	1.8	.00	.00
11	3.4	12	29	44	77	210	123	90	23	.67	.00	.00
12	3.6	15	31	46	67	183	152	89	44	.26	.00	.00
13	3.8	15	36	47	64	163	138	88	35	.00	.00	.00
14	3.8	17	35	48	75	148	120	87	25	.00	.00	.00
15	4.1	17	36	49	67	129	98	78	20	.00	.00	.00
16	4.3	19	36	48	64	110	84	71	16	.00	.00	.00
17	4.5	19	36	49	64	100	72	69	14	.00	20	.00
18	5.1	19	36	e42	64	91	65	63	11	.00	26	.00
19	5.3	20	36	e45	64	85	58	56	9.7	.00	6.2	.00
20	5.7	19	36	e44	64	78	55	50	8.6	.00	1.3	.00
21	5.8	19	36	e48	65	72	52	44	7.3	.00	.14	.00
22	5.8	19	36	53	71	66	50	41	7.4	.00	.00	.00
23	5.9	20	36	53	73	63	50	36	5.5	.00	.00	.00
24	6.1	21	37	59	78	60	46	35	4.6	.00	.00	.00
25	6.4	18	36	64	80	58	44	33	3.7	.00	.00	.00
26	6.8	16	36	63	76	58	43	33	2.5	.00	.00	.00
27	6.5	18	37	64	74	58	49	42	1.7	.00	.00	.00
28	6.7	23	40	64	75	55	84	38	.73	.00	.00	.00
29	7.2	22	41	64	---	54	89	44	.58	.00	.00	.00
30	6.8	23	41	65	---	52	313	40	5.4	.00	.00	.00
31	7.1	---	40	e55	---	48	---	34	---	.00	.00	---
TOTAL	136.24	465.7	1037	1559	2000	3080	2195	2974	483.71	12.80	53.64	0.00
MEAN	4.39	15.5	33.5	50.3	71.4	99.4	73.2	95.9	16.1	.41	1.73	.000
MAX	7.2	23	41	65	91	226	313	285	44	2.7	26	.00
MIN	.64	7.5	24	42	58	48	37	33	.58	.00	.00	.00
AC-FT	270	924	2060	3090	3970	6110	4350	5900	959	25	106	.00

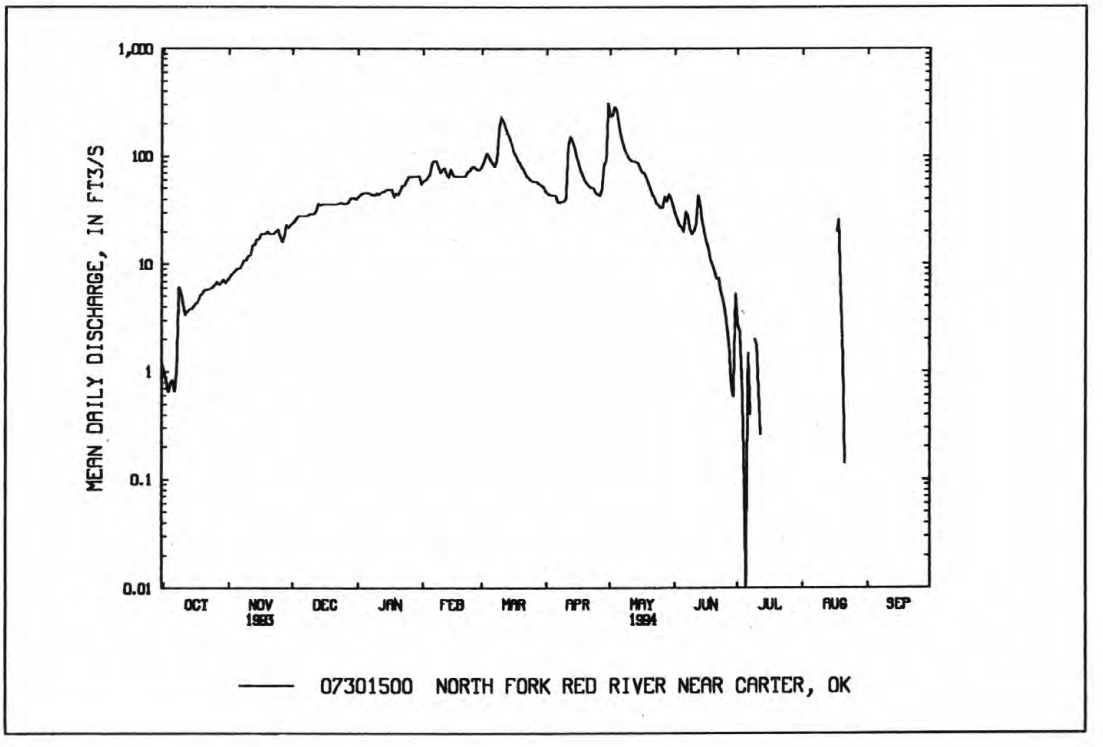
e Estimated

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	92.9	51.0	57.9	70.8	93.8	101	126	416	263	71.7	36.7	48.7
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1945-94	
ANNUAL TOTAL	45856.94		13997.09			
ANNUAL MEAN	126		38.3		119	
HIGHEST ANNUAL MEAN					356	1987
LOWEST ANNUAL MEAN					12.9	1981
HIGHEST DAILY MEAN	2920	May 9	313	Apr 30	20700	May 26 1959
LOWEST DAILY MEAN	.64	Oct 3	.00	at times	.00	most years
ANNUAL SEVEN-DAY MINIMUM	.82	Oct 1	.00	Jul 13	.00	most years
INSTANTANEOUS PEAK FLOW			510	Apr 30	53400	May 26 1959
INSTANTANEOUS PEAK STAGE			4.79	Apr 30	14.98	May 17 1977
ANNUAL RUNOFF (AC-FT)	90960		27760		86540	
10 PERCENT EXCEEDS	284		88		201	
50 PERCENT EXCEEDS	89		28		33	
90 PERCENT EXCEEDS	4.9		.00		.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, 107,000 acre-ft, June 10, elevation 1,554.29 ft; minimum, 25,460 acre-ft, Sept. 30, elevation, 1,532.30 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 1993 TO SEPTEMBER 1994
DAILY OBSERVATION AT 24:00 VALUES

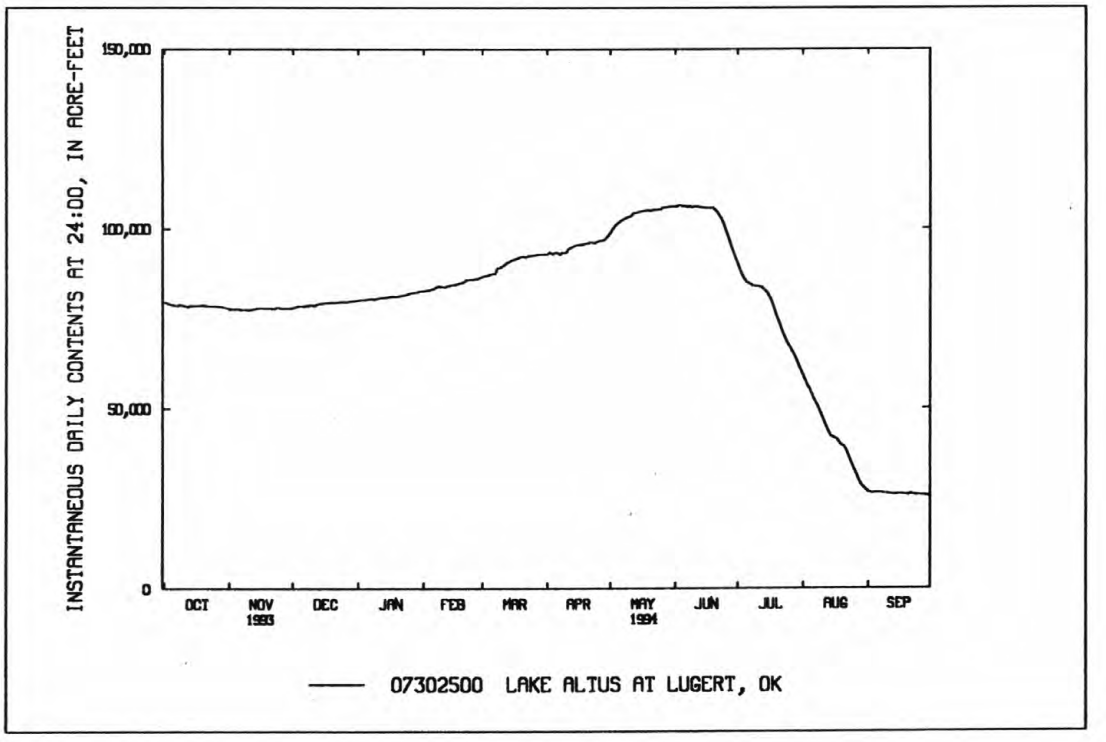
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	79500	77620	78100	80030	82760	86720	92800	98870	106100	89940	58900	26660
2	79280	77790	78050	80210	82900	86810	93440	99890	106200	88270	57670	26510
3	79060	77530	78530	80300	82940	87000	93000	100600	106600	86910	56230	26370
4	78930	77790	78360	80160	83120	87190	92900	101300	106300	85970	55240	26440
5	78750	77660	78530	80300	83210	87370	93440	101700	106200	85230	53770	26440
6	78620	77490	78310	80470	83490	87560	93190	102300	106300	84770	52460	26460
7	78530	77400	78660	80340	83760	87610	92800	102500	106000	84590	51410	26420
8	78930	77530	78530	80520	84130	89030	93340	102800	106300	84070	50260	26340
9	78660	77490	78750	80210	83860	89030	93190	103100	105900	84130	48830	26270
10	78580	77400	78790	80650	83950	89410	93390	103300	106200	83990	47560	26270
11	78530	77490	78530	80700	83720	89800	94280	103600	106200	83860	46110	26130
12	78140	77620	78880	80780	84130	90320	94630	104300	106100	83720	44620	26100
13	78710	77790	79150	80830	84220	90660	94920	104400	105900	83170	43310	26010
14	78530	77920	79150	80920	84410	90900	95220	104500	105800	82670	42270	26050
15	78620	77880	79190	80960	84540	91290	95420	104700	105800	81910	41870	26130
16	78660	77970	79280	81190	84590	91390	95520	104800	105700	80780	41580	26130
17	78580	77970	79280	81230	84680	91630	95420	104900	105600	79590	41330	26130
18	78620	77920	79280	81100	84910	91870	95580	105000	105700	77840	40470	26040
19	78750	77970	79500	81140	85140	92070	95830	105100	105800	75940	39610	26010
20	78620	77920	79410	81280	85230	92260	95880	105000	105300	74320	39460	25890
21	78490	77710	79460	81320	85740	92210	96130	105100	104600	72850	38620	26250
22	78530	77710	79570	81460	85930	92020	96280	105300	103600	71160	37270	25910
23	78400	78050	79590	81590	85880	92500	95930	105200	102700	69820	35890	25910
24	78440	78050	79630	81730	85930	92600	96030	105300	101500	68490	34460	25840
25	78400	77880	79630	82000	86020	92550	96530	105300	99590	67460	33040	25820
26	78360	77790	79550	82220	86160	92600	96530	105800	98150	66510	31730	25820
27	78180	77880	79720	82130	86210	92750	96630	105900	96230	65470	30390	25820
28	78230	77880	79810	82270	86580	92800	96780	105900	94430	64270	29200	25740
29	78140	77970	79850	82400	---	92850	97440	106100	92850	62990	28300	25580
30	77920	77840	79900	82720	---	92850	98100	106200	91290	61520	27780	25460
31	77880	---	80030	82670	---	92900	---	106200	---	60290	27140	---

07302500 LAKE ALTUS AT LUGERT, OK--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MAX	79500	78050	80030	82720	86580	92900	98100	106200	106600	89940	58900	26660
MIN	77880	77400	78050	80030	82760	86720	92800	98870	91290	60290	27140	25460
(‡)	1548.30	1548.29	1548.79	1549.30	1550.23	1551.55	1552.59	1554.13	1551.22	1543.91	1533.00	1532.30
(‡‡)	-1,710	-40	+2,190	+2,640	+3,910	+6,320	+5,200	+8,100	-14,910	-31,000	-33,150	-1,680

CAL YR 1993 MAX 150400 MIN 77400 -38,470
WTR YR 1994 MAX 106600 MIN 25460 -54,130

(‡) 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.--No estimated daily discharge. Records fair. 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.

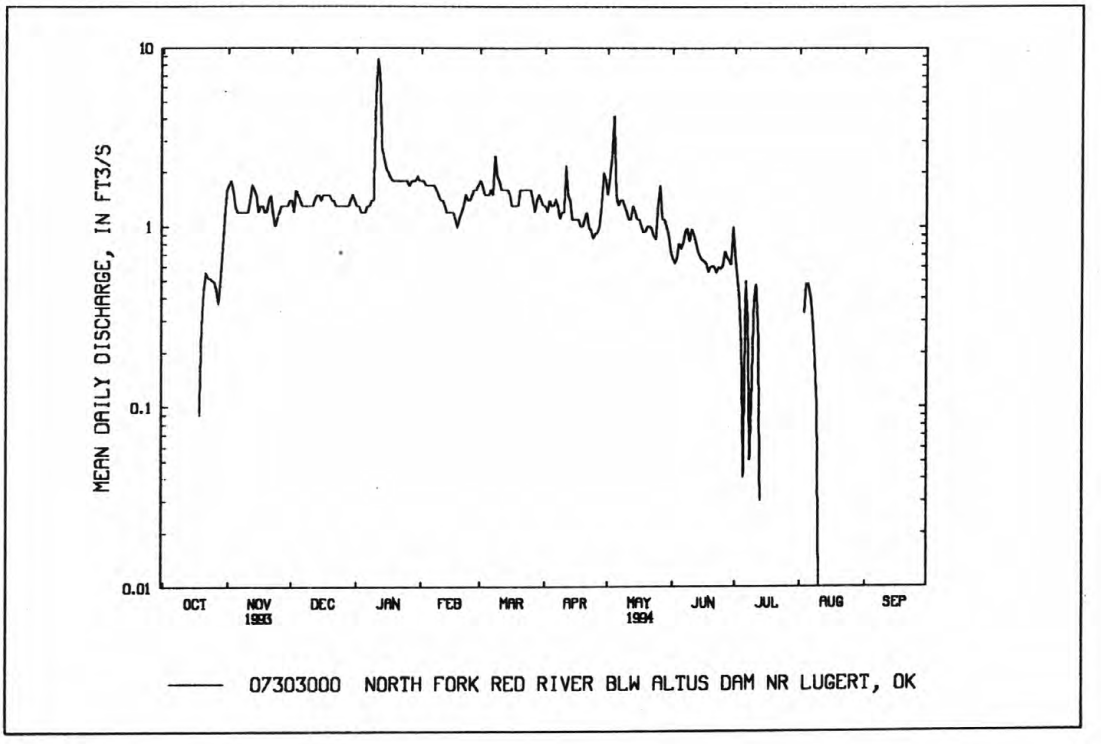
EXTREMES FOR CURRENT YEAR.--Maximum discharge, 11 ft^3/s, Jan. 11-12, gage height, 5.60 ft (backwater); no flow at times.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.7	1.4	1.3	1.8	1.8	1.3	1.5	.66	.68	.00	.00
2	.00	1.8	1.2	1.3	1.8	1.7	1.2	1.9	.63	.52	.00	.00
3	.00	1.6	1.6	1.2	1.7	1.5	1.4	2.5	.66	.38	.33	.00
4	.00	1.3	1.5	1.2	1.7	1.5	1.3	4.2	.81	.21	.48	.00
5	.00	1.2	1.4	1.2	1.7	1.5	1.3	1.5	.75	.04	.48	.00
6	.00	1.2	1.3	1.3	1.7	1.6	1.4	1.3	.82	.50	.41	.00
7	.00	1.2	1.3	1.3	1.7	1.5	1.3	1.4	.94	.30	.31	.00
8	.00	1.2	1.3	1.4	1.6	2.5	1.1	1.4	.97	.05	.21	.00
9	.00	1.2	1.3	1.4	1.5	1.9	1.2	1.3	.82	.13	.10	.00
10	.00	1.2	1.3	5.1	1.4	1.8	1.2	1.2	.97	.39	.01	.00
11	.00	1.4	1.3	8.8	1.4	1.6	2.2	1.1	.90	.48	.00	.00
12	.00	1.7	1.4	7.0	1.3	1.6	1.5	1.1	.82	.26	.00	.00
13	.00	1.6	1.5	2.7	1.2	1.6	1.4	1.3	.72	.03	.00	.00
14	.00	1.5	1.5	2.4	1.2	1.6	1.1	1.2	.68	.00	.00	.00
15	.00	1.2	1.4	2.1	1.2	1.5	1.1	1.1	.65	.00	.00	.00
16	.00	1.3	1.5	2.0	1.2	1.3	1.1	1.1	.64	.00	.00	.00
17	.00	1.3	1.5	1.9	1.1	1.3	1.1	1.0	.62	.00	.00	.00
18	.09	1.2	1.5	1.8	1.0	1.3	1.0	.93	.56	.00	.00	.00
19	.27	1.2	1.5	1.8	1.1	1.3	1.0	.94	.59	.00	.00	.00
20	.44	1.4	1.4	1.8	1.2	1.6	1.1	1.0	.60	.00	.00	.00
21	.55	1.5	1.4	1.8	1.3	1.6	1.2	1.0	.59	.00	.00	.00
22	.52	1.2	1.3	1.8	1.5	1.6	.99	.97	.55	.00	.00	.00
23	.51	1.0	1.3	1.8	1.4	1.6	.96	.88	.59	.00	.00	.00
24	.50	1.1	1.3	1.8	1.4	1.6	.87	.86	.58	.00	.00	.00
25	.49	1.2	1.3	1.8	1.5	1.6	.91	1.3	.60	.00	.00	.00
26	.45	1.3	1.3	1.7	1.6	1.4	.93	1.7	.73	.00	.00	.00
27	.37	1.3	1.3	1.8	1.6	1.2	1.0	1.1	.67	.00	.00	.00
28	.50	1.3	1.3	1.8	1.7	1.4	1.3	1.1	.65	.00	.00	.00
29	.74	1.3	1.4	1.8	---	1.5	2.0	1.0	.61	.00	.00	.00
30	1.1	1.4	1.5	1.9	---	1.4	1.8	.91	1.0	.00	.00	.00
31	1.6	---	1.4	1.8	---	1.3	---	.73	---	.00	.00	---
TOTAL	8.13	40.0	42.9	68.8	40.5	48.2	37.26	40.52	21.38	3.97	2.33	0.00
MEAN	.26	1.33	1.38	2.22	1.45	1.55	1.24	1.31	.71	.13	.075	.000
MAX	1.6	1.8	1.6	8.8	1.8	2.5	2.2	4.2	1.0	.68	.48	.00
MIN	.00	1.0	1.2	1.2	1.0	1.2	.87	.73	.55	.00	.00	.00
AC-FT	16	79	85	136	80	96	74	80	42	7.9	4.6	.00

CAL YR 1993 TOTAL 51787.38 MEAN 142 MAX 5130 MIN .00 AC-FT 102700
WTR YR 1994 TOTAL 353.99 MEAN .97 MAX 8.8 MIN .00 AC-FT 702

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



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.

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 fair. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	80	99	93	89	95	91	716	92	66	41	20
2	105	80	99	92	94	90	88	645	84	65	41	20
3	102	79	102	92	92	90	86	606	80	62	41	20
4	99	80	102	92	90	94	86	858	78	60	40	17
5	e90	79	101	92	92	94	87	494	163	58	40	17
6	82	79	99	93	93	93	86	333	148	61	38	21
7	82	79	97	94	92	92	86	258	124	61	38	20
8	83	79	97	93	90	154	87	220	94	59	37	18
9	82	80	97	91	e83	238	85	206	83	69	36	16
10	90	80	96	91	e77	331	83	182	94	65	35	15
11	147	81	96	91	e81	355	164	177	94	62	34	14
12	130	84	98	97	96	232	522	166	89	170	33	14
13	129	85	106	99	89	184	774	160	114	129	32	14
14	130	88	107	95	88	152	415	214	116	108	43	14
15	120	89	104	90	88	137	238	147	92	103	78	20
16	113	89	103	90	86	124	180	129	80	77	69	20
17	105	90	106	92	85	118	159	122	72	63	68	17
18	98	91	101	93	84	112	136	113	66	61	77	15
19	93	92	97	93	84	102	120	107	64	60	347	14
20	92	92	96	93	84	99	114	100	61	58	328	16
21	91	92	95	93	88	95	107	94	59	56	147	18
22	90	92	95	91	102	93	103	89	73	55	95	22
23	89	91	94	93	98	94	99	85	85	53	76	20
24	88	91	94	92	95	90	93	81	74	52	60	19
25	86	90	94	90	93	90	91	80	68	50	55	19
26	85	105	94	90	92	98	91	155	69	48	53	18
27	84	111	93	86	90	101	96	213	65	47	47	16
28	83	106	92	86	94	94	94	165	61	46	31	15
29	81	104	96	90	---	94	102	145	60	45	27	14
30	80	102	93	e87	---	94	227	119	69	44	23	13
31	80	---	94	e82	---	92	---	104	---	42	20	---
TOTAL	3017	2660	3037	2836	2509	4021	4790	7283	2571	2055	2130	516
MEAN	97.3	88.7	98.0	91.5	89.6	130	160	235	85.7	66.3	68.7	17.2
MAX	147	111	107	99	102	355	774	858	163	170	347	22
MIN	80	79	92	82	77	90	83	80	59	42	20	13
AC-FT	5980	5280	6020	5630	4980	7980	9500	14450	5100	4080	4220	1020

e Estimated

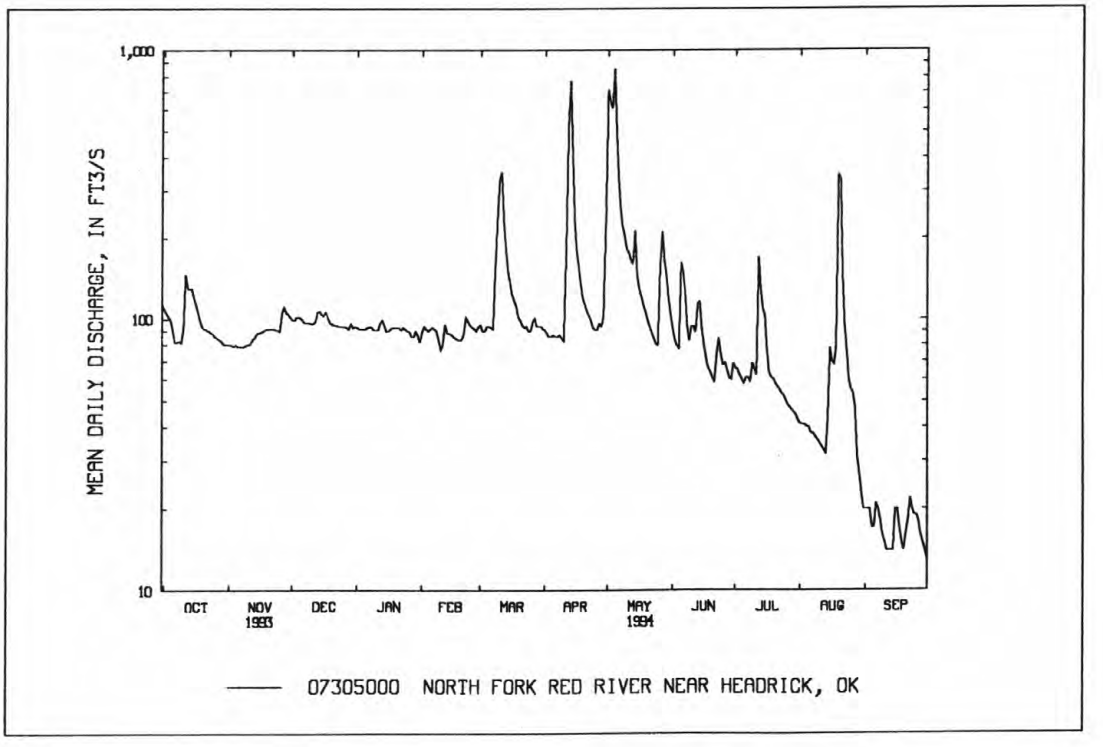
07305000 NORTH FORK RED RIVER NEAR HEADRICK, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	374	142	110	98.6	135	189	247	1030	750	242	108	235
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1945-94	
ANNUAL TOTAL	297457		37425			
ANNUAL MEAN	815		103		[a]306	
HIGHEST ANNUAL MEAN					1562	1987
LOWEST ANNUAL MEAN					50.0	1970
HIGHEST DAILY MEAN	41600	May 10	858	May 4	41600	May 10 1993
LOWEST DAILY MEAN	79	Nov 3	13	Sep 30	[b].00	Aug 2 1946
ANNUAL SEVEN-DAY MINIMUM	79	Nov 2	15	Sep 8	.00	Aug 2 1946
INSTANTANEOUS PEAK FLOW			1190	May 4	59000	Oct 4 1986
INSTANTANEOUS PEAK STAGE			7.64	May 4	19.07	Oct 4 1986
INSTANTANEOUS LOW FLOW					.00	Aug 2 1946
ANNUAL RUNOFF (AC-FT)	590000		74230		221700	
10 PERCENT EXCEEDS	1230		150		502	
50 PERCENT EXCEEDS	297		91		57	
90 PERCENT EXCEEDS	91		34		5.6	

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



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 good. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	e.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	e.00	e.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	e.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	e.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	e.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.20	18.8	12.9	3.88	13.0	13.0	4.38	42.3	55.4	5.97	.27	1.56
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1976-94	
ANNUAL TOTAL	15384.43		.00			
ANNUAL MEAN	42.1		.00		[a]14.9	
HIGHEST ANNUAL MEAN					125	1987
LOWEST ANNUAL MEAN					.000	1994
HIGHEST DAILY MEAN	375	May 20			3480	May 28 1987
LOWEST DAILY MEAN	.00	Jan 7	.00	at times	.00	at times
ANNUAL SEVEN-DAY MINIMUM	.00	Feb 2	.00	Oct 1	.00	Oct 1 1975
INSTANTANEOUS PEAK FLOW			.00	Oct 1	[b]4300	May 29 1987
INSTANTANEOUS PEAK STAGE					[c]15.44	May 29 1987
ANNUAL RUNOFF (AC-FT)	30520		.00		10760	
10 PERCENT EXCEEDS	168		.00		3.2	
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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e117	97	e119	108	111	112	e103	574	e120	e110	e55	60
2	e115	97	e121	105	109	111	e101	764	e112	e86	e53	61
3	e112	98	e131	102	108	106	e99	557	e105	e79	e52	58
4	e110	99	e135	105	107	105	e98	938	e103	e78	e51	50
5	e108	99	e131	105	105	106	e98	635	e103	e77	e51	49
6	106	99	e124	105	105	106	e97	447	170	141	e50	56
7	106	99	e122	104	105	107	e96	360	e140	e100	e50	48
8	106	100	e125	104	105	625	e95	e300	e131	e81	e49	44
9	106	100	128	105	99	702	e95	e250	e116	260	e49	43
10	107	100	e120	106	92	624	e94	e223	205	e152	e49	41
11	e174	102	e119	105	99	411	631	e202	e160	e129	e48	38
12	e140	103	e120	106	113	312	325	e189	e145	e145	e48	37
13	e161	107	e127	107	109	e230	736	e183	e130	e180	e47	35
14	e145	118	e122	108	106	e200	534	e240	e141	140	76	34
15	e140	117	e118	107	103	e176	329	e200	e125	125	372	44
16	e133	112	e120	106	103	e160	277	e182	e115	106	202	45
17	e128	112	e118	103	102	e145	e194	e150	e105	91	137	37
18	e115	112	e115	104	101	e134	e168	e141	e99	e84	110	34
19	e111	110	112	106	99	e125	157	e132	e96	e80	98	32
20	e130	108	109	105	97	e120	e150	e125	94	76	380	31
21	99	109	109	105	120	e113	e136	e120	e91	e70	281	29
22	99	109	108	109	158	e110	e123	e112	e88	e67	213	33
23	99	e111	108	109	136	e107	e120	e110	e105	e64	e148	33
24	99	e113	108	109	121	e105	e117	e105	e91	e62	e128	31
25	98	e117	108	109	110	e108	e114	e105	e89	e62	e96	31
26	97	e121	108	107	106	e110	e112	e220	e87	62	e85	31
27	97	e120	107	104	106	e112	197	e155	e83	e63	e77	30
28	97	e119	106	102	107	e111	181	e220	e81	e61	e74	29
29	96	e118	106	102	---	e109	207	e170	e80	e60	72	27
30	96	e118	107	106	---	e108	368	e145	130	e57	66	24
31	97	---	108	112	---	e104	---	e130	---	e56	64	---
TOTAL	3544	3244	3619	3280	3042	5914	6152	8384	3440	3004	3331	1175
MEAN	114	108	117	106	109	191	205	270	115	96.9	107	39.2
MAX	174	121	135	112	158	702	736	938	205	260	380	61
MIN	96	97	106	102	92	104	94	105	80	56	47	24
AC-FT	7030	6430	7180	6510	6030	11730	12200	16630	6820	5960	6610	2330

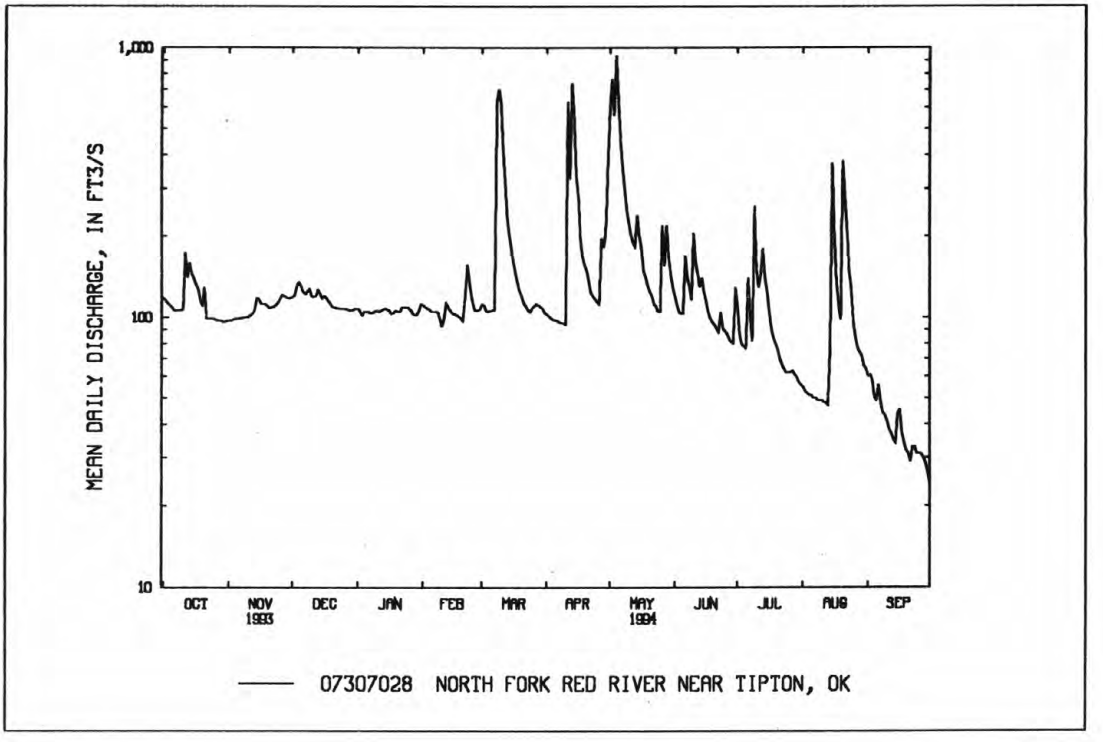
e Estimated

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

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	932	436	370	267	316	643	439	1376	1460	303	197	488
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	115	49.3	39.5	13.5
(WY)	1985	1985	1986	1986	1986	1986	1986	1984	1994	1984	1985	1984

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1984-94	
ANNUAL TOTAL	326553		48129			
ANNUAL MEAN	895		132		603	
HIGHEST ANNUAL MEAN					1987	1987
LOWEST ANNUAL MEAN					132	1994
HIGHEST DAILY MEAN	32800	May 11	938	May 4	39100	May 30 1987
LOWEST DAILY MEAN	96	Oct 29	24	Sep 30	3.7	Sep 7 1985
ANNUAL SEVEN-DAY MINIMUM	97	Oct 26	29	Sep 24	4.7	Sep 6 1985
INSTANTANEOUS PEAK FLOW			1180	Apr 11	57200	Oct 5 1986
INSTANTANEOUS PEAK STAGE			10.60	Apr 11	19.18	May 10 1993
ANNUAL RUNOFF (AC-FT)	647700		95460		437100	
10 PERCENT EXCEEDS	1490		200		1110	
50 PERCENT EXCEEDS	390		107		155	
90 PERCENT EXCEEDS	108		52		53	



07308500 RED RIVER NEAR BURKBURNETT, TX

LOCATION.--Lat 34°06'36", long 98°31'53", Cotton County, Okla., 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 National Geodetic Vertical Datum of 1929. 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.--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 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)
May 27	0400	9,610	7.41				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	175	208	265	279	e370	946	e441	2700	1100	204	85	126
2	154	202	269	252	e380	953	e404	3520	832	165	87	159
3	146	208	426	246	e400	945	e357	4910	616	230	97	191
4	152	205	482	244	e410	949	e320	4610	513	291	91	152
5	156	186	475	263	432	934	266	3340	433	195	95	109
6	158	184	480	253	443	945	258	4090	347	192	e101	106
7	160	202	470	246	410	933	269	2880	357	206	e101	110
8	181	198	440	261	374	1120	256	2010	436	220	e101	e110
9	166	205	414	281	317	5530	260	1580	317	e991	e101	e305
10	158	215	376	282	289	4990	242	1430	267	e3680	e101	e430
11	158	233	356	273	285	3620	244	1340	276	e4390	e104	e180
12	159	249	376	285	284	2760	974	1590	289	e3790	e104	62
13	228	255	403	287	249	2360	2390	e3170	482	e2200	e104	48
14	531	281	409	278	314	1910	1830	e4690	309	1400	e106	40
15	955	293	450	275	346	e1530	1970	e4130	236	1010	1390	36
16	608	336	434	304	353	e1320	1520	e2760	224	746	778	37
17	393	348	399	306	363	1140	1120	1820	222	568	472	65
18	347	336	379	275	353	938	764	1430	201	451	1200	128
19	338	316	371	251	421	853	566	1190	193	366	657	151
20	370	316	351	324	477	796	497	1020	168	277	487	94
21	350	304	340	301	638	717	444	866	154	222	996	64
22	336	286	317	332	1840	668	381	749	150	215	774	48
23	311	277	314	362	2390	611	327	669	150	195	709	42
24	296	249	302	398	1750	552	312	672	150	183	436	37
25	282	238	296	384	1260	529	355	711	146	161	323	36
26	257	226	304	365	1110	512	290	1900	142	145	252	36
27	244	248	283	329	977	480	219	7650	131	141	194	36
28	242	243	260	319	903	478	233	6230	123	129	160	35
29	209	251	266	332	---	457	404	3780	139	109	130	32
30	225	257	270	329	---	447	1820	2200	177	89	109	30
31	222	---	287	e350	---	e446	---	1500	---	84	90	---
TOTAL	8667	7555	11264	9266	18138	41369	19733	81137	9280	23245	10535	3035
MEAN	280	252	363	299	648	1334	658	2617	309	750	340	101
MAX	955	348	482	398	2390	5530	2390	7650	1100	4390	1390	430
MIN	146	184	260	244	249	446	219	669	123	84	85	30
AC-FT	17190	14990	22340	18380	35980	82060	39140	160900	18410	46110	20900	6020

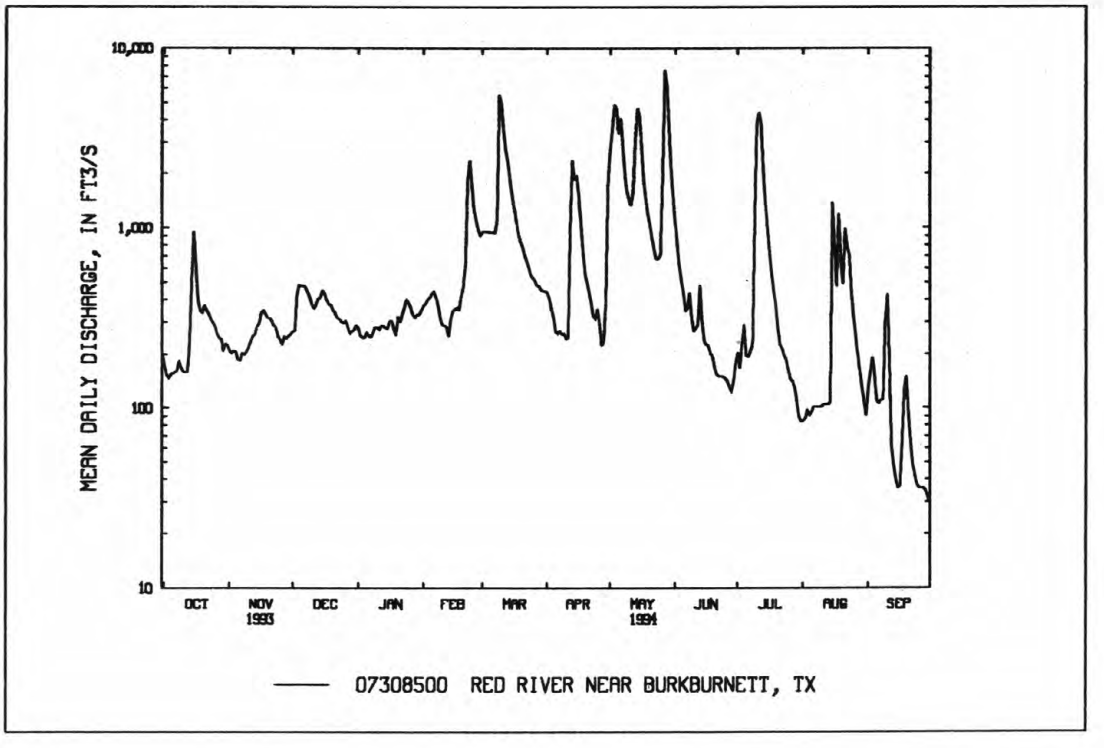
e Estimated

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1626	679	522	449	526	734	824	2392	3009	815	538	1180
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1961-94	
ANNUAL TOTAL	743075		243224			
ANNUAL MEAN	2036		666		1109	
HIGHEST ANNUAL MEAN					4424	1987
LOWEST ANNUAL MEAN					178	1964
HIGHEST DAILY MEAN	51100	May 12	7650	May 27	121000	Oct 22 1983
LOWEST DAILY MEAN	146	Oct 3	30	Sep 30	.00	Jul 19 1964
ANNUAL SEVEN-DAY MINIMUM	157	Oct 1	35	Sep 24	.00	Jul 19 1964
INSTANTANEOUS PEAK FLOW			9610	May 27	166000	Oct 21 1983
INSTANTANEOUS PEAK STAGE			7.41	May 27	16.90	Oct 21 1983
INSTANTANEOUS LOW FLOW					.00	Jul 19 1964
ANNUAL RUNOFF (AC-FT)	1474000		482400		803300	
10 PERCENT EXCEEDS	3410		1580		2200	
50 PERCENT EXCEEDS	1020		314		280	
90 PERCENT EXCEEDS	243		109		48	



07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical analyses: May 1968 to current year. Biochemical analyses: October 1974 to August 1994 (discontinued). 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 1993 TO SEPTEMBER 1994

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 WATER (DEG C) (00010)	TURBIDITY (NTU) (00076)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)
MAR												
25...	0850	1028	80020	529	7120	8.2	10.0	1.2	740	14.5	136	5.8
JUN												
22...	1100	1028	80020	150	7930	8.0	28.0	34	740	9.6	130	0.8
AUG												
03...	1035	1028	80020	101	6540	8.1	25.0	4.0	742	10.2	130	3.6
26...	1450	1028	80020	232	3200	8.5	31.0	48	736	10.3	145	3.3

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)
MAR												
25...	K10	K75	1300	1200	340	120	1100	64	13	8.6	136	0
JUN												
22...	1000	560	1500	1400	420	120	1400	66	16	7.3	121	0
AUG												
03...	340	K90	1400	1300	350	130	1000	60	12	11	106	0
26...	760	360	690	620	180	58	440	58	7	10	75	5

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	ALKALINITY WAT DIS TOT IT FIELD (MG/L AS CACO3) (39086)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUORIDE, 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 CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITROGEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
MAR												
25...	111	1200	1800	0.50	2.6	4880	4640	6.64	6970	<0.010	<0.050	0.020
JUN												
22...	99	1300	2000	0.50	7.0	1560	5320	2.12	632	<0.010	<0.050	0.040
AUG												
03...	87	1200	1600	0.50	5.8	4600	4350	6.26	1250	<0.010	<0.050	0.040
26...	71	590	710	0.40	5.9	308	2040	0.42	193	<0.010	<0.050	0.030

DATE	NITROGEN, AMMONIA DIS-SOLVED (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 DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ALUMINUM, 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)
MAR											
25...	0.03	0.98	1.0	1.0	0.080	<0.010	<0.010	10	<100	<1	20
JUN											
22...	0.05	0.96	1.0	1.0	0.110	0.050	<0.010	<10	100	<1	40
AUG											
03...	0.05	1.1	1.1	1.1	0.070	0.030	<0.010	<10	100	<1	<10
26...	0.04	0.87	0.90	0.90	0.120	0.020	<0.010	20	200	<1	<10

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGANESE, DIS-SOLVED (UG/L AS MN) (01056)	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)	SEDIMENT, SUS-PENDED (MG/L) (80154)	SEDIMENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
MAR											
25...	60	30	4	<1	5	<1.0	4700	35	--	--	--
JUN											
22...	90	20	3	1	3	<1.0	4900	50	118	48	98
AUG											
03...	80	<10	5	1	3	<1.0	4600	7	38	10	98
26...	40	<10	3	2	2	<1.0	2400	28	90	56	100

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.

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 fair. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e23	e22	e18	e23	e25	38	49	1650	86	25	e13	15
2	e22	e21	e17	e22	e22	85	47	512	74	23	e12	e13
3	e22	e21	41	e22	e20	111	47	1010	66	21	e12	24
4	e22	e21	70	e22	19	70	46	1890	62	19	e11	36
5	e22	e20	76	e22	18	58	45	565	56	18	e11	24
6	e21	e20	58	e22	18	53	44	150	51	17	12	22
7	e21	e20	49	e22	18	50	43	165	53	17	23	24
8	e21	e20	44	e22	25	136	43	168	48	48	23	30
9	e20	e19	44	e22	27	2110	42	160	47	70	22	25
10	e20	e19	44	e22	27	993	42	157	46	910	21	17
11	e20	e19	42	e21	27	250	42	156	63	180	21	16
12	e19	e20	38	e21	27	145	48	163	510	76	20	e14
13	e19	e21	53	e21	21	387	57	406	175	47	21	19
14	37	e22	111	e21	17	521	76	757	75	40	20	20
15	35	e23	60	e21	16	491	135	181	57	42	16	20
16	e33	43	40	e21	16	479	134	99	50	102	15	20
17	e28	42	36	e21	16	468	105	77	46	53	e14	19
18	e25	47	34	e21	14	466	54	129	44	37	e13	19
19	e23	39	33	e20	20	462	44	260	42	33	e13	15
20	20	e34	e29	e20	27	453	41	270	40	30	e12	e13
21	52	e29	e27	e20	52	450	40	263	39	28	e12	e12
22	37	e21	e26	e20	216	443	40	261	37	27	e11	15
23	e34	e20	e25	e20	668	435	39	259	29	27	e11	23
24	e29	e19	e24	e20	177	392	39	241	30	47	19	24
25	e26	e19	e24	e20	87	186	40	176	37	66	21	21
26	e24	e19	e24	e20	63	159	65	2620	37	31	33	20
27	e23	e18	e24	e19	52	153	64	1550	35	18	22	19
28	e23	e18	e23	e19	40	98	45	869	34	17	20	18
29	e22	e18	e23	e19	---	61	48	266	24	15	19	14
30	e22	e18	e23	e19	---	54	524	142	43	e14	18	e13
31	e22	---	e23	29	---	50	---	105	---	e13	18	---
TOTAL	787	712	1203	654	1775	10307	2128	15677	2036	2111	529	584
MEAN	25.4	23.7	38.8	21.1	63.4	332	70.9	506	67.9	68.1	17.1	19.5
MAX	52	47	111	29	668	2110	524	2620	510	910	33	36
MIN	19	18	17	19	14	38	39	77	24	13	11	12
AC-FT	1560	1410	2390	1300	3520	20440	4220	31100	4040	4190	1050	1160

e Estimated

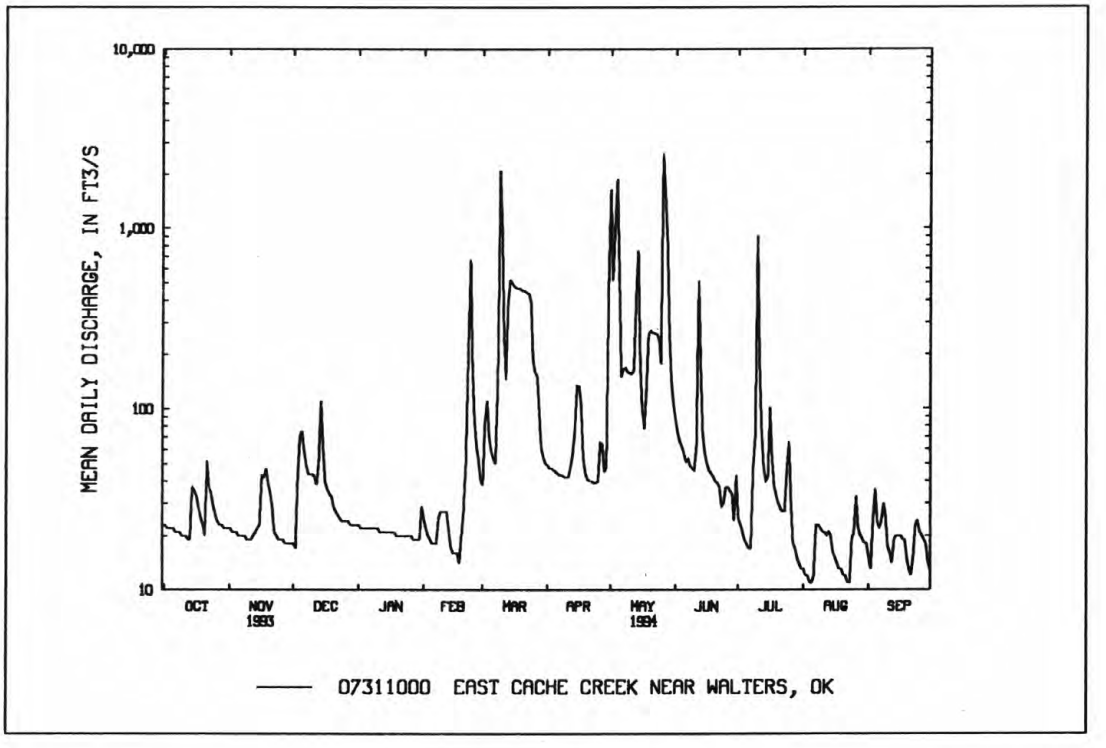
07311000 EAST CACHE CREEK NEAR WALTERS, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	245	105	137	92.8	141	239	227	607	454	101	54.6	143
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1938-94	
ANNUAL TOTAL	187843		38503			
ANNUAL MEAN	515		105		214	
HIGHEST ANNUAL MEAN					911	1987
LOWEST ANNUAL MEAN					12.6	1939
HIGHEST DAILY MEAN	11400	May 11	2620	May 26	34600	Oct 21 1983
LOWEST DAILY MEAN	13	Aug 18	11	Aug 4	.00	Jul 24 1939
ANNUAL SEVEN-DAY MINIMUM	15	Aug 14	12	Jul 31	.00	Aug 1 1939
INSTANTANEOUS PEAK FLOW			3430	May 26	50900	Oct 21 1983
INSTANTANEOUS PEAK STAGE			22.68	May 26	30.66	Oct 21 1983
INSTANTANEOUS LOW FLOW			[a]11	Aug 4	[b].00	Jul 24 1939
ANNUAL RUNOFF (AC-FT)	372600		76370		154900	
10 PERCENT EXCEEDS	965		226		393	
50 PERCENT EXCEEDS	150		27		34	
90 PERCENT EXCEEDS	20		17		10	

[a]Also occurred Aug. 5, 22, 23.
[b]No flow at times in 1939-40.



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)
Mar 8	0500	840	10.45				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.32	1.3	.60	1.5	.99	21	4.6	30	3.5	1.1	.00	.00
2	.31	1.3	.69	1.3	.89	19	4.5	126	3.3	.91	.00	.00
3	.32	1.3	3.1	1.5	.89	13	4.1	97	3.2	.75	.00	.00
4	.34	1.5	4.3	1.3	.82	11	4.4	40	2.7	.56	.00	.00
5	.39	1.5	3.3	1.3	.74	9.3	4.1	25	2.5	.43	.00	.00
6	.39	1.5	2.7	1.4	.74	8.4	3.9	19	2.3	.58	.00	.00
7	.35	1.6	2.3	1.2	.90	7.8	3.8	15	2.1	.35	.00	.00
8	.43	1.7	2.1	1.3	.74	462	3.6	12	1.8	.26	.00	.00
9	.34	1.5	2.1	1.3	.74	172	3.5	9.8	1.8	.80	.00	.00
10	.35	1.5	2.0	1.3	.81	59	3.3	9.3	3.1	.75	.00	.00
11	.42	1.5	1.9	1.0	.89	36	4.9	8.6	13	.65	.00	.00
12	.42	1.7	2.0	1.1	.80	26	4.0	9.8	10	.61	.00	.00
13	.80	3.3	4.5	1.1	.74	26	3.5	39	6.9	.50	.00	.00
14	.59	1.9	4.1	1.1	e.70	21	3.3	24	5.6	.34	.00	.00
15	.59	.78	3.7	1.1	e.67	18	3.2	17	4.8	.71	.00	.00
16	.68	.70	3.5	1.1	e.65	15	3.1	12	4.3	.77	.00	.00
17	.65	.67	3.2	1.1	e.64	13	3.0	10	3.8	.40	.00	.00
18	.74	.59	3.0	1.1	e.64	12	2.9	8.8	3.5	.34	.00	.00
19	.96	.52	2.9	1.0	.90	11	2.7	7.5	3.6	.24	.00	.00
20	.86	.59	2.5	1.0	1.1	10	2.6	6.5	3.5	.10	.00	.00
21	.74	.69	2.3	.89	7.9	9.4	2.4	5.7	3.0	.07	.00	.00
22	.54	.74	2.3	.89	95	9.0	2.3	5.0	2.6	.14	.00	.00
23	.42	.74	2.1	.96	24	7.9	2.1	4.5	2.3	.10	.00	.00
24	.42	.66	1.9	1.1	15	7.1	2.3	4.2	2.1	.06	.00	.00
25	.39	.59	1.8	1.1	11	6.9	3.0	7.2	1.8	.02	.00	.00
26	.64	.68	1.8	.95	8.9	7.1	2.5	11	1.6	.06	.00	.00
27	.78	.74	1.7	1.3	7.8	6.4	2.0	7.5	1.5	.00	.00	.00
28	.88	.74	1.5	.80	7.3	5.9	2.4	6.9	1.2	.00	.00	.00
29	.96	.69	1.6	.89	---	5.6	20	6.0	1.2	.00	.00	.00
30	1.1	.59	1.6	.95	---	5.2	80	5.0	1.4	.00	.00	.00
31	1.2	---	1.5	1.1	---	4.8	---	4.3	---	.00	.00	---
TOTAL	18.32	33.81	74.59	35.03	192.89	1045.8	192.0	593.6	104.0	11.60	0.00	0.00
MEAN	.59	1.13	2.41	1.13	6.89	33.7	6.40	19.1	3.47	.37	.000	.000
MAX	1.2	3.3	4.5	1.5	95	462	80	126	13	1.1	.00	.00
MIN	.31	.52	.60	.80	.64	4.8	2.0	4.2	1.2	.00	.00	.00
AC-FT	36	67	148	69	383	2070	381	1180	206	23	.00	.00

e Estimated

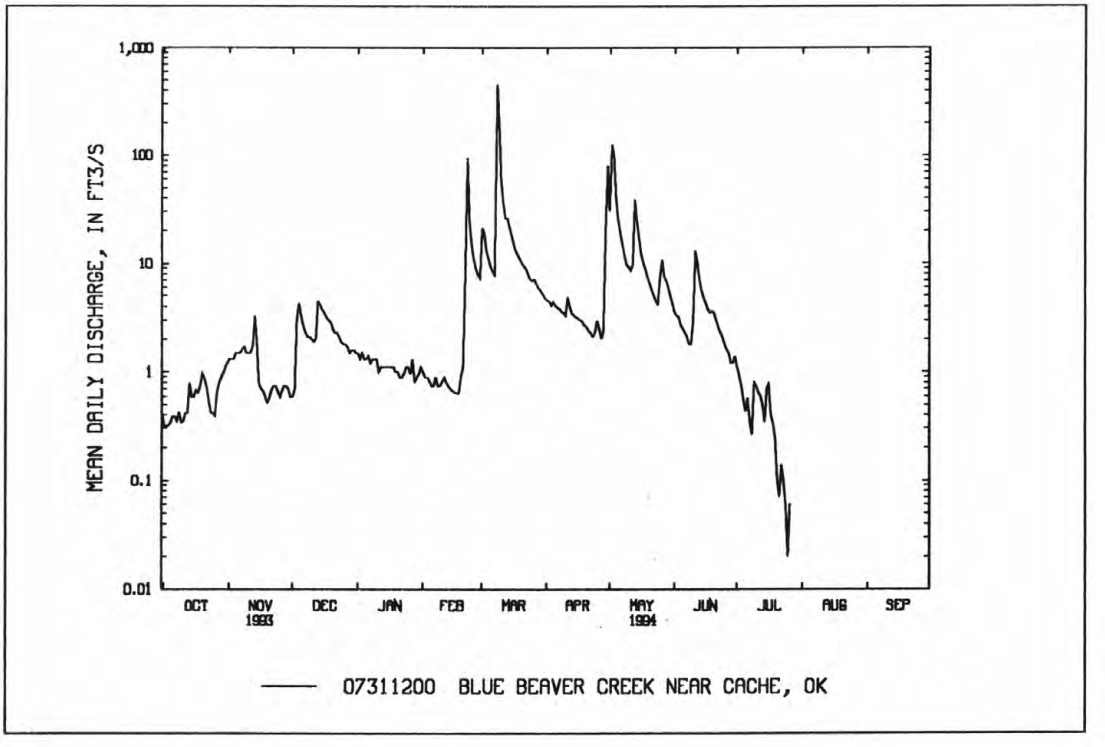
07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.1	7.79	9.61	8.06	12.4	22.2	18.2	36.9	20.6	1.35	1.15	5.80
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1964-94	
ANNUAL TOTAL	6303.09		2301.64			
ANNUAL MEAN	17.3		6.31		13.4	
HIGHEST ANNUAL MEAN					47.8	1987
LOWEST ANNUAL MEAN					.48	1966
HIGHEST DAILY MEAN	550	May 9	462	Mar 8	2600	Oct 20 1983
LOWEST DAILY MEAN	.00	Jul 30	[a].00	Jul 27	[a].00	Jul 1 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 12	.00	Jul 27	.00	Jul 1 1964
INSTANTANEOUS PEAK FLOW			840	Mar 8	[b]13600	Oct 28 1977
INSTANTANEOUS PEAK STAGE			10.45	Mar 8	[c]18.02	Oct 28 1977
INSTANTANEOUS LOW FLOW			.00	Jul 20	.00	Jul 20 1994
ANNUAL RUNOFF (AC-FT)	12500		4570		9690	
10 PERCENT EXCEEDS	39		10		24	
50 PERCENT EXCEEDS	3.7		1.2		1.0	
90 PERCENT EXCEEDS	.00		.00		.00	

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



RED RIVER BASIN
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 1993 TO SEPTEMBER 1994

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											
07...	1501	2.00	30.5	725	1028	1028	2.3	6.85	181	7.8	8.1
07...	1502	3.00	30.5	725	1028	1028	2.3	6.85	179	7.7	8.1
07...	1503	4.00	30.5	725	1028	1028	2.3	6.85	179	7.7	8.1
07...	1504	5.00	30.5	725	1028	1028	2.3	6.85	178	7.8	8.1
07...	1505	6.00	30.5	725	1028	1028	2.3	6.85	175	7.8	8.1
07...	1506	7.00	30.5	725	1028	1028	2.3	6.85	178	7.8	8.1
07...	1507	8.00	30.5	725	1028	1028	2.3	6.85	178	7.9	8.1
07...	1508	9.00	30.5	725	1028	1028	2.3	6.85	177	7.8	8.1
07...	1509	10.0	30.5	725	1028	1028	2.3	6.85	177	7.8	8.1
07...	1510	11.0	30.5	725	1028	1028	2.3	6.85	178	7.8	8.1
07...	1511	12.0	30.5	725	1028	1028	2.3	6.85	178	7.8	8.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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											
04...	1200	1028	80020	0.32	261	7.3	23.0	21.0	4.2	737	9.1
FEB											
16...	0930	1028	80020	E0.65	191	7.6	5.5	6.5	1.4	742	12.0
JUN											
07...	1500	1028	80020	2.3	178	8.1	36.5	30.5	1.5	725	7.8

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 DISSOLVFLD. 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											
04...	106	25	79	87	0	25	5.9	18	31	0.8	1.7
FEB											
16...	101	740	65	67	0	19	4.6	13	29	0.7	1.0
JUN											
07...	110	55	29	66	0	19	4.4	12	28	0.6	1.4

07311200 BLUE BEAVER CREEK NEAR CACHE, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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											
04...	113	0	93	19	9.3	0.40	15	158	150	0.21	0.14
FEB											
16...	83	0	68	15	7.1	0.40	9.4	115	111	0.16	--
JUN											
07...	91	0	75	9.7	6.4	0.40	13	101	111	0.14	0.63

DATE	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)	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										
04...	<0.010	--	<0.050	0.040	0.05	0.26	0.30	0.30	--	0.060
FEB										
16...	0.040	0.13	<0.050	0.010	0.01	--	<0.20	--	0.010	0.010
JUN										
07...	<0.010	--	<0.050	0.010	0.01	0.19	0.20	0.20	0.010	<0.010

DATE	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P) (00671)	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)	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)
OCT										
04...	<0.010	<10	69	<3	43	<4	16	<10	<1	<1
FEB										
16...	<0.010	10	54	<3	81	<4	13	<10	<1	<1
JUN										
07...	<0.010	40	58	<3	90	<4	8	<10	<1	<1

DATE	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)	URANIUM RA-226 2 SIGMA WATER, DISS, (PCI/L) (76001)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)	NATURAL 2 SIGMA WATER, DISS, (UG/L) (75990)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT										
04...	<1.0	100	<6	--	--	--	--	14	0.01	80
FEB										
16...	<1.0	74	<6	0.05	0.020	0.14	<1.0	--	--	--
JUN										
07...	<1.0	75	<6	0.05	0.020	0.13	<1.0	12	0.08	70

07311500 DEEP RED CREEK NEAR RANDLETT, OK

(Formerly published as Deep Red Run near Randlett)

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. Prior to October 1993, published as Deep Red Run near Randlett.

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)
Mar. 11	1230	2,190	19.20	May 27	1930	5,500	23.02

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e3.2	e5.9	e6.6	e6.8	4.8	e11	e7.8	1330	54	27	e4.7	e.88
2	e3.3	e5.8	e6.5	e6.8	e58	e12	e7.4	477	43	32	e4.6	e1.4
3	e3.3	e5.9	e6.4	e6.4	e15	14	e7.1	536	36	25	e4.4	e2.7
4	e3.4	e5.6	e6.6	e6.4	4.4	15	e6.6	592	29	17	e4.3	e2.3
5	e3.6	e5.6	e6.8	e6.4	4.3	18	e6.2	230	25	6.5	e4.2	e2.1
6	e3.7	e5.7	e6.7	e6.4	3.8	19	e5.8	104	21	3.7	e4.1	e1.9
7	e4.0	e5.8	e6.5	e6.4	3.5	15	e5.6	57	63	2.8	e4.0	e1.7
8	e4.3	e5.7	e6.4	e6.4	e3.3	13	e5.1	43	29	15	e4.0	e1.6
9	e4.6	e5.8	e6.4	e6.4	e3.0	391	6.6	37	21	278	e3.9	e1.5
10	e5.0	e5.6	e6.4	e6.4	e2.9	1780	8.0	32	18	116	e3.8	e1.3
11	e5.6	e5.9	e6.3	e6.4	e2.7	2010	6.5	29	83	139	e3.6	e1.2
12	e6.6	e5.8	e6.2	e6.1	e2.6	510	4.9	28	309	40	e3.5	e1.2
13	e8.8	e5.9	e9.0	e6.1	e2.5	124	4.3	52	152	24	e3.4	e1.5
14	e12	e6.0	e15	e6.1	e2.3	62	13	615	50	18	100	e2.0
15	24	e8.0	e25	e6.0	e2.2	44	14	417	31	18	510	e2.5
16	34	e11	34	e6.0	e2.1	40	12	139	22	28	40	e2.2
17	e24	e17	e22	e6.0	e2.0	31	7.3	70	19	35	11	e1.8
18	e15	e22	e12	e6.0	e2.0	26	5.4	48	15	20	5.7	e1.6
19	e9.6	e17	e9.8	e5.8	7.2	21	5.0	39	10	15	e3.3	e1.4
20	6.7	e12	e9.0	e5.6	4.0	18	4.3	33	7.4	7.4	e2.7	e1.3
21	e20	e10	e8.6	e5.6	231	17	3.5	28	6.5	3.9	e2.1	e1.2
22	e29	e9.2	e8.4	e5.6	359	14	e2.9	23	5.7	3.1	e1.5	e1.2
23	e22	e8.6	e8.2	e5.6	559	14	e3.3	19	e4.7	e2.9	e1.2	e1.5
24	e15	e8.1	e7.6	e5.4	118	13	5.5	15	e4.6	e2.8	e.98	e1.6
25	e10	e7.9	e7.2	e5.4	38	12	8.5	10	e3.9	e2.7	e.80	e1.8
26	e7.0	e7.5	e7.2	e5.4	24	11	9.9	1640	3.2	7.9	e.70	e1.6
27	e6.4	e7.0	e7.2	e5.4	16	e9.8	7.2	3670	3.1	10	e.56	e1.5
28	e6.3	e6.8	e6.8	e5.3	14	e9.2	6.0	3140	3.7	e6.8	e.40	e1.4
29	e6.4	e6.7	e6.8	e5.1	---	e8.8	24	478	4.5	e5.8	e.38	e1.2
30	e6.2	e6.8	e6.8	e4.8	---	e8.4	371	141	6.9	e5.2	e.37	e1.1
31	e6.0	---	e6.8	e4.7	---	e8.1	---	74	---	e5.0	.36	---
TOTAL	319.0	246.6	295.2	183.2	1491.6	5299.3	584.7	14146	1084.2	923.5	734.55	48.18
MEAN	10.3	8.22	9.52	5.91	53.3	171	19.5	456	36.1	29.8	23.7	1.61
MAX	34	22	34	6.8	559	2010	371	3670	309	278	510	2.7
MIN	3.2	5.6	6.2	4.7	2.0	8.1	2.9	10	3.1	2.7	.36	.88
AC-FT	633	489	586	363	2960	10510	1160	28060	2150	1830	1460	96

e Estimated

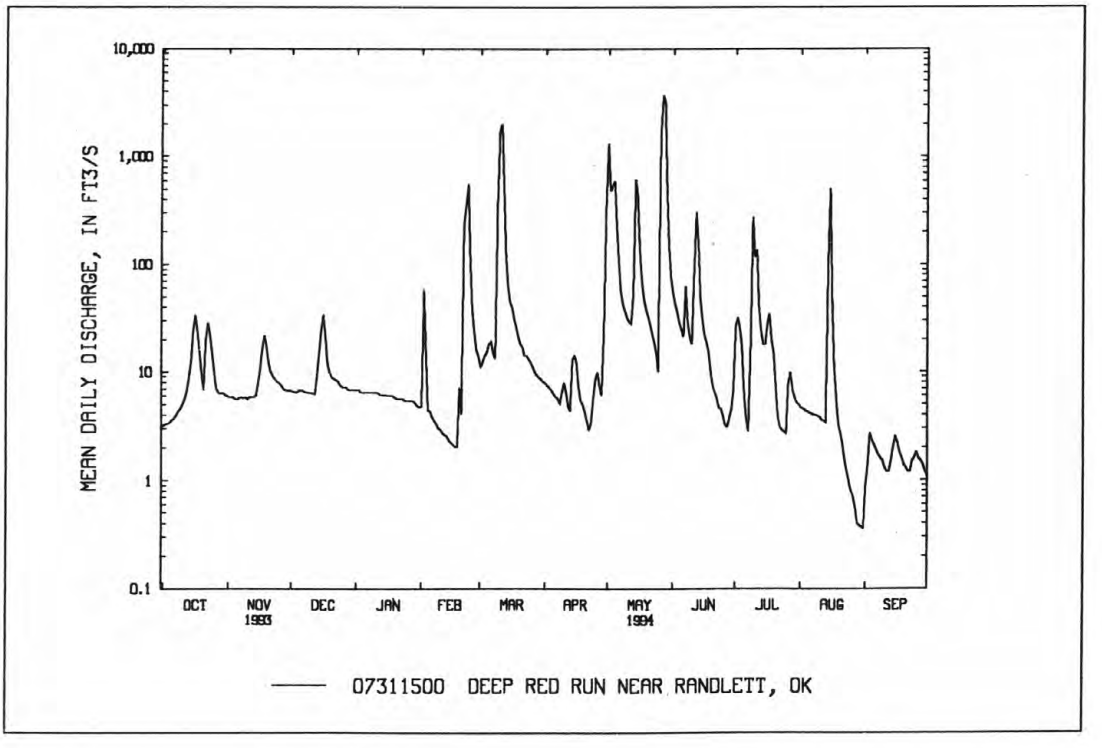
07311500 DEEP RED RUN NEAR RANDLETT, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	281	92.7	75.0	51.0	74.7	119	130	502	382	66.0	46.4	185
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1950-94	
ANNUAL TOTAL	75085.9		25356.03			
ANNUAL MEAN	206		69.5		167	
HIGHEST ANNUAL MEAN					904	1987
LOWEST ANNUAL MEAN					15.8	1953
HIGHEST DAILY MEAN	6450	May 10	3670	May 27	46300	Oct 20 1983
LOWEST DAILY MEAN	2.8	Sep 26	.36	Aug 31	.00	Sep 28 1951
ANNUAL SEVEN-DAY MINIMUM	3.4	Sep 30	.51	Aug 25	.00	Oct 3 1951
INSTANTANEOUS PEAK FLOW			5500	May 27	72300	Oct 20 1983
INSTANTANEOUS PEAK STAGE			23.02	May 27	[a]29.58	May 29 1987
INSTANTANEOUS LOW FLOW			.36	Aug 31		
ANNUAL RUNOFF (AC-FT)	148900		50290		121300	
10 PERCENT EXCEEDS	413		60		186	
50 PERCENT EXCEEDS	30		6.7		4.4	
90 PERCENT EXCEEDS	5.7		2.0		.00	

[a]Due to backwater from West Cache Creek.



07315500 RED RIVER NEAR TERRAL, OK

LOCATION.--Lat 33°52'43", long 97°56'03", Jefferson County, Hydrologic Unit 11130201, on left bank at downstream side of bridge abutment on U.S. Highway 81, 0.5 mi downstream from Chicago, 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 National Geodetic Vertical Datum of 1929. Prior to Jan. 12, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are many small diversions upstream from station for irrigation, oil field operations, and for 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)

No peak greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	400	363	367	466	447	1700	605	3000	3890	378	218	249
2	363	357	376	460	452	2110	588	5430	3500	437	201	236
3	341	350	1330	454	463	1890	559	6180	3220	423	193	262
4	333	354	2070	454	461	1330	557	7340	2750	411	191	272
5	326	384	2190	451	456	1090	541	7430	2330	369	199	282
6	316	372	1020	448	451	891	520	5230	2190	353	200	286
7	317	355	803	438	448	808	539	3640	1620	363	199	284
8	320	347	697	431	450	781	537	2870	909	436	190	264
9	309	344	624	439	438	3570	523	2340	813	557	202	349
10	313	343	570	447	402	12300	506	1950	757	1750	200	525
11	e324	346	544	440	438	8060	515	1470	688	3940	201	468
12	339	351	536	439	457	4580	508	1330	701	4450	196	339
13	369	355	561	434	443	3490	506	1340	1190	3630	185	265
14	374	359	803	442	428	2950	952	1710	1760	3000	184	227
15	434	369	976	466	424	2870	1500	4040	1350	2180	208	220
16	516	396	756	481	415	2590	1390	4150	893	1470	401	486
17	731	438	737	486	420	2260	1550	3350	669	867	566	644
18	653	446	687	475	421	1910	1290	2350	597	758	936	279
19	563	472	626	482	417	1710	953	1520	536	686	639	216
20	554	452	586	477	436	1520	770	1260	511	561	642	207
21	565	435	553	467	441	1430	665	1160	486	415	504	222
22	610	425	541	482	2590	1350	618	1080	446	361	391	235
23	575	411	514	491	6100	1160	587	974	411	345	503	215
24	549	390	505	493	4920	1100	569	880	387	326	456	184
25	492	371	497	492	4120	1040	570	880	378	316	459	166
26	452	366	490	492	2470	975	662	1110	e339	298	375	160
27	420	368	488	498	1430	823	679	8170	e336	295	317	159
28	404	362	475	487	1080	750	636	20200	e330	290	283	156
29	394	362	461	470	---	734	685	17300	e336	270	262	151
30	382	362	465	453	---	693	1120	7640	e343	256	247	150
31	365	---	462	453	---	633	---	4730	---	236	248	---
TOTAL	13403	11405	22310	14388	31918	69098	22200	132054	34666	30427	10196	8158
MEAN	432	380	720	464	1140	2229	740	4260	1156	982	329	272
MAX	731	472	2190	498	6100	12300	1550	20200	3890	4450	936	644
MIN	309	343	367	431	402	633	506	880	330	236	184	150
AC-FT	26580	22620	44250	28540	63310	137100	44030	261900	68760	60350	20220	16180

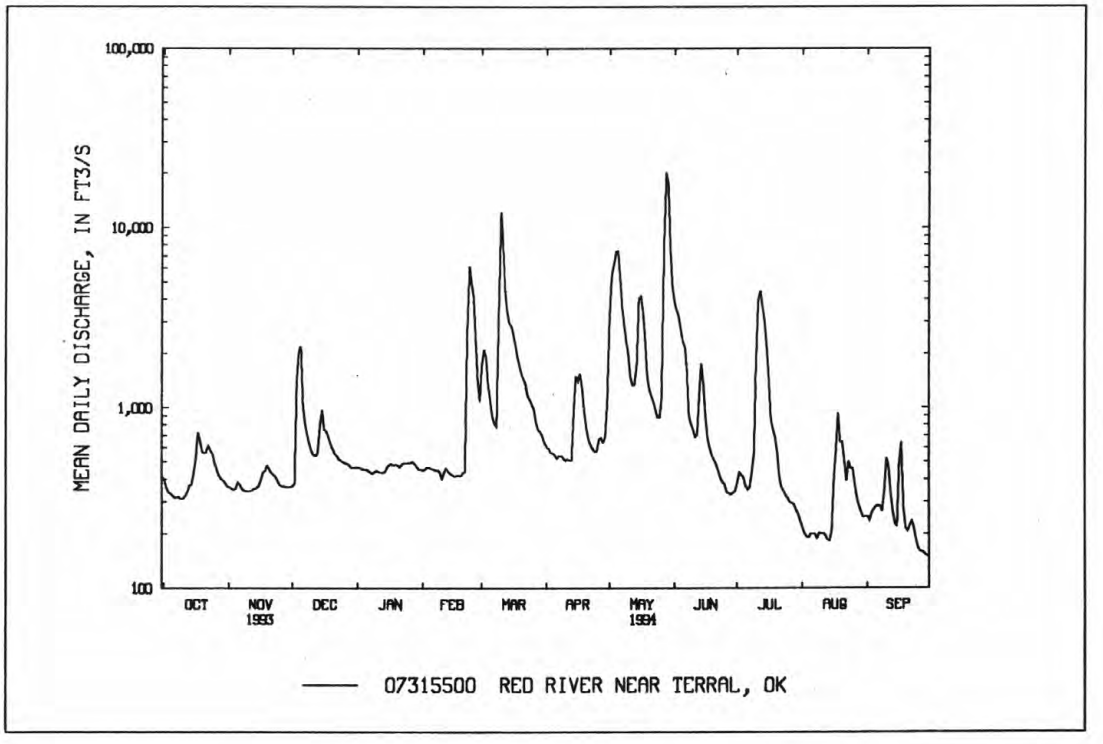
e Estimated

07315500 RED RIVER NEAR TERRAL, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3137	1488	1119	894	1255	1817	2483	6783	6024	1664	1089	1960
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1938-94	
ANNUAL TOTAL	1743839		400223			
ANNUAL MEAN	4778		1097		2475	
HIGHEST ANNUAL MEAN					8925	1987
LOWEST ANNUAL MEAN					523	1953
HIGHEST DAILY MEAN	76600	May 11	20200	May 28	211000	May 30 1987
LOWEST DAILY MEAN	309	Oct 9	150	Sep 30	46	Mar 20 1940
ANNUAL SEVEN-DAY MINIMUM	318	Oct 5	161	Sep 24	47	Mar 18 1940
INSTANTANEOUS PEAK FLOW			22700	May 29	225000	May 30 1987
INSTANTANEOUS PEAK STAGE			14.76	May 29	33.60	Oct 22 1983
INSTANTANEOUS LOW FLOW					43	Mar 15 1939
ANNUAL RUNOFF (AC-FT)	3459000		793800		1793000	
10 PERCENT EXCEEDS	10200		2520		5370	
50 PERCENT EXCEEDS	2300		486		572	
90 PERCENT EXCEEDS	380		262		172	



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 Texas 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, 7,200 microsiemens Feb. 11; minimum daily, 800 microsiemens May 27.
WATER TEMPERATURE: Maximum daily, 34.5°C June 24: minimum daily, 0.0°C Feb. 9.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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)	TEMPERATURE WATER (DEG C) (00010)	HARDNESS TOTAL (MG/L AS CACO3) (00900)	HARDNESS NONCARB DISSOLVED 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)
NOV											
28...	0955	1028	80020	361	5600	4.5	1100	940	290	97	870
JAN											
13...	1100	1028	80020	437	5360	8.0	1000	890	260	97	790
MAR											
07...	1430	1028	80020	818	4420	17.5	730	660	170	73	630
AUG											
03...	0900	1028	80020	193	4680	25.0	960	740	230	94	700

DATE	SODIUM PERCENT (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)
NOV										
28...	63	11	7.8	830	1300	0.60	5.3	3510	4.77	3420
JAN										
13...	62	11	6.4	840	1300	0.40	2.7	3390	4.61	4000
MAR										
07...	65	10	6.5	610	1000	0.40	0.70	2530	3.44	5590
AUG										
03...	61	10	11	790	1100	0.50	4.6	3060	4.17	1600

07315500 RED RIVER NEAR TERRAL, OK--Continued

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCTANCE (MICRO-SIEMENS)	DISSOLVED SOLIDS (MG/L)	DISSOLVED SOLIDS (TONS)	DISSOLVED CHLORIDE (MG/L)	DISSOLVED CHLORIDE (TONS)	DISSOLVED SULFATE (MG/L)	DISSOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1993	13403	4260	2490	90200	940	33900	600	21800	740
NOV.	1993	11405	4960	2960	91100	1100	34800	710	21900	860
DEC.	1993	22310	4170	2440	147000	920	55300	590	35500	720
JAN.	1994	14388	5440	3300	128000	1300	49500	790	30700	950
FEB.	1994	31918	3150	1860	160000	700	60500	450	38500	550
MAR.	1994	69098	2980	1680	314000	610	114000	410	76100	510
APR.	1994	22200	4740	2820	169000	1100	64400	680	40700	820
MAY	1994	132054	2110	1160	415000	420	148000	280	100900	350
JUNE	1994	34666	3300	1880	176000	690	64900	460	42700	560
JULY	1994	30427	2330	1300	107000	470	38600	320	26000	390
AUG.	1994	10196	3560	2060	56600	760	21000	500	13700	610
SEPT	1994	8158	3810	2200	48500	820	18000	530	11700	650
TOTAL		400223	**	**	1903000	**	703000	**	460000	**
WTD.AVG.		1097	3070	1760	**	650	**	430	**	520

07315500 RED RIVER NEAR TERRAL, OK--Continued

SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY EQUIVALENT MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4400	5440	5250	e5270	5140	2920	5020	e1300	3650	4640	3380	4110
2	4270	5360	5280	e5190	5660	3140	e5100	1600	2990	e4500	4610	4210
3	e4340	5210	3010	5110	6220	3230	e5180	930	2440	e4320	4690	e4200
4	4420	5190	e3000	5320	e6100	3730	e5280	2390	e2400	e4140	4770	e4200
5	4660	5100	e2980	5350	e6000	e3980	5390	2440	e2380	3960	4850	4200
6	4810	e5000	2940	5360	e5950	e4730	5290	2610	2370	4170	e4890	4650
7	4720	e4900	3540	5360	5900	4420	5280	e2640	2620	e4290	e4940	4510
8	e4690	4790	4200	e5360	6270	e4500	5380	e2680	3730	4410	4980	3990
9	4660	e4770	4260	5360	6540	1880	e5400	2720	3930	4970	5050	3470
10	4710	e4740	4710	5460	7000	2150	e5420	2820	e4450	1680	5010	e3300
11	4650	4720	4950	5320	7200	e2400	e5440	3450	4980	1270	4940	e3350
12	4660	4670	e5000	5360	e6600	e2650	e5460	3610	e4600	1660	e4850	3400
13	4340	e4700	5050	5360	e6700	2900	5470	3770	4230	1470	e4760	3430
14	4330	e4740	4230	5350	e6800	3040	6210	e2850	2310	1470	e4700	e3600
15	4680	4750	3510	e5390	6820	3310	e4100	e1800	2420	2020	4650	3820
16	e4400	4660	3730	e5440	6630	3310	e4350	1960	3250	e2270	2630	2750
17	e3200	e4640	4090	5480	6550	3300	e4580	3260	3050	e2400	5220	e2600
18	e3500	4620	e4260	5600	e6500	3340	4760	3120	e3600	2580	2040	e3400
19	3570	4560	e4460	5650	e6600	e3390	e4630	3340	e4000	e2800	e2300	3790
20	3570	e4650	4630	5480	e6650	e3440	4500	4370	4300	3090	e2500	3950
21	4040	e4740	5120	5520	e6700	e3490	4900	e4300	4560	3780	e2800	4510
22	4110	e4830	5330	e5500	1620	3520	4930	e4210	e4800	3730	e3000	4810
23	e4070	e4920	5450	e5490	1290	3710	e4960	4130	5040	e3850	3120	4700
24	4030	e5010	5440	5480	1660	3600	5000	e4000	5500	e3980	3760	e4600
25	4300	e5150	e5390	5460	2090	e3740	5040	3860	e5450	4100	2920	e4530
26	4330	e5350	e5290	5640	e2350	e3880	4190	e2000	e5410	4360	e3200	4400
27	4480	e5500	5160	5560	e2650	e4010	4710	800	e5400	4600	e3400	4460
28	4460	e5600	5240	5550	2900	e4150	4480	1210	e5390	4240	e3550	4320
29	e4680	5500	5310	5520	---	4290	4110	e1650	5380	4000	3670	4160
30	e4900	5250	5360	e5600	---	4340	e2000	2030	5510	e4190	3810	4720
31	5120	---	5320	5700	---	4660	---	4170	---	4390	3740	---
MEAN	4360	4970	4560	5440	5320	3520	4890	2770	4000	3460	3960	4000
MAX	5120	5600	5450	5700	7200	4730	6210	4370	5510	4970	5220	4810
MIN	3200	4560	2940	5110	1290	1880	2000	800	2310	1270	2040	2600

e Estimated

07315500 RED RIVER NEAR TERRAL, OK--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY INSTANTANEOUS VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26.0	9.5	14.5	---	5.0	6.0	20.0	---	26.5	33.0	32.5	27.0
2	24.5	10.5	16.0	---	6.0	10.0	---	13.0	27.0	---	30.0	28.0
3	---	12.5	14.0	8.0	9.0	12.0	---	15.0	27.0	---	25.0	---
4	26.0	16.5	---	8.0	---	15.0	---	18.0	---	---	32.0	---
5	26.5	11.0	---	9.5	---	---	14.0	20.0	---	32.5	31.0	29.0
6	27.0	---	11.0	9.0	---	---	15.0	24.0	29.0	32.0	---	28.5
7	24.0	---	11.0	4.5	10.5	18.5	17.0	---	30.0	---	---	29.0
8	---	10.5	12.0	---	9.5	---	20.5	---	31.0	26.0	31.0	27.0
9	18.0	---	15.0	7.0	.0	8.5	---	20.5	31.5	---	31.0	28.0
10	20.0	---	14.5	10.5	3.0	9.0	---	20.5	---	26.5	31.5	---
11	21.5	15.0	12.0	12.0	6.0	---	---	23.5	26.0	28.0	32.0	---
12	21.0	18.5	---	11.0	---	---	---	25.5	---	29.0	---	29.0
13	22.5	---	10.0	8.0	---	13.0	22.5	24.5	29.5	30.0	---	29.5
14	22.5	---	9.5	10.0	---	14.5	22.0	---	28.5	29.0	---	---
15	22.5	12.5	9.0	---	12.0	16.5	---	---	26.5	30.5	28.0	29.0
16	---	10.5	7.5	---	14.5	17.0	---	25.5	29.0	---	30.0	24.0
17	---	---	9.0	5.0	11.0	19.0	---	25.5	30.5	---	30.5	---
18	---	14.0	---	3.0	---	19.5	23.0	26.0	---	32.5	31.0	---
19	18.5	13.0	---	2.0	---	---	---	27.5	---	---	---	25.5
20	19.5	---	8.0	4.0	---	---	25.5	27.0	30.0	32.0	---	28.0
21	18.5	---	7.0	5.0	---	---	24.5	---	33.5	31.0	---	27.0
22	19.0	---	7.0	---	9.0	18.5	26.0	---	---	32.0	---	21.0
23	---	---	7.5	---	7.5	21.0	---	27.5	33.5	---	31.0	18.5
24	18.5	---	4.0	11.5	9.0	18.5	26.0	---	34.5	---	31.5	---
25	19.0	---	---	14.5	7.5	---	22.5	28.5	---	31.0	32.0	---
26	17.0	---	---	15.0	---	---	24.0	---	---	31.5	---	26.5
27	16.0	---	9.0	10.0	---	---	21.0	23.5	---	30.0	---	29.0
28	17.5	4.5	4.5	7.5	7.5	---	18.0	22.0	---	---	---	29.5
29	---	9.5	5.5	6.0	---	16.0	8.0	---	34.0	29.5	32.0	29.0
30	---	11.5	7.0	---	---	16.5	---	26.0	34.0	---	32.0	29.5
31	10.0	---	8.0	4.5	---	18.5	---	27.0	---	31.5	26.0	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---

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. 4	2000	3,310	24.80	May 31	1700	1,640	22.26
May 6	0200	1,570	22.06				

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	12	8.1	18	16	e100	e30	552	523	20	9.6	.46
2	16	12	8.2	18	15	e250	e30	494	126	16	9.5	.65
3	12	11	315	18	15	e550	e30	959	85	14	9.3	.81
4	10	13	2300	18	15	e500	e30	1390	64	11	9.1	49
5	8.1	13	2410	17	15	e150	e25	1430	52	8.2	8.9	32
6	7.5	13	1430	17	15	e80	e25	967	46	6.7	8.6	15
7	6.6	14	158	16	16	e40	e25	158	41	6.2	8.1	9.5
8	5.9	14	75	16	16	e400	e25	102	37	8.3	7.8	6.5
9	4.9	14	49	16	15	e1500	e25	74	34	e300	7.4	6.5
10	4.6	14	39	16	14	e1400	e25	61	31	e1200	6.8	187
11	4.5	14	34	16	14	e500	e50	53	e30	e1100	6.5	196
12	5.0	15	30	17	14	e150	e100	51	e25	e800	6.3	44
13	82	15	294	17	14	e70	e90	86	e25	e400	6.0	23
14	62	17	537	19	14	e60	e70	433	e25	e80	6.0	15
15	37	17	517	18	15	e50	e60	547	e20	e200	5.4	12
16	26	19	155	17	15	e50	e55	224	e20	e800	4.4	20
17	17	17	78	18	e15	e50	e50	96	e20	e400	4.6	178
18	12	16	51	17	e15	e40	e50	62	e15	e100	4.3	247
19	14	16	40	22	e20	e40	e50	47	e15	e60	4.3	57
20	84	19	34	19	e25	e40	e45	40	e15	e40	4.1	27
21	78	15	31	17	e20	e35	e45	36	e10	e20	4.0	17
22	55	12	28	16	e400	e35	e45	33	e10	e15	3.7	12
23	33	10	25	18	e1500	e35	e45	30	e10	e15	3.8	8.9
24	20	7.8	24	19	e1400	e35	e45	28	e10	e15	3.7	7.3
25	14	6.8	22	20	e800	e35	e45	27	e10	12	3.4	5.9
26	10	6.2	21	21	e160	e30	e45	78	e10	12	e2.7	5.1
27	8.5	5.7	20	21	e80	e30	e45	494	9.6	11	e2.0	4.6
28	9.0	6.9	19	19	e50	e30	42	750	9.1	11	e1.6	4.3
29	9.5	7.2	19	18	---	e30	86	1400	9.1	11	e1.2	4.0
30	11	7.1	18	17	---	e30	494	1250	11	10	e1.0	3.3
31	12	---	18	16	---	e30	---	1540	---	9.9	e.65	---
TOTAL	700.1	379.7	8807.3	552	4723	6375	1827	13492	1347.8	5712.3	164.75	1198.82
MEAN	22.6	12.7	284	17.8	169	206	60.9	435	44.9	184	5.31	40.0
MAX	84	19	2410	22	1500	1500	494	1540	523	1200	9.6	247
MIN	4.5	5.7	8.1	16	14	30	25	27	9.1	6.2	.65	.46
AC-FT	1390	753	17470	1090	9370	12640	3620	26760	2670	11330	327	2380

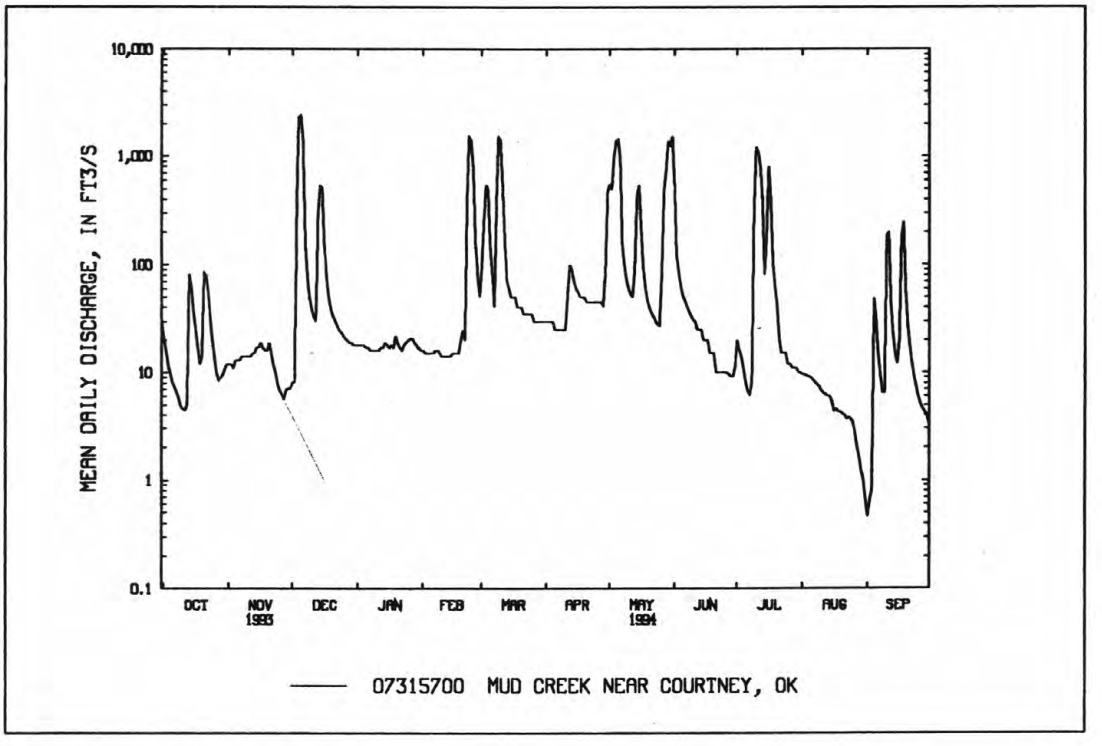
e Estimated

07315700 MUD CREEK NEAR COURTNEY, OK

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	106	106	164	94.2	156	277	297	561	361	45.9	23.7	122
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1961-94	
ANNUAL TOTAL	179551.88		45279.77			
ANNUAL MEAN	492		124		193	
HIGHEST ANNUAL MEAN					614	1990
LOWEST ANNUAL MEAN					19.1	1971
HIGHEST DAILY MEAN	29600	May 10	2410	Dec 5	37800	May 3 1990
LOWEST DAILY MEAN	.24	Aug 30	.46	Sep 1	.00	many years
ANNUAL SEVEN-DAY MINIMUM	.30	Aug 27	.91	Aug 28	.00	Jul 28 1961
INSTANTANEOUS PEAK FLOW			3310	Dec 4	49600	May 3 1990
INSTANTANEOUS PEAK STAGE			24.60	Dec 4	33.14	May 29 1987
ANNUAL RUNOFF (AC-FT)	356100		89810		139700	
10 PERCENT EXCEEDS	1210		349		270	
50 PERCENT EXCEEDS	53		20		7.4	
90 PERCENT EXCEEDS	1.8		6.3		.00	



07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43'40", long 97°09'35", in SW 1/4 scc.36, T.9 S., R.1 E., Love County, OK, Hydrologic Unit 11130201, on downstream right bank at end of bridge on Interstate 35, 0.2 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi downstream from Fish Creek, 4.5 mi southwest of Thackerville, OK, 7.0 mi north of Gainesville, and at mile 791.5.

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

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

REVISED RECORDS.--WSP 1211: Drainage area.

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

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

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

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

No peaks greater than base discharge.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	599	587	555	708	676	7520	1140	5130	7630	529	783	1210
2	591	578	561	692	659	10000	1070	5180	4980	505	743	1120
3	554	574	2220	675	663	7340	1020	9720	4020	527	698	827
4	510	555	4380	677	658	5280	974	11600	3560	532	661	688
5	489	534	5460	671	660	3590	942	10000	3270	589	646	604
6	467	517	5010	682	655	2400	901	e9300	2920	548	614	609
7	452	518	3940	665	661	1990	876	e6900	2580	501	608	626
8	447	541	2010	645	660	1780	850	6200	2390	721	656	619
9	499	538	1430	650	785	1700	845	4400	1940	2060	601	771
10	433	529	1230	663	796	2330	843	3780	1510	7450	570	775
11	427	521	1100	717	722	12300	855	3350	1520	10800	555	701
12	447	536	1010	700	719	12700	838	3000	1530	9650	551	1010
13	1040	541	950	683	679	8210	818	2840	1310	9000	541	1120
14	1050	550	1190	668	680	5440	813	2650	1300	7770	538	882
15	730	568	1530	653	679	4420	797	2910	1490	5250	523	714
16	589	596	1630	650	655	3860	881	3530	2020	4290	515	3670
17	538	690	1580	697	636	3560	1700	5260	1750	3520	514	4670
18	889	693	1230	733	629	3220	1700	4850	1330	2900	612	1870
19	2020	671	1120	715	646	2790	1770	3830	1060	2280	804	1680
20	3410	652	1060	705	722	2490	1690	2940	944	1960	1440	1090
21	1700	643	990	702	724	2270	1400	2330	867	1780	1450	710
22	1210	665	934	707	2640	2080	1190	2000	811	1970	1200	574
23	993	644	899	727	3940	1990	1040	1900	773	1460	1140	525
24	927	617	851	740	7940	1880	942	1800	722	1230	953	e509
25	868	594	824	760	8440	1750	896	1850	671	1120	865	e485
26	809	587	787	760	7060	1690	1050	5550	623	1030	946	e467
27	736	575	772	743	4230	1660	2130	5840	584	969	904	e460
28	677	565	747	727	3220	1530	1410	9800	529	905	855	e459
29	642	560	729	714	---	1370	2080	20200	519	874	747	e450
30	605	557	715	718	---	1240	5190	18000	551	860	673	e440
31	583	---	709	700	---	1180	---	11400	---	829	704	---
TOTAL	25931	17496	48153	21647	51834	121560	38651	188040	55704	84409	23610	30335
MEAN	836	583	1553	698	1851	3921	1288	6066	1857	2723	762	1011
MAX	3410	693	5460	760	8440	12700	5190	20200	7630	10800	1450	4670
MIN	427	517	555	645	629	1180	797	1800	519	501	514	440
AC-FT	51430	34700	95510	42940	102800	241100	76660	373000	110500	167400	46830	60170

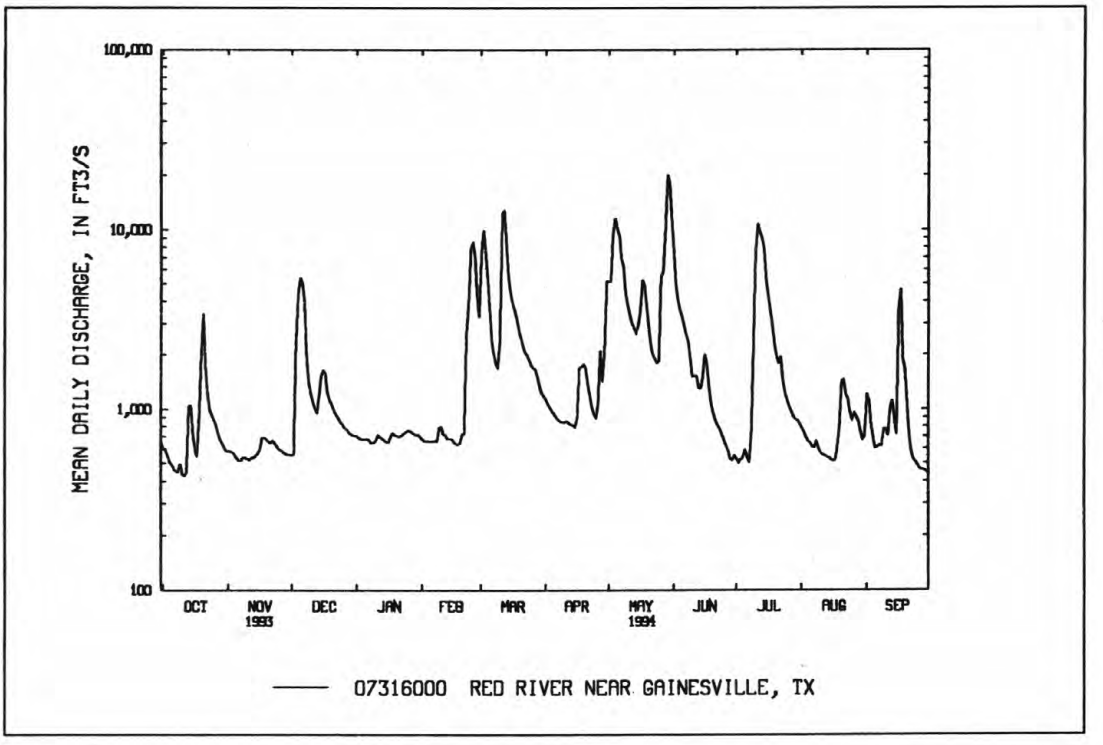
e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3925	1941	1589	1191	1690	2621	3403	8253	8069	2139	1281	2314
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1937-94	
ANNUAL TOTAL	2054637		707370			
ANNUAL MEAN	5629		1938		3205	
HIGHEST ANNUAL MEAN					11890	1987
LOWEST ANNUAL MEAN					651	1953
HIGHEST DAILY MEAN	114000	May 11	20200	May 29	232000	May 31 1987
LOWEST DAILY MEAN	427	Oct 11	427	Oct 11	48	Jan 18 1940
ANNUAL SEVEN-DAY MINIMUM	453	Oct 6	453	Oct 6	48	Jan 18 1940
INSTANTANEOUS PEAK FLOW			22400	May 29	265000	May 31 1987
INSTANTANEOUS PEAK STAGE			17.76	May 29	40.08	May 31 1987
INSTANTANEOUS LOW FLOW			427	Oct 11	48	Jan 18 1940
ANNUAL RUNOFF (AC-FT)	4075000		1403000		2322000	
10 PERCENT EXCEEDS	11800		4990		7080	
50 PERCENT EXCEEDS	2440		860		800	
90 PERCENT EXCEEDS	593		540		212	



07316500 WASHITA RIVER NEAR CHEYENNE, OK

LOCATION.--Lat 35°37'35", long 99°40'05", in SE 1/4 sec.5, T.13 N., R.23 W., Roger Mills County, Hydrologic Unit 11130301, on left bank on downstream side of bridge on U.S. Highway 283, 0.5 mi downstream from Sergeant Major Creek, 1.0 mi north of Cheyenne, 5.2 mi upstream from Dead Indian Creek, and at mile 543.9.

DRAINAGE AREA.--794 mi^2.

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

REVISED RECORDS.--WSP 1211: Drainage area.

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

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

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

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.14	1.9	5.5	11	e10	15	15	63	5.3	.00	.00	.00
2	.11	2.6	5.5	13	e11	16	14	65	4.2	.00	.00	.00
3	.12	2.6	5.6	13	e12	15	14	58	8.7	.00	.00	.00
4	.11	3.2	7.3	13	13	15	12	52	14	.00	.00	.00
5	.00	3.5	8.3	13	13	15	12	46	5.7	.17	.00	.00
6	.00	3.8	8.4	13	14	14	14	42	4.5	.46	.00	.00
7	.00	4.1	9.2	11	13	14	15	38	3.4	.00	.00	.00
8	.06	4.9	8.1	e11	e13	27	13	35	2.5	.00	.00	.00
9	.08	4.7	8.8	e12	e11	32	12	32	2.3	.00	.00	.00
10	.18	4.4	9.0	13	e10	32	12	31	2.6	.00	.00	.00
11	.29	4.1	8.8	13	e12	34	32	29	3.6	.00	.00	.00
12	.38	4.4	9.7	13	14	33	33	28	3.9	.02	.00	.00
13	.44	4.4	9.7	13	14	33	27	25	3.5	.00	.00	.00
14	.50	4.5	9.4	14	14	33	20	28	2.1	.00	.00	.00
15	.54	4.1	9.4	14	14	29	19	31	1.9	.00	.00	.00
16	.49	4.5	9.9	13	13	27	16	26	1.7	.00	.00	.00
17	.54	6.0	12	e13	13	26	15	21	1.4	.00	.00	.00
18	.51	6.6	13	e11	12	24	15	17	1.1	.00	.00	.00
19	.44	6.6	14	e9.0	13	22	14	15	.74	.00	.00	.00
20	.62	6.0	14	e11	12	21	13	14	.49	.00	.00	.00
21	.59	6.6	e14	12	13	19	12	14	.38	.00	.00	.00
22	.60	6.1	14	12	15	18	16	13	.24	.00	.00	.00
23	.59	6.9	e13	13	16	18	20	13	.14	.00	.00	.00
24	.58	6.6	e13	14	14	17	20	13	.05	.00	.00	.00
25	.63	6.1	14	12	14	16	15	10	.00	.00	.00	.00
26	.59	5.3	14	12	13	16	12	11	.00	.00	.00	.00
27	.59	5.3	13	13	13	16	13	10	.00	.00	.00	.00
28	.81	5.0	12	12	14	15	23	9.3	.00	.00	.00	.00
29	.83	5.2	e12	12	---	15	42	8.8	.04	.00	.00	.00
30	1.1	5.2	e12	12	---	14	72	8.1	.01	.00	.00	.00
31	1.8	---	12	e13	---	14	---	6.8	---	.00	.00	---
TOTAL	14.26	145.2	328.6	384.0	363	655	582	813.0	74.49	0.65	0.00	0.00
MEAN	.46	4.84	10.6	12.4	13.0	21.1	19.4	26.2	2.48	.021	.000	.000
MAX	1.8	6.9	14	14	16	34	72	65	14	.46	.00	.00
MIN	.00	1.9	5.5	9.0	10	14	12	6.8	.00	.00	.00	.00
AC-FT	28	288	652	762	720	1300	1150	1610	148	1.3	.00	.00

e Estimated

07316500 WASHITA RIVER NEAR CHEYENNE, OK--Continued

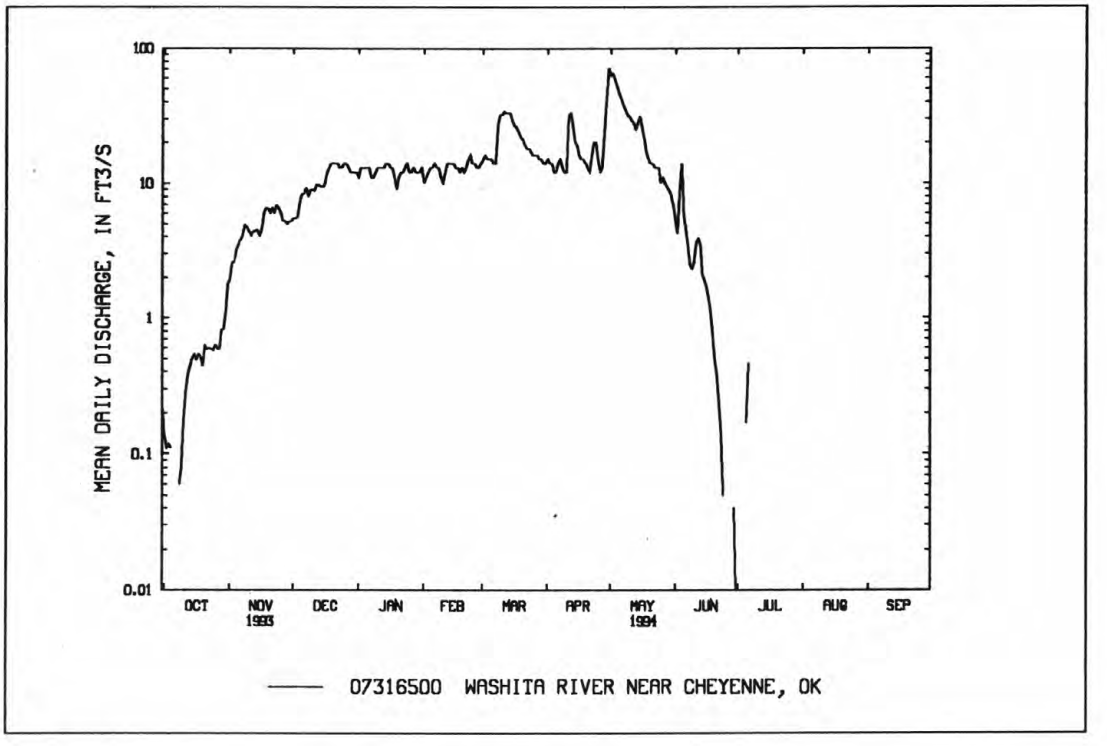
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7.20	7.67	9.33	12.4	16.5	22.0	27.2	45.8	35.5	6.76	2.73	3.95
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1962-94	
ANNUAL TOTAL	7998.85		3360.20			
ANNUAL MEAN	21.9		9.21		[a]16.4	
HIGHEST ANNUAL MEAN					57.1	1982
LOWEST ANNUAL MEAN					2.60	1972
HIGHEST DAILY MEAN	198	May 18	72	Apr 30	1560	Apr 23 1990
LOWEST DAILY MEAN	.00	Aug 20	.00	Oct 5	.00	most years
ANNUAL SEVEN-DAY MINIMUM	.02	Aug 24	.00	at times	.00	Oct 1 1961
INSTANTANEOUS PEAK FLOW			83	Apr 29	[b]7250	Apr 22 1990
INSTANTANEOUS PEAK STAGE			7.61	Apr 29	16.60	Apr 22 1990
ANNUAL RUNOFF (AC-FT)	15870		6660		11880	
10 PERCENT EXCEEDS	46		20		34	
50 PERCENT EXCEEDS	15		6.6		5.8	
90 PERCENT EXCEEDS	.38		.00		.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 except for estimated winter periods, which are poor. Flow regulated since 1961 by numerous flood-retarding structures.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.4	8.4	17	24	e18	33	35	107	23	7.3	.50	.56
2	6.4	9.0	16	24	e20	36	35	91	20	4.7	.49	.38
3	4.9	8.8	16	24	e25	36	33	110	18	4.1	.48	.28
4	5.4	9.3	17	23	31	35	30	93	17	3.5	.46	.25
5	5.5	9.0	17	23	32	33	30	81	25	3.1	.41	.14
6	5.5	9.2	17	23	31	32	29	72	25	2.8	.38	.12
7	5.4	9.7	17	23	30	32	29	66	20	2.8	.33	.09
8	5.7	10	17	e20	28	43	29	62	17	2.6	.26	.29
9	5.3	11	17	e19	e20	59	29	59	16	2.4	.24	.36
10	5.2	11	18	24	e18	63	28	57	20	2.4	.30	.20
11	6.0	12	17	23	e21	66	36	56	43	2.2	.35	.13
12	5.9	12	18	23	34	66	60	54	55	2.5	.31	.13
13	5.9	12	18	23	32	63	55	53	29	2.7	.28	.12
14	5.9	12	19	24	31	60	49	66	22	2.2	.24	.11
15	5.9	12	18	24	31	57	42	59	18	1.9	.31	.12
16	6.1	12	18	e23	30	53	36	54	16	3.3	.22	.11
17	5.8	13	19	e21	30	51	33	49	15	5.4	.19	.10
18	5.8	14	18	e18	32	51	29	44	13	2.5	1.1	.09
19	5.9	13	19	e16	34	48	30	41	12	1.6	.85	.08
20	5.8	13	20	e20	30	45	33	37	11	1.2	.26	.08
21	5.9	14	21	28	29	42	32	35	11	1.2	.24	.07
22	6.2	14	22	28	30	41	31	32	9.5	1.3	.20	.08
23	6.4	14	e19	27	33	41	30	30	8.3	1.4	.19	.08
24	6.8	14	e21	28	34	38	28	29	7.1	1.1	.22	.07
25	7.1	e11	24	28	35	39	27	35	6.6	1.1	.24	.08
26	7.1	e10	24	30	32	39	25	36	5.8	1.7	.23	.08
27	6.5	e12	24	29	31	41	44	41	5.1	1.3	.19	.08
28	6.7	e14	24	28	31	41	60	32	4.8	1.1	.18	.09
29	7.0	16	e20	28	---	40	57	30	4.4	.96	.13	.07
30	6.8	16	e21	28	---	38	115	28	6.8	.71	.11	.08
31	7.3	---	25	e22	---	37	---	25	---	.66	1.1	---
TOTAL	189.5	355.4	598	746	813	1399	1159	1664	504.4	73.73	10.99	4.52
MEAN	6.11	11.8	19.3	24.1	29.0	45.1	38.6	53.7	16.8	2.38	.35	.15
MAX	7.4	16	25	30	35	66	115	110	55	7.3	1.1	.56
MIN	4.9	8.4	16	16	18	32	25	25	4.4	.66	.11	.07
AC-FT	376	705	1190	1480	1610	2770	2300	3300	1000	146	22	9.0

e Estimated

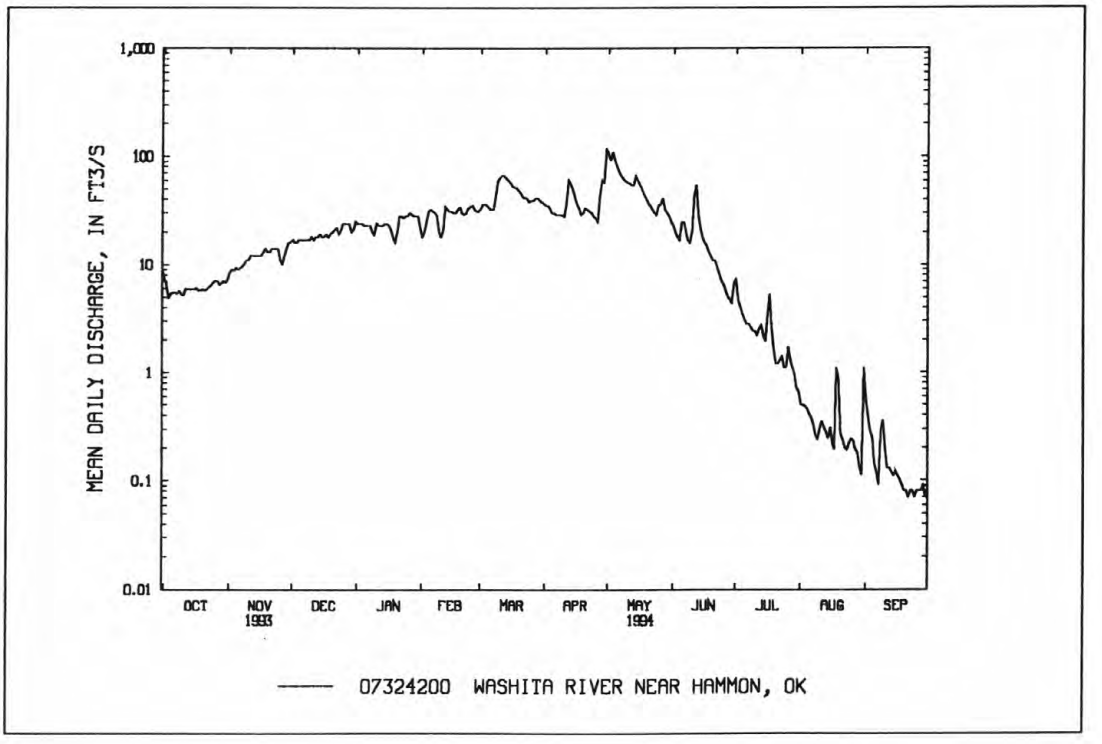
07324200 WASHITA RIVER NEAR HAMMON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	25.1	24.7	19.3	24.7	32.2	48.1	60.2	137	102	28.0	13.9	10.9
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1970-94	
ANNUAL TOTAL	23937.1		7517.54			
ANNUAL MEAN	65.6		20.6		43.8	
HIGHEST ANNUAL MEAN					212	1987
LOWEST ANNUAL MEAN					.49	1972
HIGHEST DAILY MEAN	550	May 9	115	Apr 30	4340	May 17 1982
LOWEST DAILY MEAN	4.9	Oct 3	.07	Sep 21,24,29	.00	at times
ANNUAL SEVEN-DAY MINIMUM	5.4	Oct 3	.08	Sep 19	.00	Jul 13 1970
INSTANTANEOUS PEAK FLOW			140	Apr 30	[a]6000	May 17 1982
INSTANTANEOUS PEAK STAGE			7.59	Apr 30	23.44	May 17 1982
ANNUAL RUNOFF (AC-FT)	47480		14910		31740	
10 PERCENT EXCEEDS	137		44		90	
50 PERCENT EXCEEDS	48		18		15	
90 PERCENT EXCEEDS	8.0		.24		.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.

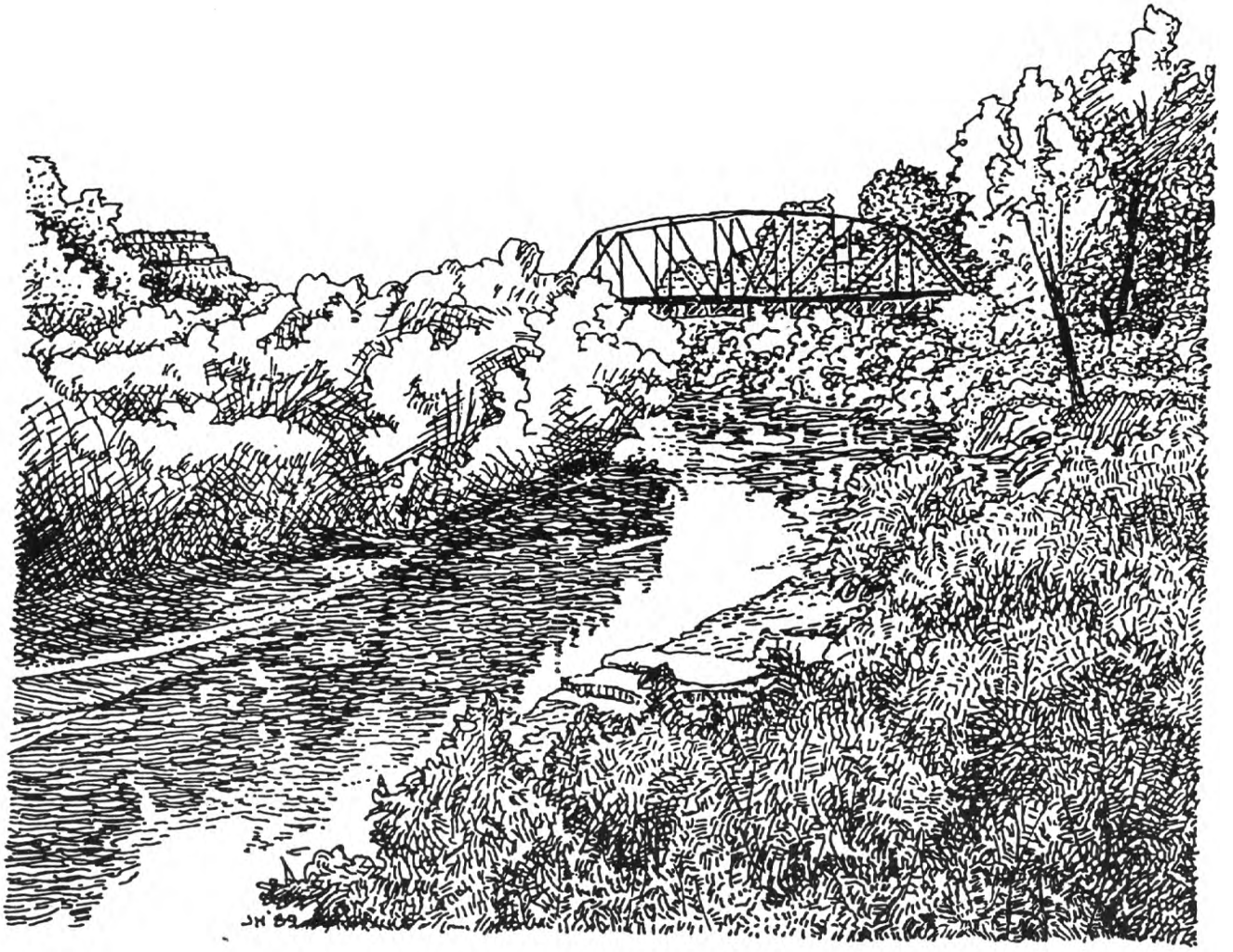
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 217,300 acre-ft, June 18, 1989, elevation, 1,647.35 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 169,200 acre-ft, May 30 -31, elevation, 1,640.69 ft; minimum, 153,800 acre-ft, Sept. 24, elevation, 1,638.25 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30	1639.63	162,400	-	-
Oct. 31	1639.28	160,200	-2,200	167
Nov. 30	1639.11	159,100	-1,100	136
Dec. 31	1639.10	159,100	0	189
CAL YR 93	-	-	-10,800	2,153
Jan. 31	1639.04	158,700	-400	187
Feb. 28	1639.27	160,100	+1,400	168
Mar. 31	1640.00	164,700	+4,600	195
Apr. 30	1640.24	166,300	+1,600	183
May 31	1640.61	168,700	+2,400	186
June 30	1640.47	167,800	-900	223
July 31	1639.89	164,000	-3,800	314
Aug. 31	1638.64	156,200	-7,800	285
Sept. 30	1638.31	154,200	-2,000	188
WTR YR 94	-	-	-8,200	2,421

* Elevation at 0800 on the following day.



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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	5.9	5.9	6.4	5.4	4.8	5.0	8.0	3.9	5.3	4.2	3.9
2	5.7	5.6	6.1	6.5	5.7	4.9	4.8	7.3	4.0	4.7	4.4	3.8
3	5.4	5.0	6.1	6.5	5.7	4.9	5.9	6.7	6.8	4.5	4.4	3.8
4	5.6	5.6	6.1	6.4	5.3	5.0	5.4	6.5	9.4	4.6	4.7	4.0
5	5.4	5.7	6.1	6.1	5.3	4.9	4.5	6.1	4.3	4.7	4.8	4.2
6	5.1	5.9	5.9	5.9	5.3	4.6	4.5	5.9	4.3	4.4	4.5	4.1
7	5.1	6.6	5.6	5.9	5.3	4.5	4.6	5.7	10	4.6	4.1	4.0
8	5.4	6.3	5.9	5.9	5.1	6.2	4.5	5.7	6.9	5.0	4.2	4.1
9	5.4	6.3	5.7	5.9	4.7	6.1	4.7	5.6	5.5	4.9	4.0	3.8
10	5.3	6.3	5.7	5.9	4.9	5.4	4.8	5.6	7.8	4.8	4.2	3.9
11	5.4	6.3	5.7	6.0	4.9	5.3	9.7	5.7	33	4.3	3.9	3.8
12	5.6	6.3	5.8	6.1	4.9	5.2	7.7	5.7	9.5	4.0	5.1	3.7
13	6.3	6.3	6.3	6.1	4.9	5.1	5.6	5.6	7.5	3.8	4.8	4.0
14	5.7	6.3	6.2	6.1	4.9	5.0	4.9	5.9	6.7	5.4	5.0	4.1
15	5.7	6.3	6.3	5.8	4.9	4.9	5.3	6.0	6.8	4.3	5.0	4.5
16	5.7	6.7	6.3	5.7	4.9	4.8	4.5	6.1	6.9	4.3	4.1	4.0
17	5.5	6.9	6.3	5.5	4.9	4.9	4.3	5.6	6.0	4.4	4.2	4.5
18	5.4	6.5	6.3	5.4	4.9	4.9	4.4	5.6	5.8	3.9	4.7	4.0
19	5.3	5.4	6.3	5.6	4.9	4.9	4.5	5.2	5.8	4.1	4.8	4.3
20	5.6	5.3	6.2	5.9	4.9	4.6	4.7	5.0	6.1	4.5	4.3	3.9
21	5.5	5.3	5.9	5.7	4.8	4.7	4.8	4.8	5.7	4.0	3.4	4.5
22	5.5	5.2	5.9	5.7	4.8	5.0	4.7	4.8	5.3	2.9	3.3	4.5
23	5.5	5.9	5.9	5.7	4.6	5.0	5.3	4.5	4.8	3.7	3.6	4.3
24	5.3	6.1	5.9	6.5	4.6	4.6	5.0	4.2	4.1	4.1	3.9	4.0
25	5.1	6.1	5.9	6.4	4.6	4.2	4.9	4.4	4.0	4.2	4.2	4.2
26	4.7	6.1	5.9	6.1	4.6	4.4	4.8	4.6	4.5	4.4	3.6	4.2
27	4.9	6.2	5.9	5.9	4.6	4.6	5.0	4.1	4.9	3.3	4.1	4.1
28	5.3	6.3	5.9	5.7	4.6	4.6	5.5	4.2	4.8	3.3	4.4	4.0
29	5.3	5.7	5.9	6.1	---	4.7	8.2	4.3	5.6	3.6	4.7	4.0
30	5.2	5.2	5.9	5.2	---	4.8	17	4.4	24	4.1	4.6	4.5
31	5.3	---	6.0	5.3	---	4.9	---	4.0	---	4.1	4.1	---
TOTAL	167.9	179.6	185.8	183.9	138.9	152.4	169.5	167.8	224.7	132.2	133.3	122.7
MEAN	5.42	5.99	5.99	5.93	4.96	4.92	5.65	5.41	7.49	4.26	4.30	4.09
MAX	6.3	6.9	6.3	6.5	5.7	6.2	17	8.0	33	5.4	5.1	4.5
MIN	4.7	5.0	5.6	5.2	4.6	4.2	4.3	4.0	3.9	2.9	3.3	3.7
AC-FT	333	356	369	365	276	302	336	333	446	262	264	243

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1994, BY WATER YEAR (WY)

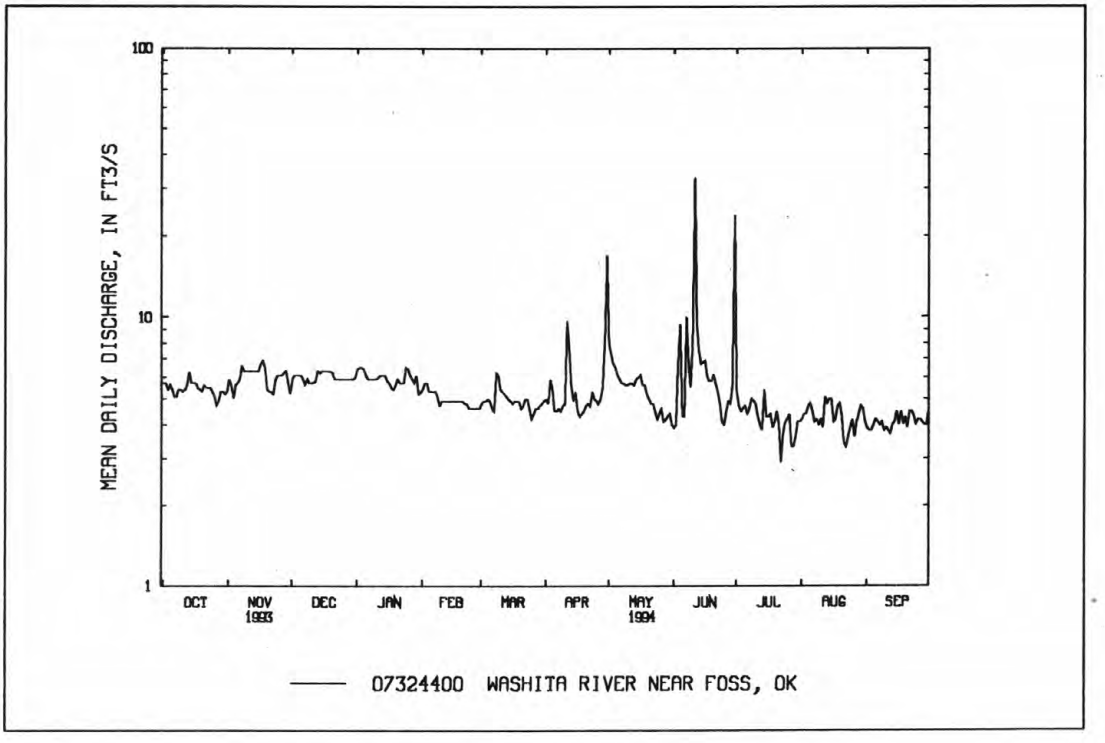
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	26.0	16.3	8.88	17.7	18.9	25.0	32.9	71.9	120	46.3	26.0	9.72
MAX	309	218	75.3	215	128	236	316	447	763	343	261	56.8
(WY)	1978	1987	1987	1987	1993	1987	1987	1982	1982	1987	1987	1986
MIN	.15	.28	.36	.56	.60	.57	1.62	1.08	1.28	2.27	3.12	.46
(WY)	1968	1968	1968	1968	1968	1968	1967	1967	1966	1967	1973	1966

07324400 WASHITA RIVER NEAR FOSS, OK--Continued

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1962-94	
ANNUAL TOTAL	38172.6		1958.7			
ANNUAL MEAN	105		5.37		35.0	
HIGHEST ANNUAL MEAN					233	1987
LOWEST ANNUAL MEAN					3.87	1963
HIGHEST DAILY MEAN	598	May 24	33	Jun 11	1300	Jun 11 1983
LOWEST DAILY MEAN	4.7	Oct 26	2.9	Jul 22	[a].06	Oct 2 1967
ANNUAL SEVEN-DAY MINIMUM	5.1	Oct 24	3.7	Jul 22	.08	Sep 28 1967
INSTANTANEOUS PEAK FLOW			108	Jun 30	[b]3010	Aug 26 1969
INSTANTANEOUS PEAK STAGE			9.53	Jun 30	21.56	Oct 3 1986
ANNUAL RUNOFF (AC-FT)	75720		3890		25330	
10 PERCENT EXCEEDS	319		6.3		56	
50 PERCENT EXCEEDS	16		5.1		6.7	
90 PERCENT EXCEEDS	5.6		4.1		1.6	

[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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	22	28	34	39	41	30	107	35	36	8.4	12
2	20	24	31	35	40	43	32	79	31	21	8.1	8.3
3	20	24	31	34	43	42	29	86	31	19	8.1	7.4
4	21	24	31	34	41	39	31	78	28	17	8.1	6.6
5	21	24	31	34	39	37	31	63	32	16	8.2	14
6	21	24	30	33	38	36	32	54	24	15	8.1	12
7	20	25	29	33	37	35	31	47	59	15	7.9	7.9
8	22	27	29	32	36	50	29	42	51	14	7.6	7.3
9	23	26	29	32	35	78	30	40	30	15	7.3	7.0
10	23	26	30	35	e31	82	32	39	47	15	7.3	7.2
11	23	26	29	35	e33	74	64	37	354	15	7.2	6.7
12	23	29	31	34	41	73	77	37	585	14	6.7	6.7
13	23	27	36	34	36	66	61	39	203	15	5.9	6.4
14	22	29	37	34	34	56	48	49	129	14	5.9	6.2
15	22	28	34	36	35	51	41	105	85	58	5.8	12
16	22	29	33	35	36	47	36	53	64	19	6.8	8.1
17	22	32	32	34	35	44	33	44	55	14	6.8	7.1
18	22	31	32	e30	35	42	31	40	48	12	6.6	6.6
19	22	29	33	e32	35	41	29	38	43	11	7.2	6.4
20	22	27	32	e34	34	39	28	36	41	10	8.1	6.2
21	21	26	32	36	34	38	27	32	e36	10	7.7	6.2
22	22	26	32	35	38	37	26	30	e33	11	7.5	6.0
23	22	26	32	36	42	35	26	28	e30	9.8	6.2	6.1
24	22	27	32	37	42	36	25	28	e27	9.3	5.4	6.3
25	22	26	32	37	39	34	25	29	e25	9.1	5.2	6.4
26	21	28	33	38	37	34	24	96	e23	11	5.5	6.5
27	20	30	33	39	36	35	25	93	e22	11	5.2	6.5
28	21	29	32	40	36	34	40	56	20	9.9	4.8	6.3
29	21	28	31	36	---	33	78	49	19	8.9	4.9	6.1
30	20	28	32	36	---	31	134	58	70	8.6	5.2	5.8
31	21	---	35	36	---	31	---	44	---	8.5	33	---
TOTAL	668	807	984	1080	1037	1394	1185	1656	2280	472.1	236.7	224.3
MEAN	21.5	26.9	31.7	34.8	37.0	45.0	39.5	53.4	76.0	15.2	7.64	7.48
MAX	23	32	37	40	43	82	134	107	585	58	33	14
MIN	20	22	28	30	31	31	24	28	19	8.5	4.8	5.8
AC-FT	1320	1600	1950	2140	2060	2760	2350	3280	4520	936	469	445

e Estimated

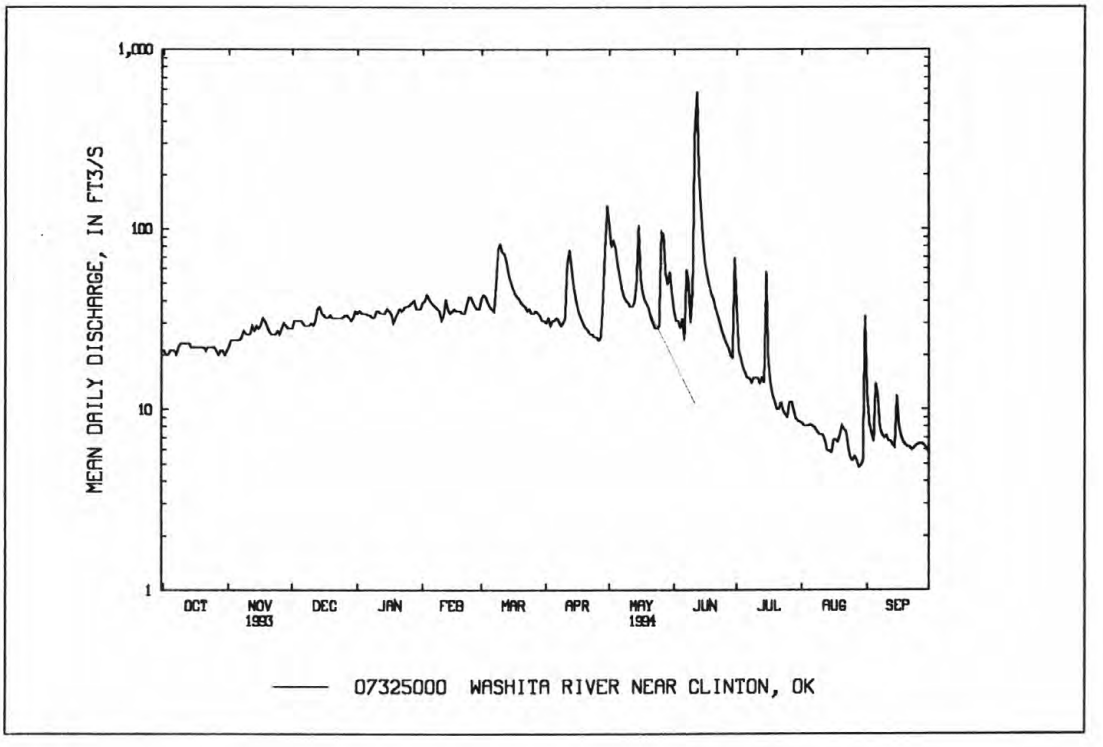
07325000 WASHITA RIVER NEAR CLINTON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	83.4	59.1	37.1	49.3	56.7	73.9	80.3	190	222	98.1	63.1	71.6
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1962-94	
ANNUAL TOTAL	67091		12024.1			
ANNUAL MEAN	184		32.9		[a]90.5	
HIGHEST ANNUAL MEAN					504	1987
LOWEST ANNUAL MEAN					13.8	1967
HIGHEST DAILY MEAN	2590	May 9	585	Jun 12	7710	Oct 3 1986
LOWEST DAILY MEAN	20	Oct 2	4.8	Aug 28	[b].00	Jul 26 1964
ANNUAL SEVEN-DAY MINIMUM	21	Oct 1	5.2	Aug 24	.04	Jul 23 1964
INSTANTANEOUS PEAK FLOW			924	Jun 12	[c]10600	Oct 3 1986
INSTANTANEOUS PEAK STAGE			12.90	Jun 12	[d]25.93	Oct 3 1986
ANNUAL RUNOFF (AC-FT)	133100		23850		65530	
10 PERCENT EXCEEDS	496		49		207	
50 PERCENT EXCEEDS	72		30		27	
90 PERCENT EXCEEDS	23		7.2		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 22,800 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.--No estimated daily discharges. Records fair. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	115	113	148	142	141	137	126	1740	278	100	48	41
2	112	113	149	145	139	140	123	1080	212	89	47	47
3	111	118	158	145	138	147	121	1760	194	115	49	66
4	111	118	165	143	141	146	123	1290	194	91	49	77
5	113	122	167	145	147	141	120	777	266	84	49	58
6	115	125	163	141	148	137	120	566	342	73	51	53
7	116	125	156	142	145	132	122	446	205	67	49	52
8	121	122	154	141	143	194	120	380	162	70	47	59
9	141	125	154	144	140	354	121	336	205	73	46	65
10	160	129	152	142	114	574	123	324	201	73	46	56
11	136	133	152	142	131	549	756	304	733	71	46	52
12	124	139	156	143	142	411	1260	287	1100	66	45	51
13	127	145	157	144	143	322	775	278	1160	68	44	50
14	130	161	160	143	145	276	404	263	765	70	43	48
15	129	165	162	143	143	247	276	248	401	70	44	49
16	126	161	160	143	140	221	223	236	308	96	44	47
17	125	156	152	140	138	201	192	269	247	83	46	47
18	128	154	149	141	142	184	170	245	204	120	44	49
19	126	153	148	132	141	176	155	217	178	86	42	53
20	125	151	145	135	138	167	145	204	154	71	39	51
21	123	146	145	134	141	158	139	195	143	62	43	47
22	125	145	144	148	160	150	133	187	130	59	45	49
23	127	142	144	149	169	144	129	180	123	58	48	52
24	124	140	143	150	170	140	130	175	116	57	48	51
25	125	140	143	148	149	137	131	189	107	55	46	50
26	123	138	145	150	142	134	156	249	93	57	44	49
27	117	137	144	144	135	137	189	222	87	55	37	49
28	114	137	142	143	133	140	577	245	85	56	30	51
29	111	140	142	144	---	135	363	337	82	55	29	45
30	112	145	142	143	---	131	1560	284	93	53	31	44
31	111	---	143	144	---	129	---	257	---	51	36	---
TOTAL	3803	4138	4684	4433	3998	6391	9082	13770	8568	2254	1355	1558
MEAN	123	138	151	143	143	206	303	444	286	72.7	43.7	51.9
MAX	160	165	167	150	170	574	1560	1760	1160	120	51	77
MIN	111	113	142	132	114	129	120	175	82	51	29	41
AC-FT	7540	8210	9290	8790	7930	12680	18010	27310	16990	4470	2690	3090

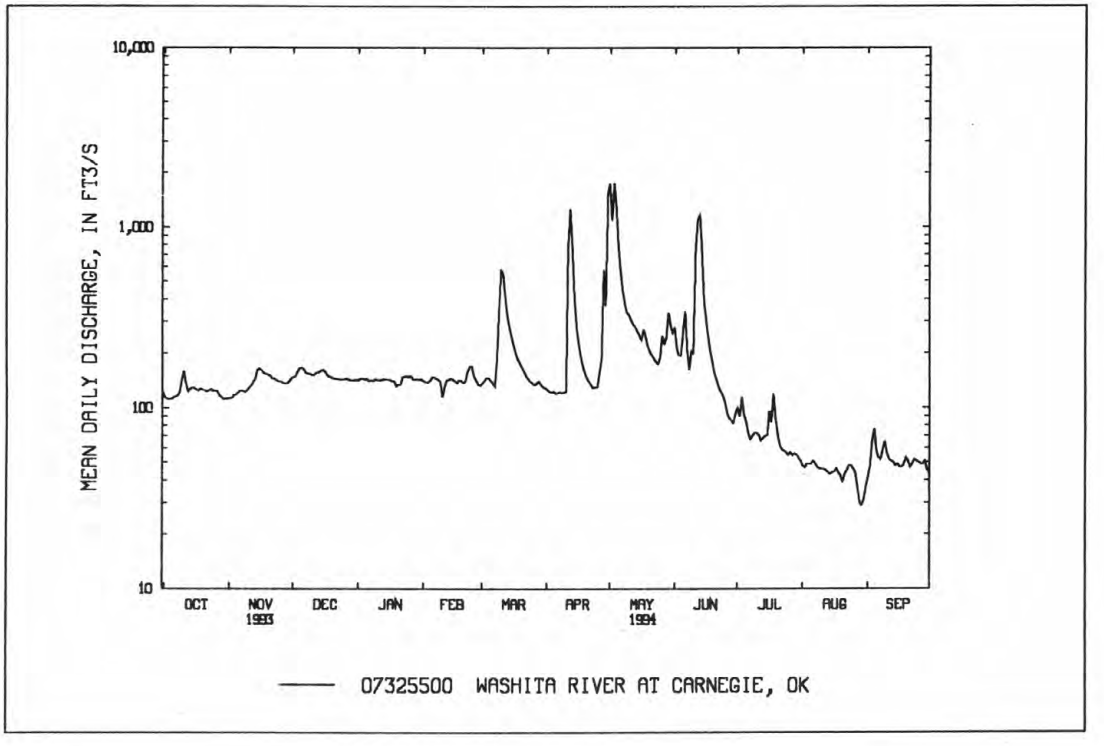
07325500 WASHITA RIVER AT CARNEGIE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	412	258	187	179	187	304	297	795	718	256	169	301
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1962-94	
ANNUAL TOTAL	335072		64034			
ANNUAL MEAN	918		175		[a]339	
HIGHEST ANNUAL MEAN					1432	1987
LOWEST ANNUAL MEAN					72.8	1967
HIGHEST DAILY MEAN	24500	May 10	1760	May 3	24500	May 10 1993
LOWEST DAILY MEAN	111	Oct 3	29	Aug 29	[b].00	Jul 20 1964
ANNUAL SEVEN-DAY MINIMUM	113	Oct 27	35	Aug 26	.00	Jul 20 1964
INSTANTANEOUS PEAK FLOW			2180	Apr 30	[c]40600	Oct 20 1983
INSTANTANEOUS PEAK STAGE			13.29	Apr 30	31.70	Oct 20 1983
INSTANTANEOUS LOW FLOW					.00	Jul 20 1964
ANNUAL RUNOFF (AC-FT)	664600		127000		245800	
10 PERCENT EXCEEDS	1640		276		716	
50 PERCENT EXCEEDS	441		140		123	
90 PERCENT EXCEEDS	125		49		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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.1	16	22	24	25	36	24	107	22	e10	7.9	18
2	9.1	17	23	24	25	38	23	134	19	e10	8.2	15
3	8.8	17	27	25	25	32	24	107	18	e9.9	8.7	12
4	9.1	17	28	24	24	29	23	59	19	e9.0	8.7	11
5	9.4	18	25	24	24	27	23	45	20	e9.2	8.9	11
6	9.5	18	23	24	23	25	24	37	17	e9.3	8.3	11
7	9.9	18	22	23	25	25	22	32	16	e9.5	7.9	11
8	37	18	22	23	25	250	21	30	14	e9.5	7.7	10
9	22	20	22	24	25	93	22	31	13	e9.6	8.3	10
10	18	20	22	24	25	85	21	29	15	e9.2	7.5	9.9
11	17	19	21	24	25	69	443	28	72	e9.3	7.0	9.5
12	15	21	23	24	25	53	118	28	52	e9.2	6.7	9.0
13	15	24	34	24	25	46	54	27	31	e8.5	6.5	8.7
14	14	32	32	24	24	39	36	25	23	e8.1	6.3	8.4
15	16	26	27	23	24	36	31	23	19	e11	6.2	8.9
16	16	24	26	23	25	34	29	22	17	15	6.8	9.5
17	17	24	25	23	26	33	30	20	15	12	6.7	9.2
18	16	23	24	22	26	32	31	20	13	e11	7.0	8.9
19	15	22	26	24	27	31	29	19	13	e10	6.7	8.4
20	16	21	26	23	27	30	28	19	13	e10	9.1	8.2
21	15	22	25	23	28	29	27	18	13	e9.9	9.6	8.2
22	15	22	23	23	48	28	25	17	11	e9.8	8.5	9.5
23	14	21	22	23	37	27	25	17	e11	e9.8	8.0	9.5
24	14	21	22	24	32	25	23	16	e10	e9.2	7.8	9.6
25	15	21	23	24	28	25	55	17	e11	e9.1	7.3	9.5
26	14	20	23	26	25	28	46	29	e10	e9.2	6.9	9.3
27	14	20	23	24	24	34	45	23	e10	e9.0	6.4	9.2
28	14	21	23	24	24	29	74	21	e11	e8.8	5.9	8.8
29	14	22	22	22	---	27	177	56	e10	8.8	5.9	8.7
30	14	22	23	22	---	25	485	39	e10	8.3	5.7	8.4
31	15	---	24	23	---	25	---	27	---	8.3	8.0	---
TOTAL	456.9	627	753	731	746	1345	2038	1122	548	299.5	231.1	298.3
MEAN	14.7	20.9	24.3	23.6	26.6	43.4	67.9	36.2	18.3	9.66	7.45	9.94
MAX	37	32	34	26	48	250	485	134	72	15	9.6	18
MIN	8.8	16	21	22	23	25	21	16	10	8.1	5.7	8.2
AC-FT	906	1240	1490	1450	1480	2670	4040	2230	1090	594	458	592

e Estimated

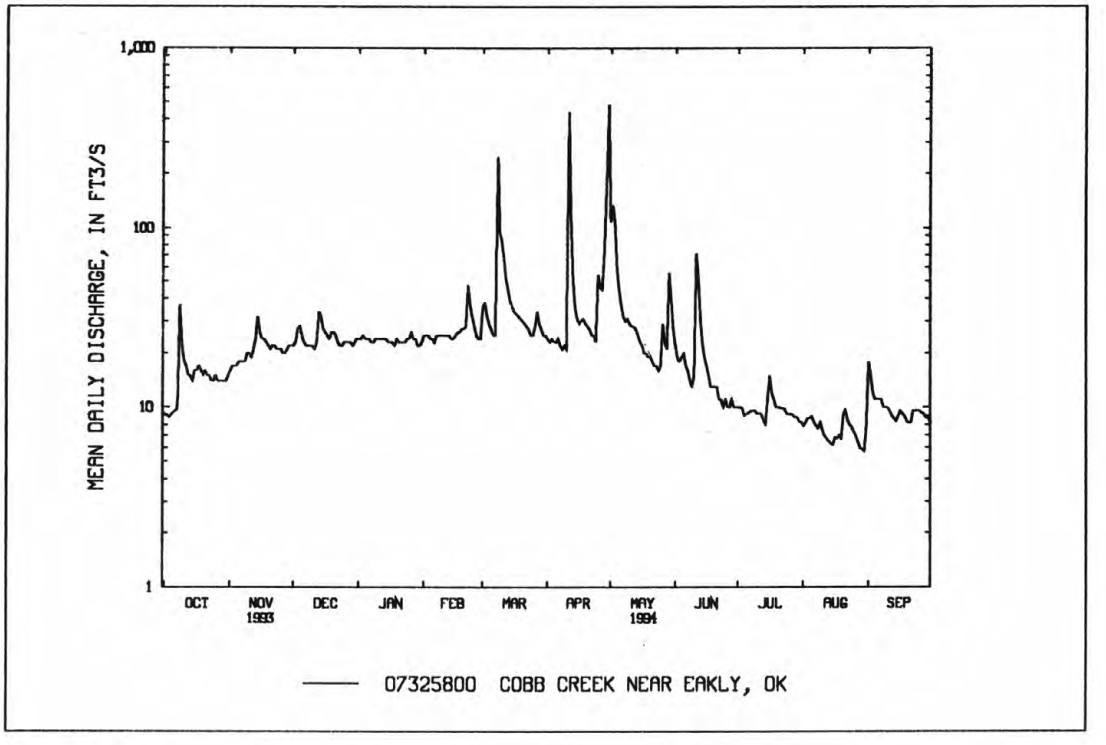
07325800 COBB CREEK NEAR EAKLY, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1969 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	29.7	23.8	21.4	19.2	18.4	27.6	23.6	62.2	42.0	14.5	14.3	20.5
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1969-94	
ANNUAL TOTAL	19108.2		9195.8			
ANNUAL MEAN	52.4		25.2		26.5	
HIGHEST ANNUAL MEAN					91.0	1987
LOWEST ANNUAL MEAN					10.1	1979
HIGHEST DAILY MEAN	3590	May 8	485	Apr 30	3750	Sep 29 1986
LOWEST DAILY MEAN	8.8	Oct 3	5.7	Aug 30	[a].00	Aug 18 1970
ANNUAL SEVEN-DAY MINIMUM	9.2	Sep 30	6.6	Aug 24	.04	May 24 1971
INSTANTANEOUS PEAK FLOW			1220	Apr 30	10900	May 8 1993
INSTANTANEOUS PEAK STAGE			12.92	Apr 30	24.38	Sep 29 1986
ANNUAL RUNOFF (AC-FT)	37900		18240		19190	
10 PERCENT EXCEEDS	69		33		34	
50 PERCENT EXCEEDS	26		22		13	
90 PERCENT EXCEEDS	12		8.7		4.4	

[a]No flow Aug. 18-19, 1970, and May 26-30, 1971.



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.

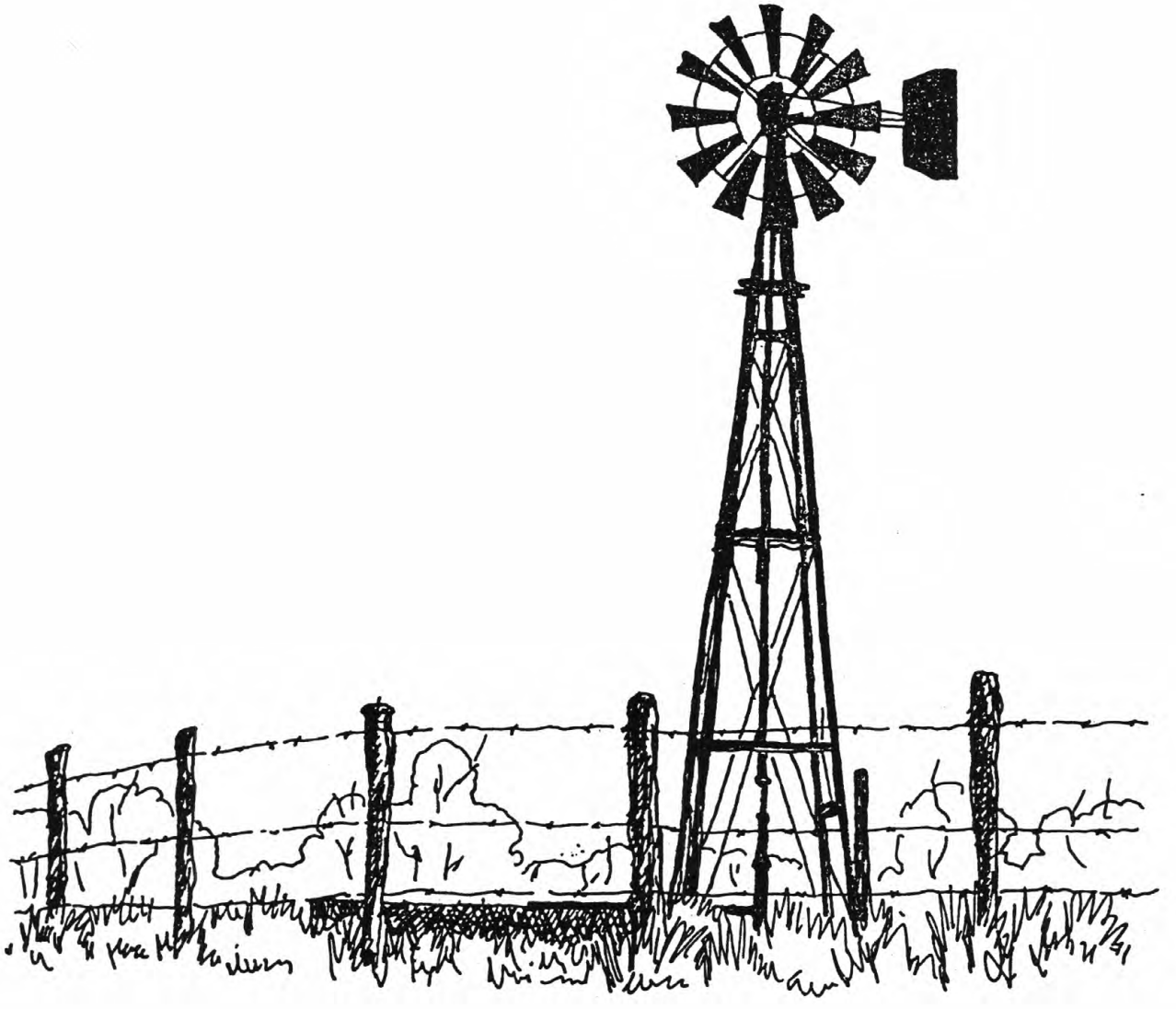
EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 122,700 acre-ft, May 17, 1993, elevation, 1,351.07 ft; minimum since conservation pool was first filled, 54,650 acre-ft, Oct. 19, 1972, elevation 1,335.06 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 86,060 acre-ft, May 3, elevation, 1,343.44 ft; minimum, 73,990 acre-ft, Sept. 30, elevation 1,340.49 ft.

MONTHEND ELEVATION AND CONTENTS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

Date	Elevation (feet)*	Contents (acre-feet)	Change in contents (acre-feet)	Diversions (acre-feet)
Sept. 30	1,341.88	79,530	-	-
Oct. 31	1,341.84	79,360	-170	783
Nov. 30	1,342.06	80,260	+900	670
Dec. 31	1,342.01	80,050	-210	854
CAL YR 93	-	-	-330	7,868
Jan. 31	1,342.11	80,470	+420	749
Feb. 28	1,342.09	80,380	-90	612
Mar. 31	1,342.04	80,180	-200	614
Apr. 30	1,343.12	84,680	+4,500	535
May 31	1,342.35	81,460	-3,220	779
June 30	1,342.23	80,970	-490	956
July 31	1,341.51	78,040	-2,930	1,223
Aug. 31	1,340.99	75,940	-2,100	1,146
Sept. 30	1,340.49	73,990	-1,950	1,084
WTR YR 94	-	-	-5,540	10,005

* Elevation at 2400



07326000 COBB CREEK NEAR FORT COBB, OK

LOCATION.--(REVISED) 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.--307 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. WDR OK-94-2: 1993 (M) 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.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. Oct. 16, 1969, to Sept. 30, 1982, gage at same site and datum 5.00 ft higher.

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.

REVISIONS.--Maximum discharge for water year 1993 has been revised to 1,280 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.3	5.1	3.8	3.9	41	41	e90	135	30	4.4	2.7	2.5
2	4.3	5.5	3.8	3.8	41	54	e90	238	62	4.4	2.9	2.5
3	4.3	5.0	3.8	3.8	41	71	e90	393	62	4.4	2.9	2.5
4	4.3	5.2	3.7	3.7	41	71	e90	561	62	4.4	2.8	2.5
5	4.0	5.6	3.6	3.5	41	70	e90	666	37	4.4	2.8	2.5
6	4.0	5.6	48	3.5	41	70	e90	623	4.1	4.0	2.5	2.5
7	4.1	5.6	98	3.5	41	70	90	576	3.8	4.3	2.2	2.3
8	4.4	5.6	97	3.5	41	70	48	502	3.8	4.3	2.1	2.3
9	3.9	5.5	98	3.5	41	70	6.4	389	3.8	4.3	2.2	2.3
10	3.9	5.3	73	3.5	41	71	6.2	e190	3.8	4.6	2.2	2.2
11	3.9	5.3	49	20	41	100	e6.2	e8.0	3.8	4.5	2.2	2.2
12	3.9	5.3	28	40	41	136	6.2	e7.5	e3.8	4.3	2.2	2.2
13	4.2	5.3	4.7	40	41	136	165	59	116	4.0	2.2	2.2
14	4.2	5.3	22	40	41	136	311	113	228	3.8	2.3	2.2
15	4.2	5.2	43	40	41	137	313	116	165	3.8	2.5	2.2
16	4.2	5.2	43	40	41	137	311	85	106	4.3	2.5	2.2
17	4.2	5.2	43	40	41	137	312	60	106	4.2	2.5	2.2
18	4.2	5.2	43	40	41	137	313	32	55	4.1	2.5	2.1
19	4.2	54	43	40	41	137	313	5.8	5.1	3.9	2.5	2.2
20	4.3	119	43	40	41	137	314	5.3	4.5	3.9	2.5	2.3
21	4.3	117	43	40	41	104	181	5.0	4.3	3.9	2.5	2.1
22	4.3	88	42	40	41	e90	50	4.8	4.0	3.9	2.5	2.4
23	4.3	58	42	40	41	e90	8.2	4.6	3.9	3.9	2.4	2.4
24	4.3	42	42	40	41	e90	7.5	4.5	3.9	3.9	2.3	2.4
25	4.3	4.4	42	40	41	e90	7.3	4.5	3.7	3.9	2.3	2.4
26	4.3	4.0	42	40	41	e90	6.9	4.4	3.5	4.1	2.2	2.4
27	4.3	3.9	42	40	41	e90	38	4.4	3.5	3.8	2.3	2.4
28	4.3	3.9	42	40	41	e90	20	4.3	3.5	3.6	2.3	2.5
29	4.4	3.9	42	40	---	e90	96	4.2	3.5	3.6	2.3	2.3
30	4.9	3.8	43	41	---	e90	139	4.1	4.4	2.9	2.4	2.3
31	5.0	---	25	41	---	e90	---	3.9	---	2.9	2.6	---
TOTAL	131.7	597.9	1241.4	858.2	1148	2992	3608.9	4813.3	1103.7	124.7	75.3	69.7
MEAN	4.25	19.9	40.0	27.7	41.0	96.5	120	155	36.8	4.02	2.43	2.32
MAX	5.0	119	98	41	41	137	314	666	228	4.6	2.9	2.5
MIN	3.9	3.8	3.6	3.5	41	41	6.2	3.9	3.5	2.9	2.1	2.1
AC-FT	261	1190	2460	1700	2280	5930	7160	9550	2190	247	149	138

e Estimated

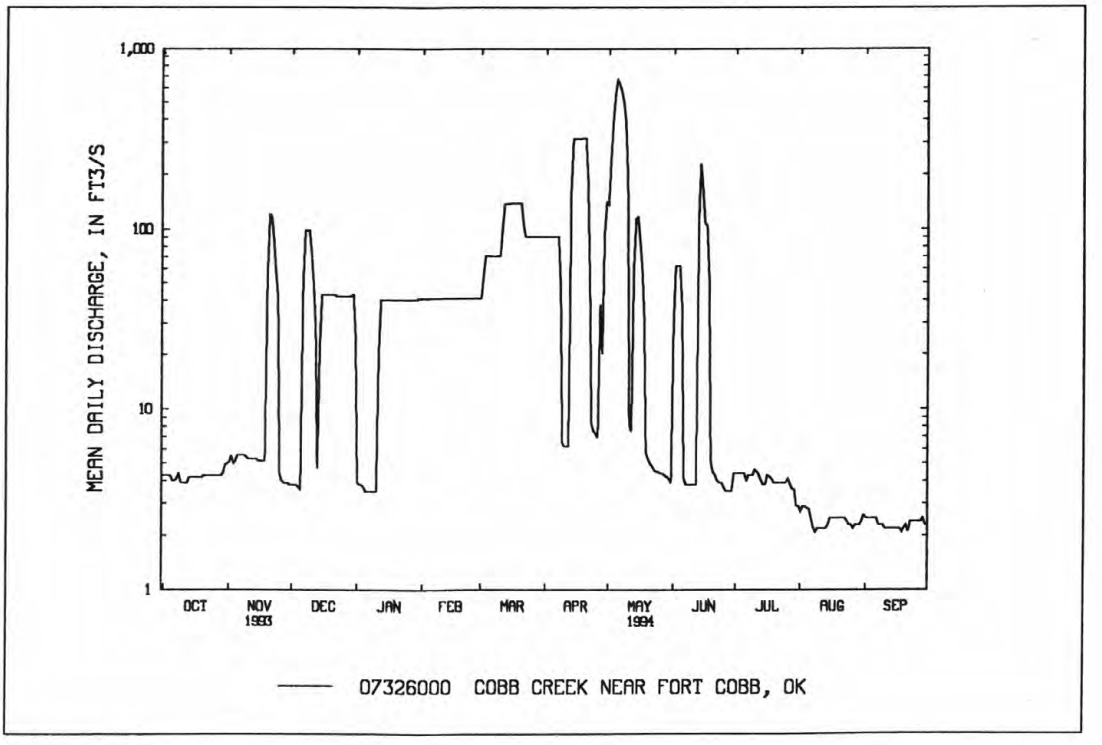
07326000 COBB CREEK NEAR FORT COBB, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	26.2	32.4	20.5	24.7	21.6	34.1	26.0	45.4	116	28.1	15.5	17.7
MAX	345	538	194	139	131	312	169	429	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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1963-94	
ANNUAL TOTAL	40533.8		16764.8			
ANNUAL MEAN	111		45.9		[a]34.0	
HIGHEST ANNUAL MEAN					176	1987
LOWEST ANNUAL MEAN					2.34	1981
HIGHEST DAILY MEAN	1010	May 30	666	May 5	1270	Jun 23 1987
LOWEST DAILY MEAN	3.6	Dec 5	[b]2.1	Aug 8	[c].20	Jul 20 1981
ANNUAL SEVEN-DAY MINIMUM	3.8	Nov 29	2.2	Aug 7	.20	Jul 20 1981
INSTANTANEOUS PEAK FLOW			676	May 6	[d]1280	Jun 23 1987
INSTANTANEOUS PEAK STAGE			12.17	May 6	[e]18.44	May 15 1986
ANNUAL RUNOFF (AC-FT)	80400		33250		24600	
10 PERCENT EXCEEDS	214		109		62	
50 PERCENT EXCEEDS	41		5.3		2.9	
90 PERCENT EXCEEDS	4.3		2.4		1.9	

[a]Prior to regulation by Fort Cobb Reservoir, water years 1940-58, 50.2 ft^3/s.
[b]Also occurred Sept. 18, 21.
[c]Also occurred Sept. 20, 24-26, 1956.
[d]Maximum discharge for period of record, 35,000 ft^3/s, May 17, 1949, from rating curve extended above 4,300 ft^3/s on basis of contracted opening measurement.
[d]Backwater from Punjo Creek. 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 fair. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	172	179	195	250	242	263	223	1730	274	160	e101	e76
2	170	177	199	232	241	277	218	1560	300	152	e100	e76
3	166	158	223	229	239	265	216	1540	302	145	e98	e75
4	163	169	244	230	237	274	213	1930	279	151	e95	e74
5	163	171	243	228	238	276	213	1590	262	147	e94	92
6	160	181	246	226	240	270	213	1280	264	133	e93	96
7	162	171	261	226	243	266	211	1030	361	126	e92	91
8	168	182	303	225	243	346	213	908	252	123	e92	91
9	170	164	305	224	244	514	239	765	217	136	e90	90
10	173	163	305	223	e240	550	208	672	230	133	e88	89
11	192	186	290	222	e233	680	262	541	276	128	e88	88
12	189	200	273	223	e231	649	841	398	1020	125	e87	e87
13	179	226	278	243	234	561	1160	390	1120	124	e87	e86
14	179	242	259	246	234	481	906	383	1180	128	e86	e84
15	178	241	253	247	239	440	704	408	885	128	e85	e84
16	178	215	274	244	239	412	590	386	564	149	e84	e82
17	179	207	277	247	234	391	548	352	427	148	e84	e81
18	176	218	273	247	232	374	516	339	370	136	e84	e81
19	179	210	268	e244	236	357	497	320	301	138	e84	e80
20	181	223	269	242	245	352	487	268	237	135	e84	e80
21	180	267	265	235	248	339	480	251	221	121	e83	e78
22	178	266	264	238	311	302	396	239	207	115	e82	e75
23	178	269	263	242	299	251	294	231	193	111	e82	e73
24	179	233	262	244	274	246	245	230	182	110	e81	e72
25	179	243	262	244	276	237	239	262	174	110	e80	e72
26	178	226	260	241	264	239	238	262	169	112	e79	e71
27	176	221	258	239	254	240	247	264	161	111	e79	e70
28	177	218	258	239	252	235	641	254	152	110	e78	e69
29	178	219	258	238	---	234	833	256	147	107	e78	e68
30	176	199	257	241	---	233	959	339	162	106	e77	e68
31	178	---	257	240	---	228	---	305	---	104	e77	---
TOTAL	5434	6244	8102	7339	6942	10782	13250	19683	10889	3962	2672	2399
MEAN	175	208	261	237	248	348	442	635	363	128	86.2	80.0
MAX	192	269	305	250	311	680	1160	1930	1180	160	101	96
MIN	160	158	195	222	231	228	208	230	147	104	77	68
AC-FT	10780	12380	16070	14560	13770	21390	26280	39040	21600	7860	5300	4760

e Estimated

07326500 WASHITA RIVER AT ANADARKO, OK--Continued

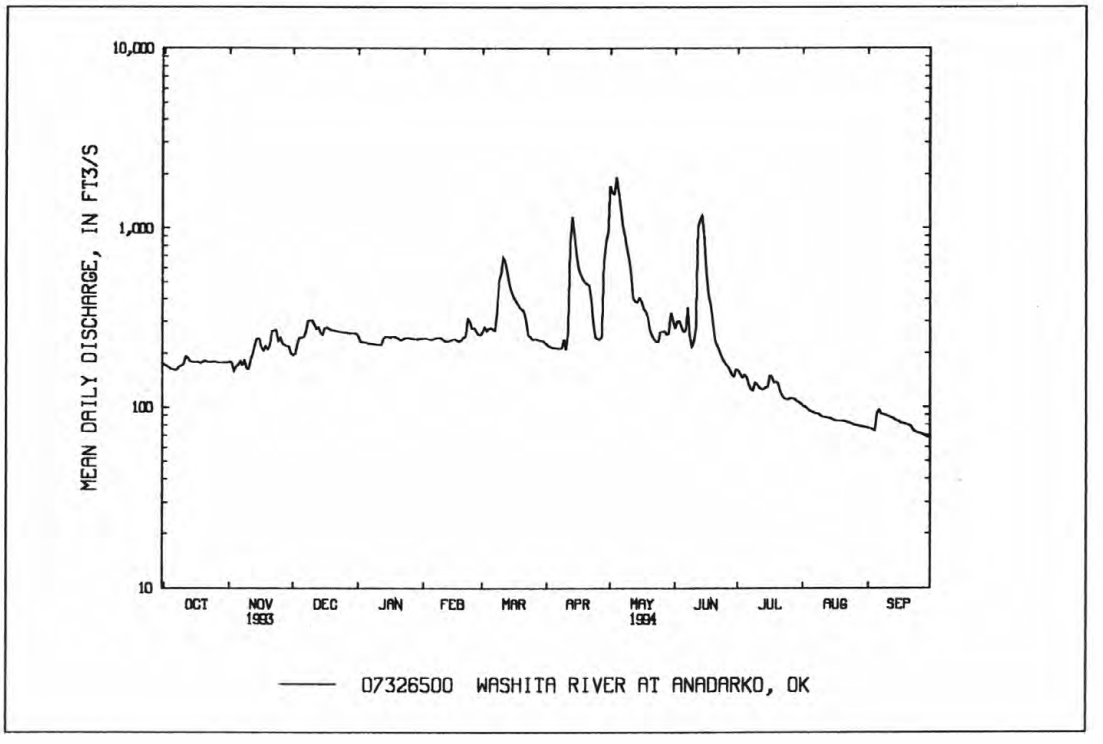
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	481	327	250	245	249	383	381	896	943	348	221	328
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

	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1964-94	
ANNUAL TOTAL	398803		97698			
ANNUAL MEAN	1093		268		[a]421	
HIGHEST ANNUAL MEAN					1788	1987
LOWEST ANNUAL MEAN					72.7	1971
HIGHEST DAILY MEAN	22500	May 11	1930	May 4	37700	Oct 21 1983
LOWEST DAILY MEAN	158	Nov 3	[b]68	Sep 29	.00	Aug 1 1964
ANNUAL SEVEN-DAY MINIMUM	165	Oct 2	70	Sep 24	.77	Jul 19 1964
INSTANTANEOUS PEAK FLOW			2000	May 4	44700	Oct 21 1983
INSTANTANEOUS PEAK STAGE			12.17	May 4	[c]25.20	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	791000		193800		305200	
10 PERCENT EXCEEDS	2390		432		958	
50 PERCENT EXCEEDS	639		231		158	
90 PERCENT EXCEEDS	180		84		48	

[a]Prior to regulations, water years 1903-08, 1936-37, 595 ft^3/s.
[b]Also occurred September 30.
[c]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 September 1994 (discontinued).

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

REMARKS.--Records poor.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.4	e.95	e5.2	e5.7	e4.2	22	e4.8	14	e6.0	e2.5	e.08	e.00
2	e1.4	e.95	e5.2	e5.7	e4.2	13	e4.8	99	e5.4	e2.4	e.07	e.00
3	e1.4	e.93	12	e5.6	e4.4	e8.5	e4.7	52	e6.8	e2.1	e.06	e.00
4	e1.4	e.92	e8.4	e5.6	e4.4	e8.2	e4.7	24	e6.0	e1.9	e.15	e.00
5	e1.4	e.91	e6.9	e5.5	e4.4	e7.9	e4.7	13	e5.4	e1.7	e.04	e.00
6	1.4	e.91	e6.1	e5.5	e4.3	e7.7	e4.6	7.1	e5.0	e1.4	e.16	e.00
7	e1.4	e.90	e5.8	e5.4	e4.3	e7.6	e4.5	e6.2	e4.8	e1.3	e.14	e.00
8	e1.3	e.90	e5.6	e5.4	e4.3	177	e4.4	e5.8	e4.7	e2.3	e.11	e.00
9	e1.3	e.90	e5.4	e5.3	e4.2	63	e4.3	e6.9	e4.6	e2.6	e.08	e.00
10	e1.3	e.88	5.3	e5.3	e4.2	36	e4.3	e7.2	e4.5	e1.6	e.06	e.00
11	e1.3	e.88	e5.2	e5.3	e4.2	15	147	e7.1	e4.3	e1.6	e.05	e.00
12	e1.3	24	8.3	e5.2	e4.2	8.9	20	7.9	e4.2	e1.7	e.07	e.00
13	e1.3	11	16	e5.2	e4.2	e8.7	e11	20	e4.2	e1.5	e.08	e.00
14	e1.3	63	e11	e5.1	e4.2	e8.3	e8.4	17	e4.2	e1.5	e.10	e.00
15	e1.2	14	e8.6	e5.1	e4.2	e7.2	e7.0	9.0	e4.0	e7.6	e.08	e.00
16	e1.2	e6.3	e7.9	e5.0	e4.2	e6.9	e5.5	e8.0	e3.8	e5.6	e.06	e.00
17	e1.2	e5.9	e7.7	e5.0	e4.2	e6.5	e4.5	e7.0	e3.9	e3.8	e.07	e.00
18	e1.2	e5.7	e7.6	e5.0	e4.2	e6.3	3.8	e6.4	e4.0	e2.3	e.08	e.00
19	e1.2	e5.6	e7.3	e4.9	7.7	e5.9	3.6	e6.4	e4.0	e1.9	e.11	e.00
20	e1.1	e5.6	e7.2	e4.8	8.6	e5.5	3.4	e6.3	e3.6	e1.5	e.12	e.00
21	e1.1	e5.5	e7.1	e4.8	16	e5.4	3.1	e6.4	e3.2	e1.6	e.10	e.00
22	e1.1	e5.5	e6.9	e4.8	67	e5.2	2.9	e8.0	e3.1	e1.4	e.09	e.00
23	e1.1	e5.4	e6.7	e4.8	14	e5.1	2.7	e8.0	e3.1	e1.1	e.11	e.00
24	e1.1	e5.4	e6.5	e4.8	e8.8	e5.0	2.5	36	e3.1	e.88	e.12	e.00
25	e1.0	e5.4	e6.5	e4.8	e8.4	e5.0	3.6	12	e3.0	e.70	e.06	e.00
26	e1.0	e5.4	e6.3	e4.8	e8.2	9.1	4.3	15	e3.0	e.54	e.01	e.00
27	1.0	e5.4	e6.2	e4.8	e8.0	e7.0	4.3	e11	e3.0	.46	e.00	e.00
28	e1.0	e5.4	e6.1	4.8	e8.0	e6.2	47	e9.2	e2.9	e.32	e.00	e.00
29	e.99	e5.3	e5.9	e4.7	---	e5.4	89	113	e2.7	e.23	e.00	e.00
30	e.99	e5.3	e5.9	e4.5	---	e5.1	82	17	e2.5	e.16	e.00	e.00
31	e.96	---	e5.8	e4.3	---	e4.9	---	7.2	---	e.10	e.00	---
TOTAL	37.34	205.13	222.6	157.5	231.2	493.5	501.4	573.1	123.0	56.29	2.26	0.00
MEAN	1.20	6.84	7.18	5.08	8.26	15.9	16.7	18.5	4.10	1.82	.073	.000
MAX	1.4	63	16	5.7	67	177	147	113	6.8	7.6	.16	.00
MIN	.96	.88	5.2	4.3	4.2	4.9	2.5	5.8	2.5	.10	.00	.00
AC-FT	74	407	442	312	459	979	995	1140	244	112	4.5	.00

e Estimated

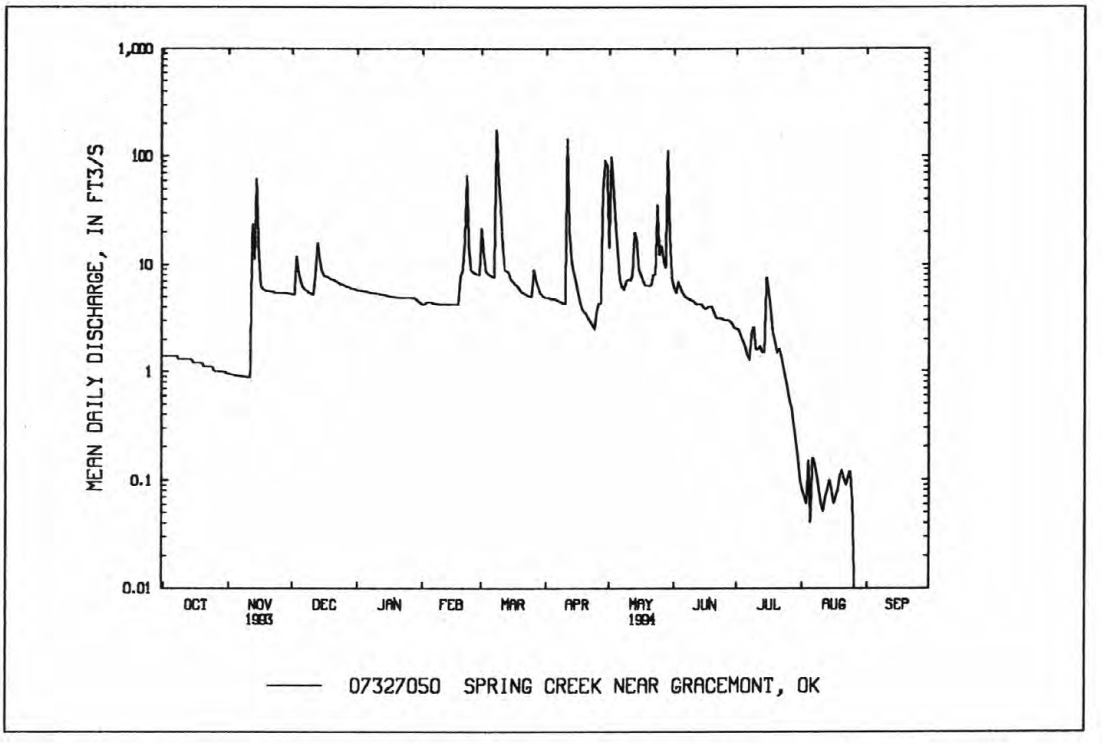
07327050 SPRING CREEK NEAR GRACEMONT, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	3.05	13.9	18.3	12.8	10.2	14.1	12.0	15.9	10.9	3.19	3.84	4.27
MAX	6.86	26.4	30.0	17.0	14.3	15.9	16.7	18.9	14.7	6.06	11.7	11.5
(WY)	1992	1993	1992	1993	1993	1994	1994	1993	1992	1992	1992	1991
MIN	1.09	6.84	7.18	5.08	8.21	12.9	7.45	10.5	4.10	1.82	.073	.000
(WY)	1993	1994	1994	1994	1992	1993	1992	1992	1994	1994	1994	1994

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1991-94	
ANNUAL TOTAL	3351.43		2603.32			
ANNUAL MEAN	9.18		7.13		10.1	
HIGHEST ANNUAL MEAN					11.7	1993
LOWEST ANNUAL MEAN					7.13	1994
HIGHEST DAILY MEAN	270	May 8	177	Mar 8	279	Dec 19 1991
LOWEST DAILY MEAN	.70	Jul 26	.00	Aug 27	.00	Aug 27 1994
ANNUAL SEVEN-DAY MINIMUM	.74	Aug 4	.00	[a]Aug 27	.00	[a]Aug 27 1994
INSTANTANEOUS PEAK FLOW			490	Apr 11	4480	May 8 1993
INSTANTANEOUS PEAK STAGE			9.02	Apr 11	[b]12.52	May 8 1993
ANNUAL RUNOFF (AC-FT)	6650		5160		7320	
10 PERCENT EXCEEDS	18		9.1		18	
50 PERCENT EXCEEDS	5.9		4.4		4.7	
90 PERCENT EXCEEDS	.79		.03		.59	

[a]Occured Aug. 27-Sept. 30.
[b] From high-water mark.



07327441 SCS POND NO. 26 NEAR CYRIL, OK

LOCATION.--Lat 34°54'09", long 98°14'22", in SW 1/4 SE 1/4 sec.15, T.5 N., R.10 W., Caddo County, Hydrologic Unit 11130302, on north face of dam, on Little Washita River, 2.2 mi west of Cyril, and at mile 28.4.

DRAINAGE AREA.--6.64 mi^2 (Agricultural Research Service).

PERIOD OF RECORD.--November 1993 to September 1994.

GAGE.--Water-stage recorder. Datum of gage is 1,300.00 ft above sea level (Agricultural Research Service).

REMARKS.--Reservoir is formed by earthen dam. Emergency spillway elevation is 1,347.8 ft, contents 1,520 acre-ft; principal spillway elevation is 1,325.2 ft, contents 142 acre-ft; drain value elevation 1,291.5 ft. Figures herein represent total contents. Reservoir is used for flood control.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 157 acre-ft, Mar. 8; minimum, 143 ft, at times, elevation 1,315.02 ft.

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

1313	115.0	1316	155.0
1314	130.0	1317	170.0
1315	142.5	1318	185.0

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY OBSERVATION AT 24:00 VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	143	143	e144	e144	e146	145	146	144	143	144	143
2	---	143	143	e144	e144	e146	145	148	144	143	144	143
3	---	143	144	e144	144	e145	145	147	144	143	144	143
4	---	143	143	e144	e144	e144	145	146	144	143	144	143
5	---	143	143	e144	e144	e144	145	146	144	143	144	143
6	---	143	143	e144	e144	e144	145	146	144	143	144	143
7	---	143	143	e144	e144	e144	145	146	144	143	144	143
8	---	143	144	e144	e144	e157	145	146	144	143	143	143
9	---	143	144	e144	e144	149	145	146	144	146	143	144
10	---	143	144	e144	e144	147	145	146	144	144	143	143
11	---	143	144	e144	e144	147	147	145	147	143	143	143
12	---	143	144	e144	e144	146	146	145	145	143	143	143
13	---	144	145	e144	e144	146	145	145	144	143	143	143
14	---	144	144	e144	e144	146	145	145	144	145	143	143
15	---	144	144	e144	e144	146	145	145	144	146	143	143
16	---	143	144	e144	e144	146	145	145	144	149	143	143
17	---	143	144	e144	e144	145	145	145	144	146	144	143
18	---	143	144	e144	e145	145	145	145	144	145	144	143
19	---	143	144	e144	e145	145	145	145	144	144	143	143
20	---	143	144	e144	e145	145	145	145	143	144	143	143
21	---	143	144	e144	e146	145	145	145	143	144	143	143
22	---	143	144	e144	e150	145	145	145	143	144	143	144
23	---	143	e144	e144	e147	145	145	145	143	144	143	143
24	---	143	e144	e144	e146	145	145	145	143	144	143	143
25	---	143	e144	e144	e145	145	146	145	143	144	143	143
26	---	143	e144	e144	e145	145	145	145	143	144	143	143
27	---	143	e144	144	e145	145	145	145	143	144	143	143
28	---	143	e144	e144	e145	145	145	145	143	144	143	143
29	---	143	e144	e144	---	145	149	145	143	144	143	143
30	---	143	e144	e144	---	145	150	145	143	144	143	143
31	---	---	e144	e144	---	145	---	144	---	144	143	---

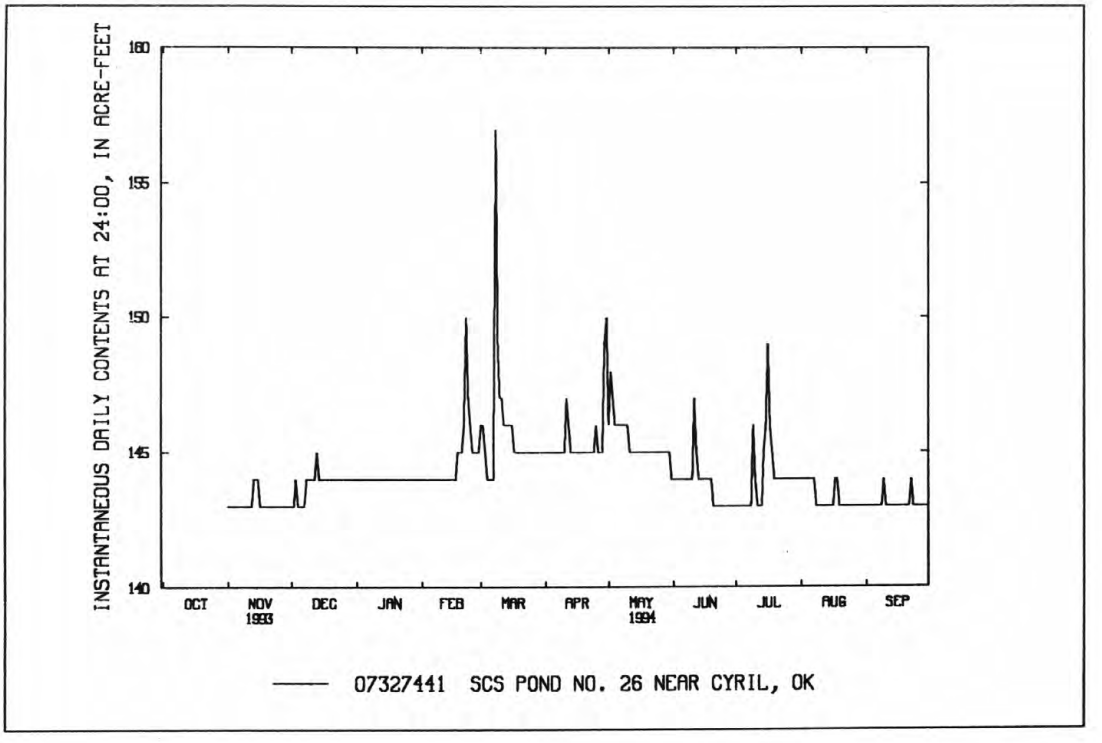
e Estimated

07327441 SCS POND NO. 26 NEAR CYRIL, OK--Continued

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MAX	---	144	145	144	150	157	150	148	147	149	144	144
MIN	---	143	143	144	144	144	145	144	143	143	143	143
(‡)	--	1,315.02	--	--	--	1,315.19	1,315.36	1,315.15	1,315.05	1,315.10	1,315.05	1,315.04
(‡‡)	--	--	+1	0	+1	0	+5	-6	-1	+1	-1	0

(‡) ELEVATION, IN FEET, AT END OF MONTH

(‡‡) CHANGE IN CONTENTS, IN ACRE-FEET



07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK

LOCATION.-- Lat 34° 53′ 32", long 98° 13′ 58", in SW 1/4 NW 1/4 sec. 23, T.5N., R.10W., Caddo County, Hydrologic Unit 11130302, on left bank 300 ft downstream from county road, 1.7 mi west of Cyril, 6.8 mi east of Apache, and at mile 28.0.

DRAINAGE AREA.--11.6 mi^2.

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

GAGE.--Water-stage recorder. Altitude of gage is 1,255.2 above sea level, from topographic map.

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	7.0	6.8	11	12	13	20	15	15	13	6.9	4.6	3.7
2	7.0	6.7	11	13	13	17	14	29	13	6.7	5.3	3.5
3	7.0	6.6	11	13	13	15	14	17	13	6.6	5.1	3.6
4	6.9	6.4	11	12	13	15	15	15	12	6.4	4.7	3.3
5	6.7	6.3	11	12	13	14	14	14	13	6.4	4.7	3.2
6	6.8	6.3	11	12	12	14	14	26	13	6.3	4.7	3.1
7	6.7	6.3	10	12	12	14	13	21	13	6.6	4.6	3.2
8	6.6	6.3	10	12	12	14	13	38	13	6.2	4.6	3.3
9	6.7	6.4	40	32	12	14	13	167	21	5.9	4.4	3.4
10	6.9	6.8	18	18	14	14	13	63	17	5.8	4.3	3.3
11	6.8	12	14	14	13	14	12	42	12	5.8	4.1	3.1
12	6.9	8.9	13	14	12	14	13	21	12	5.8	4.0	3.4
13	6.9	7.2	74	13	12	14	13	18	11	6.1	3.9	5.9
14	6.8	6.6	92	13	12	14	54	17	10	6.4	3.7	5.2
15	6.9	6.4	36	13	55	14	36	16	10	6.3	3.7	3.9
16	6.8	6.4	20	13	29	15	18	15	10	5.9	3.7	3.6
17	6.7	6.5	17	13	16	14	16	15	10	5.7	3.7	3.5
18	6.9	6.8	16	12	15	15	15	15	10	5.6	3.4	3.3
19	6.9	38	16	14	15	16	15	15	42	5.5	3.3	3.2
20	6.9	14	15	20	15	15	14	14	196	5.4	3.2	3.2
21	6.9	15	15	19	14	15	14	14	11	5.3	3.2	3.1
22	6.8	25	14	15	14	17	14	14	8.4	5.4	3.2	3.0
23	6.9	14	14	14	14	15	14	69	7.6	5.2	3.4	3.0
24	6.9	28	13	13	14	15	14	22	8.3	5.0	3.6	3.0
25	6.9	25	13	14	14	15	14	16	24	4.8	3.4	4.3
26	6.8	14	13	13	13	15	14	15	9.7	4.8	3.2	3.5
27	6.8	13	13	13	13	15	14	14	8.6	4.7	3.2	3.3
28	6.9	12	13	13	15	14	14	14	7.7	4.7	3.1	3.2
29	7.4	12	13	13	---	17	45	14	7.4	4.7	3.1	3.0
30	7.0	11	13	13	---	46	18	14	7.1	4.6	3.0	3.0
31	6.9	---	12	13	---	17	---	13	---	4.5	3.6	---
TOTAL	213.0	346.7	603	440	432	497	519	812	563.8	176.0	119.7	104.3
MEAN	6.87	11.6	19.5	14.2	15.4	16.0	17.3	26.2	18.8	5.68	3.86	3.48
MAX	7.4	38	92	32	55	46	54	167	196	6.9	5.3	5.9
MIN	6.6	6.3	10	12	12	14	12	13	7.1	4.5	3.0	3.0
AC-FT	422	688	1200	873	857	986	1030	1610	1120	349	237	207

07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK--Continued

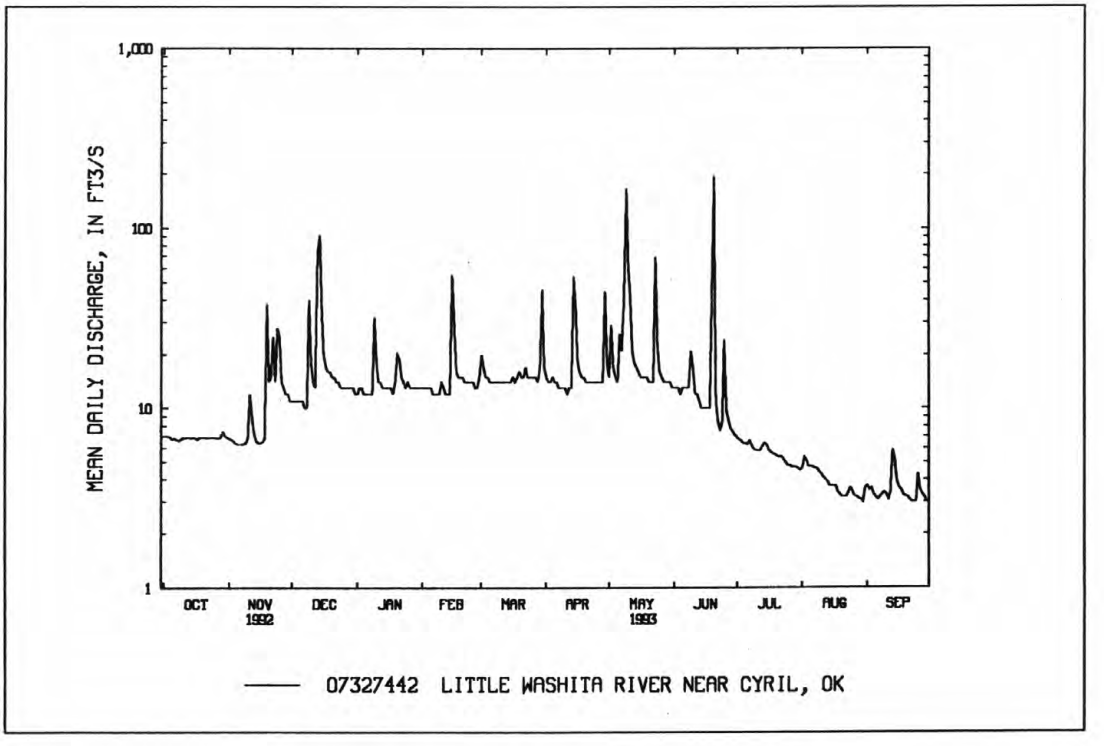
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1993, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	6.87	11.6	19.5	14.2	15.4	16.0	17.3	26.2	18.8	5.68	3.86	3.48
MAX	6.87	11.6	19.5	14.2	15.4	16.0	17.3	26.2	18.8	5.68	3.86	3.48
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	6.87	11.6	19.5	14.2	15.4	16.0	17.3	26.2	18.8	5.68	3.86	3.48
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993

SUMMARY STATISTICS FOR 1993 WATER YEAR

ANNUAL TOTAL	4826.5	
ANNUAL MEAN	13.2	
HIGHEST DAILY MEAN	196	Jun 20
LOWEST DAILY MEAN	[a]3.0	Aug 30
ANNUAL SEVEN-DAY MINIMUM	3.1	Sep 18
INSTANTANEOUS PEAK FLOW	1090	Jun 20
INSTANTANEOUS PEAK STAGE	15.00	Jun 20
ANNUAL RUNOFF (AC-FT)	9570	
10 PERCENT EXCEEDS	18	
50 PERCENT EXCEEDS	12	
90 PERCENT EXCEEDS	3.6	

[a]Also occurred on Sept. 22-24, 29-30.



07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK--Continued

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

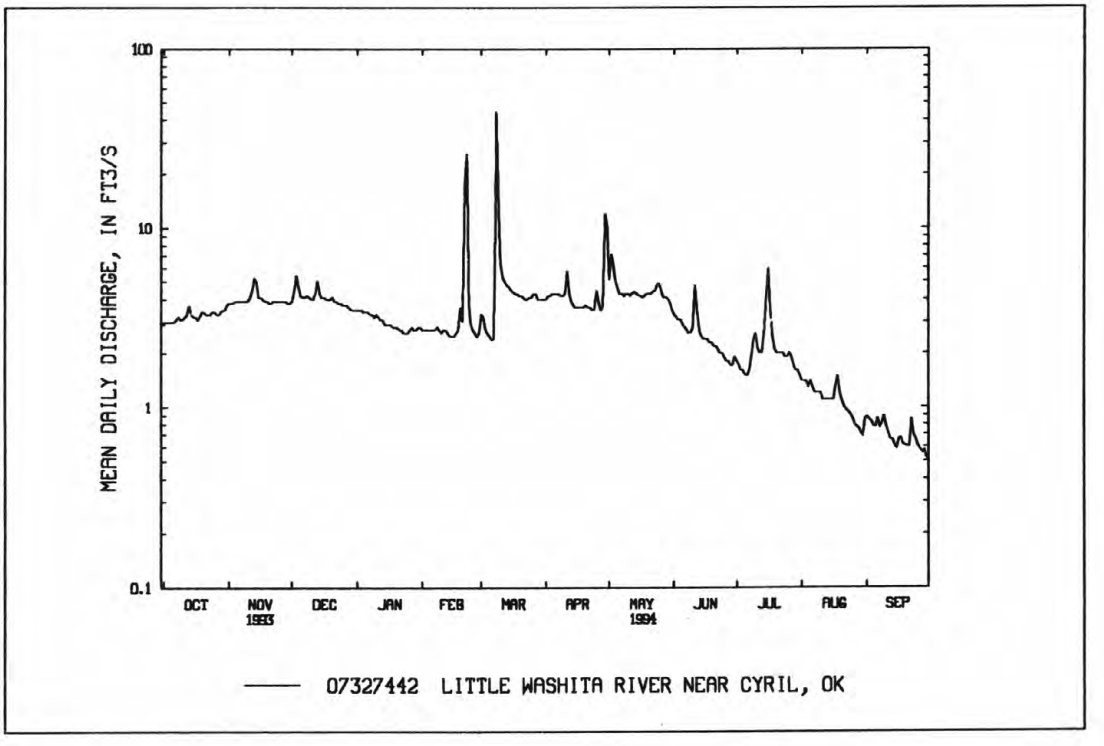
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.9	3.8	3.9	3.5	2.7	3.3	4.0	5.1	3.3	1.8	1.4	.88
2	3.0	3.8	4.5	3.5	2.7	3.2	4.2	7.2	3.2	1.7	1.4	.85
3	3.0	3.8	5.5	3.5	2.7	2.7	4.2	6.2	3.1	1.6	1.4	.83
4	3.0	3.9	4.7	3.4	2.7	2.6	4.3	5.0	3.1	1.6	1.3	.78
5	3.0	3.9	4.2	3.4	2.7	2.5	4.3	4.6	2.9	1.5	1.4	.77
6	3.0	3.9	4.1	3.4	2.7	2.4	4.3	4.3	2.8	1.5	1.3	.87
7	3.1	3.9	4.1	3.3	2.7	2.4	4.3	4.3	2.7	1.6	1.2	.77
8	3.2	3.9	4.2	3.3	2.8	45	4.2	4.2	2.6	1.9	1.2	.81
9	3.1	3.9	4.1	3.2	2.7	13	4.2	4.3	2.6	2.4	1.2	.90
10	3.1	3.9	4.0	3.3	2.6	6.4	4.3	4.3	2.8	2.6	1.2	.78
11	3.2	4.1	4.0	3.2	2.7	5.4	5.8	4.2	4.8	2.1	1.1	.71
12	3.3	4.5	4.3	3.1	2.7	5.0	4.4	4.3	3.5	2.0	1.1	.66
13	3.7	5.2	5.1	3.1	2.6	4.8	3.9	4.4	2.7	2.0	1.1	.66
14	3.3	5.0	4.3	2.9	2.5	4.7	3.7	4.3	2.5	2.6	1.1	.61
15	3.2	4.1	4.1	2.9	2.5	4.5	3.6	4.2	2.4	4.0	1.1	.59
16	3.2	4.1	4.1	2.9	2.5	4.4	3.6	4.2	2.4	6.0	1.1	.66
17	3.1	4.0	4.0	2.9	2.6	4.3	3.6	4.1	2.4	3.5	1.3	.67
18	3.2	3.9	4.0	2.8	2.7	4.3	3.6	4.2	2.3	2.5	1.5	.62
19	3.4	3.9	4.0	2.8	3.6	4.2	3.6	4.3	2.3	2.1	1.2	.61
20	3.4	3.8	4.1	2.8	3.0	4.2	3.7	4.3	2.2	2.0	1.1	.60
21	3.3	3.8	3.9	2.7	18	4.1	3.6	4.3	2.2	2.0	1.0	.60
22	3.3	3.9	3.9	2.7	26	4.0	3.6	4.4	2.1	2.0	.97	.86
23	3.3	3.9	3.8	2.6	3.9	4.0	3.5	4.5	2.0	2.0	.94	.69
24	3.4	3.9	3.8	2.6	2.9	4.1	3.5	4.9	2.0	1.9	.91	.66
25	3.4	3.9	3.7	2.6	2.7	4.1	4.5	4.9	1.9	1.9	.87	.61
26	3.3	3.9	3.7	2.7	2.6	4.3	3.9	4.4	1.8	2.0	.80	.58
27	3.3	3.9	3.7	2.8	2.5	4.3	3.5	4.1	1.8	1.9	.77	.56
28	3.4	3.9	3.6	2.7	2.6	4.0	3.6	4.1	1.7	1.7	.76	.57
29	3.5	3.8	3.5	2.7	---	4.0	12	4.0	1.7	1.6	.71	.52
30	3.5	3.8	3.5	2.8	---	4.0	10	3.8	1.9	1.6	.69	.51
31	3.7	---	3.5	2.8	---	4.0	---	3.5	---	1.5	.86	---
TOTAL	100.8	120.0	125.9	92.9	115.6	174.2	133.5	138.9	75.7	67.1	33.98	20.79
MEAN	3.25	4.00	4.06	3.00	4.13	5.62	4.45	4.48	2.52	2.16	1.10	.69
MAX	3.7	5.2	5.5	3.5	26	45	12	7.2	4.8	6.0	1.5	.90
MIN	2.9	3.8	3.5	2.6	2.5	2.4	3.5	3.5	1.7	1.5	.69	.51
AC-FT	200	238	250	184	229	346	265	276	150	133	67	41

07327442 LITTLE WASHITA RIVER NEAR CYRIL, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1993 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	5.06	7.78	11.8	8.60	9.78	10.8	10.9	15.3	10.7	3.92	2.48	2.08
MAX	6.87	11.6	19.5	14.2	15.4	16.0	17.3	26.2	18.8	5.68	3.86	3.48
(WY)	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993	1993
MIN	3.25	4.00	4.06	3.00	4.13	5.62	4.45	4.48	2.52	2.16	1.10	.69
(WY)	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1993-94	
ANNUAL TOTAL	4010.5		1199.37			
ANNUAL MEAN	11.0		3.29		8.25	
HIGHEST ANNUAL MEAN					13.2	1993
LOWEST ANNUAL MEAN					3.29	1994
HIGHEST DAILY MEAN	196	Jun 20	45	Mar 8	196	Jun 20 1993
LOWEST DAILY MEAN	2.9	Oct 1	.51	Sep 30	.51	Sep 30 1994
ANNUAL SEVEN-DAY MINIMUM	3.0	Sep 29	.57	Sep 24	.57	Sep 24 1994
INSTANTANEOUS PEAK FLOW			95	Feb 22	1090	Jun 20 1993
INSTANTANEOUS PEAK STAGE			9.30	Feb 22	15.00	Jun 20 1993
ANNUAL RUNOFF (AC-FT)	7950		2380		5980	
10 PERCENT EXCEEDS	16		4.3		15	
50 PERCENT EXCEEDS	6.7		3.2		4.3	
90 PERCENT EXCEEDS	3.3		.89		1.7	



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 poor. U.S. Geological Survey's satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	15	15	15	e13	35	20	42	15	8.1	6.0	5.0
2	11	15	25	15	e13	39	20	58	14	7.4	6.0	5.0
3	11	16	34	17	15	30	20	59	13	6.9	5.8	4.8
4	11	16	26	16	14	28	20	36	13	6.7	5.8	3.6
5	11	16	20	18	14	26	20	30	13	6.4	6.0	3.7
6	11	15	17	17	14	26	18	31	13	6.5	5.8	4.3
7	11	16	17	14	16	24	19	30	13	7.0	5.4	4.0
8	14	15	16	13	14	205	18	28	12	13	5.2	4.1
9	12	15	17	15	13	130	19	29	12	76	5.2	6.4
10	11	15	16	16	e13	67	19	29	13	34	5.1	5.1
11	12	16	15	13	e13	46	26	26	30	18	4.8	4.0
12	13	21	17	13	14	38	24	26	24	13	4.6	4.0
13	18	23	26	16	13	36	19	27	16	11	4.2	3.9
14	15	25	21	16	13	33	18	25	12	10	4.1	3.6
15	14	19	18	15	13	32	16	23	11	20	4.1	3.5
16	15	18	17	16	13	29	15	22	12	23	3.9	3.5
17	14	17	17	14	15	28	16	22	12	20	4.4	3.2
18	14	16	16	e13	18	26	17	21	10	13	9.4	2.9
19	16	16	16	e12	23	24	16	20	9.5	10	6.9	2.9
20	17	14	16	e11	26	23	16	19	9.1	8.6	5.9	2.6
21	15	14	16	e10	24	21	15	19	8.8	8.2	5.5	2.5
22	14	14	16	9.8	158	20	14	19	8.3	8.3	4.9	5.3
23	14	15	15	12	51	20	14	19	8.2	9.0	4.4	5.6
24	14	15	15	15	32	20	15	22	7.9	7.9	4.2	5.0
25	14	13	15	16	24	19	18	25	7.6	7.8	4.2	4.5
26	14	13	15	16	21	21	21	25	7.3	8.7	3.9	4.3
27	13	14	15	14	21	22	17	19	7.0	8.7	3.3	4.2
28	14	14	15	13	24	19	18	20	6.6	7.5	3.1	4.0
29	15	14	14	13	---	19	58	22	6.3	6.9	3.0	4.0
30	15	14	15	13	---	19	101	20	8.0	6.5	2.9	3.7
31	15	---	15	13	---	20	---	17	---	6.2	4.3	---
TOTAL	419	479	548	439.8	655	1145	667	830	352.6	404.3	152.3	123.2
MEAN	13.5	16.0	17.7	14.2	23.4	36.9	22.2	26.8	11.8	13.0	4.91	4.11
MAX	18	25	34	18	158	205	101	59	30	76	9.4	6.4
MIN	11	13	14	9.8	13	19	14	17	6.3	6.2	2.9	2.5
AC-FT	831	950	1090	872	1300	2270	1320	1650	699	802	302	244

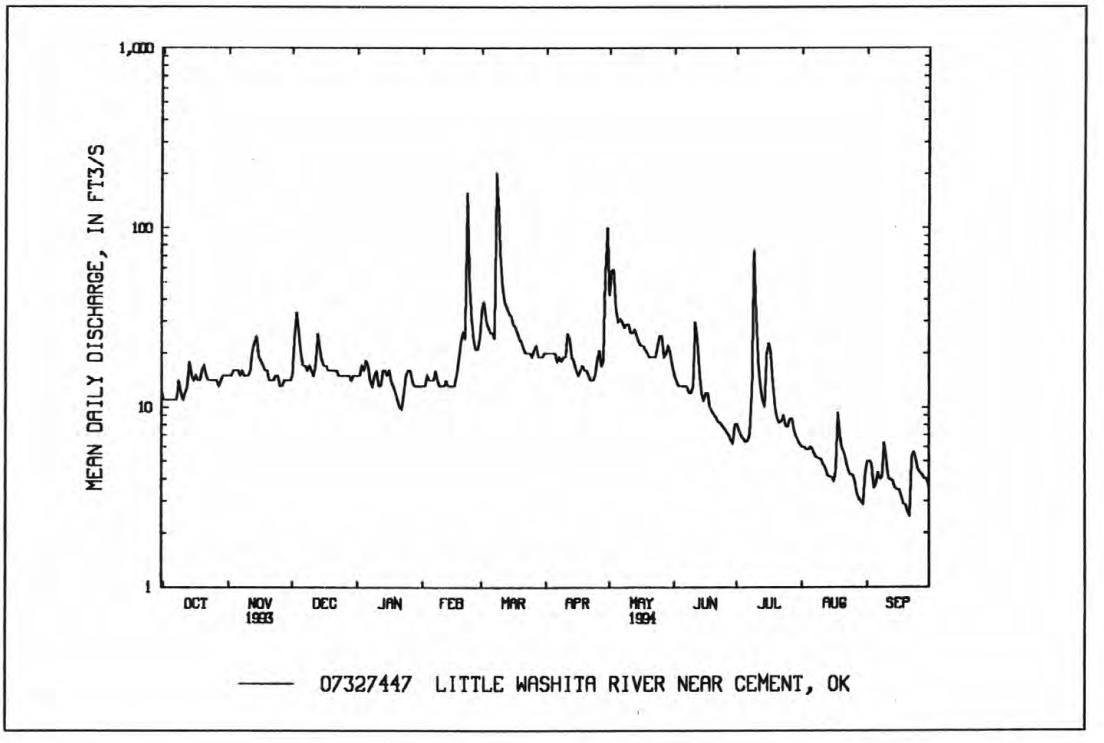
e Estimated

07327447 LITTLE WASHITA RIVER NEAR CEMENT, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	16.6	26.7	47.4	32.7	36.8	42.2	50.7	68.2	53.3	30.9	19.1	17.1
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	13.5	16.0	17.7	14.2	23.4	28.7	22.2	26.8	11.8	13.0	4.91	4.11
(WY)	1994	1994	1994	1994	1994	1992	1994	1994	1994	1994	1994	1994

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1992-94	
ANNUAL TOTAL	16142.9		6215.2			
ANNUAL MEAN	44.2		17.0		34.3	
HIGHEST ANNUAL MEAN					51.6	1993
LOWEST ANNUAL MEAN					17.0	1994
HIGHEST DAILY MEAN	802	May 9	205	Mar 8	802	May 9 1993
LOWEST DAILY MEAN	7.7	Aug 22	2.5	Sep 21	2.5	Sep 21 1994
ANNUAL SEVEN-DAY MINIMUM	8.6	Aug 16	3.0	Sep 15	3.0	Sep 15 1994
INSTANTANEOUS PEAK FLOW			323	Mar 8	1430	Jun 20 1993
INSTANTANEOUS PEAK STAGE			7.85	Mar 8	14.59	Jun 20 1993
ANNUAL RUNOFF (AC-FT)	32020		12330		24840	
10 PERCENT EXCEEDS	70		26		65	
50 PERCENT EXCEEDS	30		15		23	
90 PERCENT EXCEEDS	13		4.6		9.1	



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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	48	41	43	50	e51	90	53	127	66	22	14	22
2	25	42	84	51	e51	109	53	130	61	21	13	16
3	22	43	122	51	51	83	52	198	57	14	13	14
4	27	44	91	49	50	71	50	134	54	11	12	12
5	22	40	65	50	49	65	50	106	50	9.4	11	13
6	25	39	57	48	49	62	48	95	46	8.8	11	14
7	29	40	54	47	49	59	46	72	43	9.1	10	14
8	30	41	52	49	48	484	47	66	39	13	9.1	20
9	15	41	52	49	48	452	47	66	37	1190	8.8	28
10	17	42	49	51	e48	201	48	69	38	342	8.3	21
11	21	44	47	50	e48	138	75	66	57	126	7.6	17
12	28	51	53	51	e48	108	76	64	75	73	7.1	15
13	27	57	80	50	48	98	58	81	52	54	6.5	13
14	29	71	66	49	48	89	51	69	42	46	5.9	12
15	34	58	58	48	47	81	45	58	37	53	e5.4	13
16	43	60	56	51	46	76	41	52	35	96	e5.2	17
17	32	62	54	49	47	72	39	49	33	68	e11	11
18	31	54	51	50	48	68	40	46	31	47	e18	9.9
19	31	48	53	55	53	66	38	42	29	39	e12	9.1
20	35	45	52	52	71	64	38	39	28	27	e9.9	9.0
21	29	45	51	51	73	59	38	37	26	23	e9.0	9.4
22	29	45	50	52	373	57	38	35	23	22	e8.4	26
23	29	44	50	54	169	57	36	34	21	22	7.7	20
24	30	43	50	51	110	55	39	172	20	20	7.5	16
25	33	42	50	51	86	53	67	380	20	19	7.6	15
26	30	44	52	53	75	60	61	149	17	22	7.2	15
27	31	43	50	50	73	65	49	105	15	20	6.4	14
28	40	43	47	49	76	57	47	91	13	19	6.0	13
29	35	43	48	49	---	54	119	192	13	18	5.6	12
30	35	42	49	49	---	52	261	121	19	17	5.2	10
31	37	---	50	51	---	52	---	80	---	15	29	---
TOTAL	929	1397	1786	1560	2033	3157	1750	3025	1097	2486.3	298.4	450.4
MEAN	30.0	46.6	57.6	50.3	72.6	102	58.3	97.6	36.6	80.2	9.63	15.0
MAX	48	71	122	55	373	484	261	380	75	1190	29	28
MIN	15	39	43	47	46	52	36	34	13	8.8	5.2	9.0
AC-FT	1840	2770	3540	3090	4030	6260	3470	6000	2180	4930	592	893

e Estimated

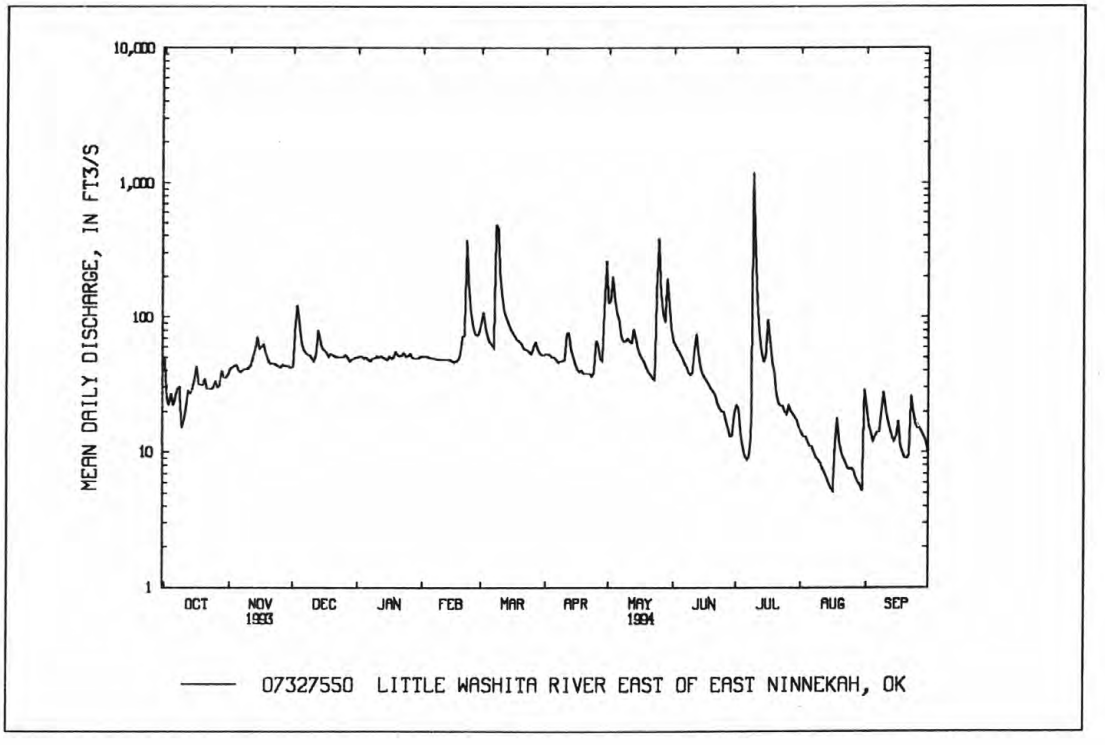
07327550 LITTLE WASHITA RIVER EAST OF EAST NINNEKAH, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	35.7	75.6	121	100	119	112	128	179	137	82.4	51.3	54.9
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	30.0	46.6	57.6	50.3	72.6	78.8	58.3	97.6	36.6	41.3	9.63	15.0
(WY)	1994	1994	1994	1994	1994	1992	1994	1994	1994	1993	1994	1994

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1992-94	
ANNUAL TOTAL	44129		19969.1			
ANNUAL MEAN	121		54.7		96.1	
HIGHEST ANNUAL MEAN					137	1993
LOWEST ANNUAL MEAN					54.7	1994
HIGHEST DAILY MEAN	2430	May 9	1190	Jul 9	2430	May 9 1993
LOWEST DAILY MEAN	15	Oct 9	5.2	Aug 16,30	5.2	Aug 16,30 1994
ANNUAL SEVEN-DAY MINIMUM	23	Oct 5	6.5	Aug 24	6.5	Aug 24 1994
INSTANTANEOUS PEAK FLOW			4520	Jul 9	[a]9920	May 9 1993
INSTANTANEOUS PEAK STAGE			16.50	Jul 9	[b]20.70	May 9 1993
ANNUAL RUNOFF (AC-FT)	87530		39610		69620	
10 PERCENT EXCEEDS	201		82		187	
50 PERCENT EXCEEDS	86		47		65	
90 PERCENT EXCEEDS	36		12		27	

[a]From rating extended above 1,500 ft^3/s.
[b]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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e350	e360	e410	e410	e490	659	e450	1830	820	e247	e148	e232
2	e349	e363	e475	e413	e480	793	e445	1890	720	e235	e141	e190
3	e348	e367	692	e418	e470	772	e430	2300	e600	e280	e134	e164
4	e348	e370	729	e417	e470	707	e423	2170	e520	e255	e125	e157
5	e346	e372	660	e415	489	662	e423	2100	e480	e235	e137	e153
6	e342	e368	598	e420	482	645	e417	1860	524	e215	e149	e151
7	366	e363	560	e430	478	622	e403	1600	e485	e207	e138	e190
8	366	e360	543	e420	480	1120	e425	e1380	e440	e490	e132	e390
9	e375	e363	560	e412	483	2140	e440	e1200	e525	900	e127	e325
10	e385	e374	594	e400	e468	1730	e450	e1100	e490	867	e122	e268
11	e392	e380	584	e417	e462	1410	e470	e1000	e475	590	e120	e247
12	e410	e395	580	e422	e458	1230	1020	e900	581	e440	e118	e226
13	e402	e410	682	e430	e450	1120	1050	e840	1010	e355	e117	e216
14	e420	520	718	e422	484	1020	1240	e800	1180	e315	e115	e195
15	e445	668	648	e418	505	908	1080	e760	1170	e295	e114	e184
16	e440	694	581	e418	534	815	949	e740	1070	e315	e114	e470
17	e426	652	e540	e422	531	751	869	e720	926	400	e115	e300
18	e417	596	e530	e427	547	709	807	e700	800	545	e150	e230
19	e435	545	e525	e426	596	670	779	e679	720	e480	e197	e187
20	e460	e505	e520	e428	713	630	766	e655	694	e385	e190	e164
21	e445	e480	e510	e430	741	e625	751	e605	e550	e323	e174	e142
22	e435	e455	e502	e436	1200	e615	737	e560	e480	e290	e150	e140
23	e420	e432	e495	e445	1110	e595	714	e525	e460	e320	e139	e152
24	e400	e417	e485	525	e900	e550	e615	581	e445	e285	e132	e150
25	e390	e412	e483	e530	767	e525	e580	1030	e410	e255	e124	e140
26	e385	e410	e480	e525	719	e525	e570	973	e355	e228	e118	e170
27	e379	e408	e473	e527	658	e555	e530	845	e330	e208	e112	e158
28	e372	e405	e465	e530	636	e550	e525	773	e300	186	e108	e152
29	e370	e398	e458	e510	---	e510	1060	932	e282	e175	e104	e147
30	e360	e393	e445	e498	---	e460	2010	1050	e265	e164	e147	e141
31	e355	---	e425	e494	---	e450	---	913	---	e157	e185	---
TOTAL	12133	13235	16950	13835	16801	25073	21428	34011	18107	10642	4196	6131
MEAN	391	441	547	446	600	809	714	1097	604	343	135	204
MAX	460	694	729	530	1200	2140	2010	2300	1180	900	197	470
MIN	342	360	410	400	450	450	403	525	265	157	104	140
AC-FT	24070	26250	33620	27440	33320	49730	42500	67460	35920	21110	8320	12160

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 1994, BY WATER YEAR (WY)

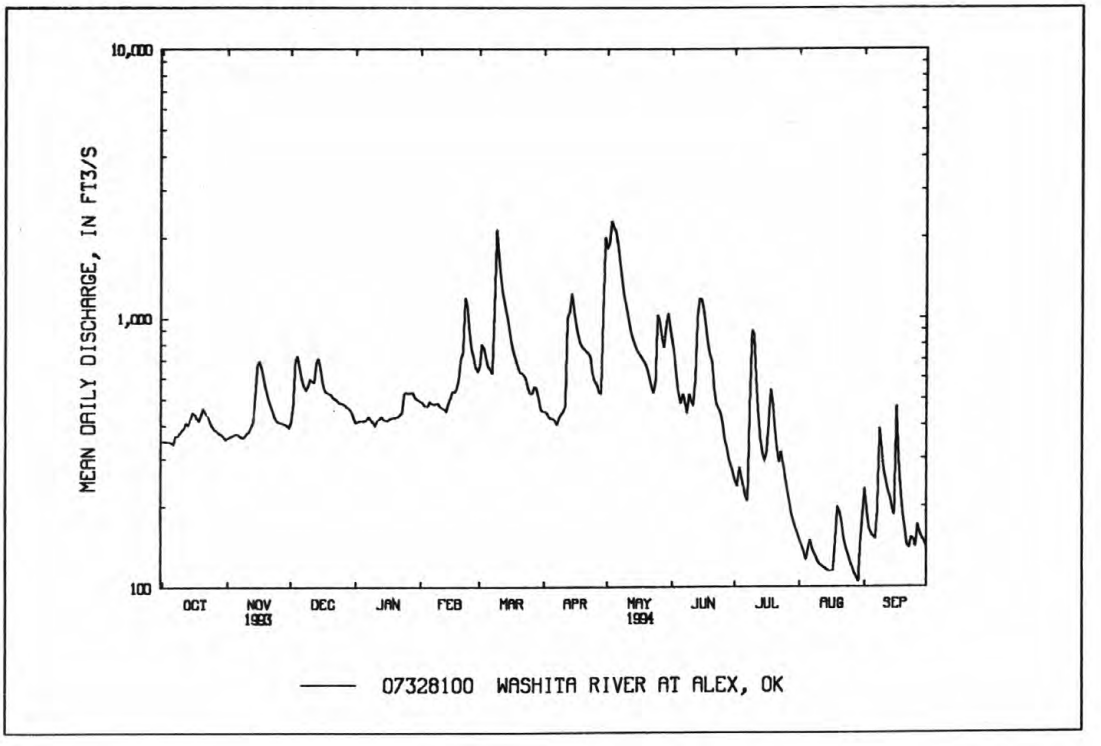
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	508	423	410	350	373	567	592	1238	1299	452	298	453
MAX	4441	1672	2615	1615	1783	3362	2165	6916	5408	1678	1465	1638
(WY)	1984	1993	1993	1993	1993	1990	1993	1993	1989	1975	1975	1991
MIN	61.1	52.9	64.5	77.3	86.1	73.8	23.9	22.9	96.9	13.9	3.88	40.0
(WY)	1979	1971	1968	1971	1967	1971	1971	1971	1967	1970	1972	1972

e Estimated

07328100 WASHITA RIVER AT ALEX, OK--Continued

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1965-94	
ANNUAL TOTAL	595420		192542			
ANNUAL MEAN	1631		528		579	
HIGHEST ANNUAL MEAN					1902	1993
LOWEST ANNUAL MEAN					120	1971
HIGHEST DAILY MEAN	16600	May 13	2300	May 3	22500	Oct 21 1983
LOWEST DAILY MEAN	256	Aug 22	104	Aug 29	.00	[a]Aug 13 1970
ANNUAL SEVEN-DAY MINIMUM	278	Aug 17	116	Aug 11	.01	Aug 12 1970
INSTANTANEOUS PEAK FLOW			2450	Mar 9	23400	Oct 21 1983
INSTANTANEOUS PEAK STAGE			7.50	Mar 9	[b]28.70	Oct 21 1983
ANNUAL RUNOFF (AC-FT)	1181000		381900		419400	
10 PERCENT EXCEEDS	3380		918		1320	
50 PERCENT EXCEEDS	1090		455		256	
90 PERCENT EXCEEDS	375		153		68	

[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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.70	1.5	1.3	.89	e.80	1.3	.58	.72	1.5	.00	.13	.34
2	.73	1.4	2.3	.89	e.80	1.5	.76	1.4	.99	.00	.12	.00
3	.70	1.4	4.5	.81	1.0	1.4	1.4	1.5	.88	.00	.09	.00
4	.70	1.1	2.5	.81	.97	1.3	1.4	1.6	.59	.00	.03	.00
5	.72	1.1	2.0	.81	.97	1.2	1.4	1.6	.57	.00	.00	.04
6	.66	1.1	1.5	.81	.97	.98	1.4	1.4	.81	.00	.02	.00
7	.70	1.0	1.3	.86	.97	.88	1.4	1.3	1.1	.24	.07	.00
8	.78	1.1	1.3	.89	.97	11	1.4	1.3	.77	.39	.01	38
9	.94	1.1	1.3	.89	e.94	10	1.5	.97	.87	1.5	.00	8.7
10	.90	1.3	1.2	.89	e.93	4.1	1.6	.81	.94	.20	.00	.06
11	.89	1.2	1.2	.89	e.95	2.4	1.9	.85	1.0	.08	.00	.05
12	.89	1.6	1.6	.89	.97	1.8	2.1	1.1	.84	.00	.00	e.04
13	.82	1.9	3.9	.89	1.0	1.6	1.9	1.6	.85	.00	.00	e.04
14	.81	1.8	2.4	.89	.97	1.4	1.9	1.4	.61	5.7	.00	e.04
15	1.0	1.7	1.8	.89	.97	1.3	1.9	1.1	.17	2.2	.00	.31
16	1.1	1.7	1.4	.89	1.0	1.0	1.5	.85	.16	1.1	.00	.05
17	1.2	1.8	1.2	.89	1.1	.80	1.3	.76	.05	.66	.63	e.04
18	1.3	1.7	1.1	e.90	1.1	.73	1.3	.55	.00	.51	.13	e.04
19	1.1	1.8	.97	e.90	1.4	.69	.88	.40	.01	.40	.00	e.04
20	1.2	1.4	.97	.97	3.7	.70	.58	.45	.03	.10	.03	e.03
21	1.2	1.4	.97	.97	3.8	.58	.53	.39	.00	.05	.01	e.03
22	1.1	1.4	.97	.97	11	.51	.34	.32	.00	.08	.00	.73
23	1.1	1.4	.97	.81	5.7	.51	.17	.26	.00	.04	.00	.05
24	1.1	1.4	.97	.81	3.3	.56	.47	.25	.00	.11	.00	e.04
25	1.1	1.3	.97	.89	2.6	.53	1.4	.30	.00	.27	.00	e.04
26	1.3	1.3	.97	.89	1.8	.55	1.2	.71	.00	.43	.00	e.04
27	1.4	1.3	.97	.89	1.4	.58	.59	.74	.00	.15	.00	e.03
28	1.4	1.4	.93	.89	1.2	.58	.31	.58	.00	.23	.00	e.03
29	1.5	1.3	.89	.89	---	.58	.23	2.2	.00	.19	.00	e.02
30	1.5	1.3	.89	.89	---	.58	.23	2.4	.00	.21	.00	e.02
31	1.5	---	.89	.79	---	.58	---	1.9	---	.22	11	---
TOTAL	32.04	42.2	46.13	27.24	53.28	52.22	33.57	31.71	12.74	15.06	12.27	48.85
MEAN	1.03	1.41	1.49	.88	1.90	1.68	1.12	1.02	.42	.49	.40	1.63
MAX	1.5	1.9	4.5	.97	11	11	2.1	2.4	1.5	5.7	11	38
MIN	.66	1.0	.89	.79	.80	.51	.17	.25	.00	.00	.00	.00
AC-FT	64	84	91	54	106	104	67	63	25	30	24	97

e Estimated

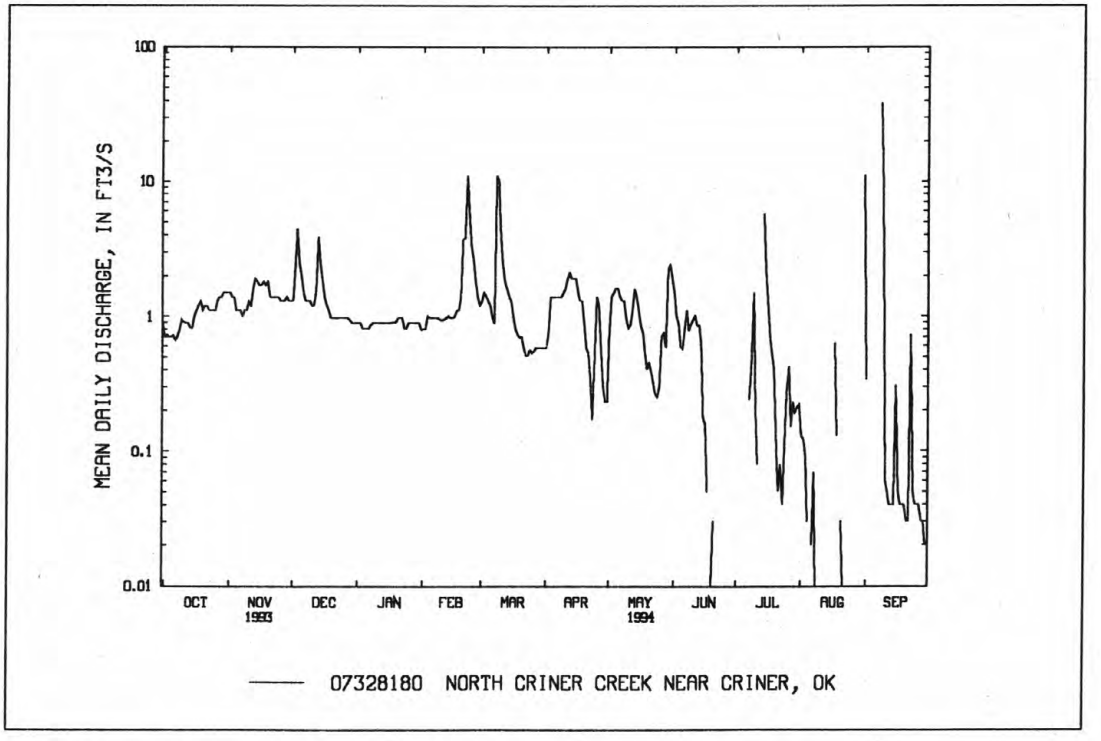
07328180 NORTH CRINER CREEK NEAR CRINER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1.12	2.05	3.88	2.86	3.49	4.68	5.80	10.7	3.70	1.96	1.53	1.44
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	.88	.89	.86	.97	1.02	.42	.44	.40	.58
(WY)	1991	1991	1991	1994	1991	1991	1991	1994	1994	1991	1994	1990

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1990-94	
ANNUAL TOTAL	2101.31		407.31			
ANNUAL MEAN	5.76		1.12		3.60	
HIGHEST ANNUAL MEAN					6.65	1993
LOWEST ANNUAL MEAN					1.08	1991
HIGHEST DAILY MEAN	92	May 23	38	Sep 8	151	May 2 1990
LOWEST DAILY MEAN	.29	Sep 7	[a].00	Jun 18	[a].00	Jun 18 1994
ANNUAL SEVEN-DAY MINIMUM	.32	Sep 1	.00	Jun 21	.00	Jun 21 1994
INSTANTANEOUS PEAK FLOW			208	Sep 8	605	May 23 1993
INSTANTANEOUS PEAK STAGE			7.57	Sep 8	11.24	May 23 1993
ANNUAL RUNOFF (AC-FT)	4170		808		2610	
10 PERCENT EXCEEDS	9.7		1.7		7.2	
50 PERCENT EXCEEDS	3.8		.89		1.3	
90 PERCENT EXCEEDS	.87		.00		.33	

[a]Several days in 1994.



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 fair. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e450	393	461	439	528	e1200	526	2840	1060	275	211	235
2	e440	395	505	450	521	e1000	530	2190	873	261	199	426
3	e430	402	672	466	497	e950	510	2280	751	268	191	336
4	419	402	829	466	507	e880	519	2470	835	288	175	232
5	e430	416	739	479	513	e850	511	2800	677	257	176	209
6	e440	399	662	441	522	e800	503	e3000	964	240	e165	210
7	430	389	594	479	520	e750	489	2500	694	225	e170	216
8	421	393	566	479	518	e2000	462	2170	680	338	e190	220
9	429	395	555	457	e515	e3000	481	1770	681	734	e180	867
10	446	419	556	453	e510	e2500	493	1300	736	1280	e170	486
11	458	414	593	480	512	2380	555	1150	723	816	e165	364
12	475	445	585	482	489	e2000	628	1040	628	569	e160	305
13	462	455	656	489	486	e1700	1130	999	666	426	e155	272
14	473	484	695	486	e490	e1400	1180	900	1010	368	e150	245
15	498	569	699	490	e495	1110	1290	895	1070	337	e145	246
16	495	657	649	500	499	1070	1120	821	1150	346	e140	1020
17	484	696	594	506	487	937	973	801	981	383	e135	390
18	474	698	560	e495	498	846	854	785	812	492	138	311
19	491	639	563	e500	515	802	773	778	718	632	283	222
20	523	594	558	504	577	766	756	722	738	561	260	193
21	514	566	555	506	e800	728	731	689	643	466	237	175
22	493	508	523	491	e1300	695	708	643	561	380	182	235
23	477	462	526	489	e1500	679	676	587	498	343	e160	237
24	452	e460	535	492	e1300	668	647	569	474	336	e150	250
25	434	e455	541	471	1170	618	623	839	463	356	e145	221
26	429	e465	519	479	1140	602	652	1780	425	334	e140	197
27	423	e460	508	509	1050	604	574	1280	369	306	e135	183
28	408	e460	526	520	967	624	556	1080	353	285	e130	174
29	404	e465	523	523	---	615	644	1650	328	262	e125	167
30	386	470	502	510	---	571	2200	2030	295	249	120	162
31	389	---	449	524	---	531	---	1480	---	224	220	---
TOTAL	13977	14425	17998	15055	19426	33876	22294	44838	20856	12637	5302	9006
MEAN	451	481	581	486	694	1093	743	1446	695	408	171	300
MAX	523	698	829	524	1500	3000	2200	3000	1150	1280	283	1020
MIN	386	389	449	439	486	531	462	569	295	224	120	162
AC-FT	27720	28610	35700	29860	38530	67190	44220	88940	41370	25070	10520	17860

e Estimated

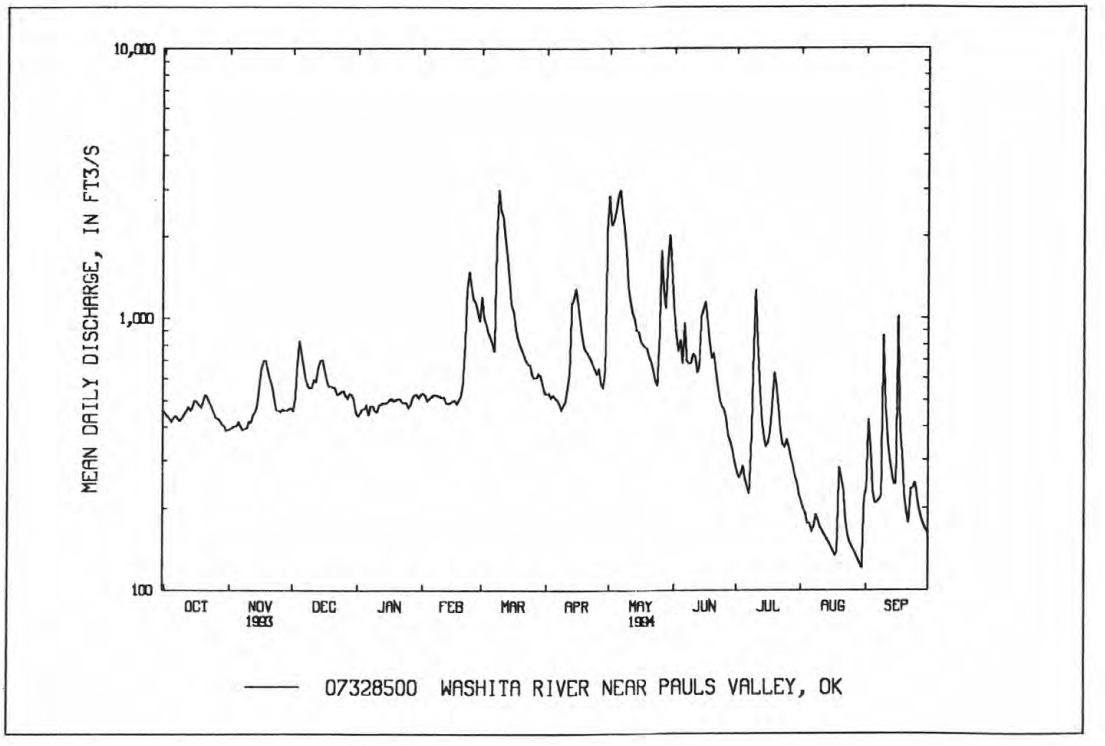
07328500 WASHITA RIVER NEAR PAULS VALLEY, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	874	689	591	547	636	929	894	1813	1791	620	346	533
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1962-94	
ANNUAL TOTAL	797414		229690			
ANNUAL MEAN	2185		629		[a]855	
HIGHEST ANNUAL MEAN					3661	1987
LOWEST ANNUAL MEAN					181	1967
HIGHEST DAILY MEAN	30100	May 10	3000	Mar 9	41700	May 29 1987
LOWEST DAILY MEAN	345	Aug 23	120	Aug 30	[b].00	Jul 21 1964
ANNUAL SEVEN-DAY MINIMUM	382	Aug 17	135	Aug 24	.00	Jul 21 1964
INSTANTANEOUS PEAK FLOW			3410	May 6	43600	May 29 1987
INSTANTANEOUS PEAK STAGE			7.80	May 6	[c]28.72	May 29 1987
ANNUAL RUNOFF (AC-FT)	1582000		455600		619800	
10 PERCENT EXCEEDS	4320		1110		1930	
50 PERCENT EXCEEDS	1480		504		365	
90 PERCENT EXCEEDS	430		214		80	

[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 March 1994 (discontinued).

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.35	e.90	.15	e.90	e.90	2.8	---	---	---	---	---	---
2	e.25	e.80	e.15	e.90	e.90	3.0	---	---	---	---	---	---
3	e.18	e.80	12	e1.1	e.90	e1.2	---	---	---	---	---	---
4	.13	e.70	7.0	e1.0	e.80	e1.1	---	---	---	---	---	---
5	.13	e.70	e5.0	e1.0	e1.1	e1.0	---	---	---	---	---	---
6	e.13	e.60	e4.0	e1.1	e1.0	e.90	---	---	---	---	---	---
7	e.13	e.60	e3.0	e1.0	e1.0	e.80	---	---	---	---	---	---
8	e.12	e.50	e2.0	e1.0	e1.0	59	---	---	---	---	---	---
9	e.12	e.50	e1.0	e.90	e.90	20	---	---	---	---	---	---
10	e.12	e.40	e.90	e.90	e.90	1.8	---	---	---	---	---	---
11	e.11	e.40	e.90	e.90	e.90	e1.2	---	---	---	---	---	---
12	e.11	e2.0	1.0	e.90	e.90	e1.1	---	---	---	---	---	---
13	e.11	e4.0	8.1	e.80	e.80	e1.3	---	---	---	---	---	---
14	e.11	e5.0	e5.0	e.80	e.80	e1.2	---	---	---	---	---	---
15	e.11	e3.0	e4.0	e.80	e.80	e1.1	---	---	---	---	---	---
16	e.10	e5.0	e3.0	e.80	e.80	e1.0	---	---	---	---	---	---
17	e.10	e7.0	e2.0	e1.6	e.70	e1.0	---	---	---	---	---	---
18	e.13	e5.0	e1.0	e1.5	e.70	e.90	---	---	---	---	---	---
19	e.12	e3.0	e.90	1.5	e.70	e.90	---	---	---	---	---	---
20	e9.0	e1.0	e.90	e1.4	e.70	e.90	---	---	---	---	---	---
21	e6.0	e.90	e.90	e1.3	e1.0	e.80	---	---	---	---	---	---
22	e4.0	e.80	e.80	e1.2	20	e.80	---	---	---	---	---	---
23	e3.0	e.80	e.80	e1.6	2.3	e.80	---	---	---	---	---	---
24	e2.0	e.70	e.90	e1.5	e1.3	e.90	---	---	---	---	---	---
25	e1.0	e.70	e.90	e1.4	e1.2	e.80	---	---	---	---	---	---
26	e1.0	e.60	e.80	e1.3	e1.1	e.80	---	---	---	---	---	---
27	e.90	e.50	e.90	e1.2	e1.0	e1.2	---	---	---	---	---	---
28	e.90	e.40	e.80	e1.1	e.90	e1.1	---	---	---	---	---	---
29	e.80	e.30	e.90	e1.0	---	e1.0	---	---	---	---	---	---
30	e1.0	e.20	e.90	e1.0	---	e.90	---	---	---	---	---	---
31	e.90	---	e1.0	e1.0	---	e.80	---	---	---	---	---	---
TOTAL	33.16	47.80	71.60	34.40	46.00	112.10	---	---	---	---	---	---
MEAN	1.07	1.59	2.31	1.11	1.64	3.62	---	---	---	---	---	---
MAX	9.0	7.0	12	1.6	20	59	---	---	---	---	---	---
MIN	.10	.20	.15	.80	.70	.80	---	---	---	---	---	---
AC-FT	66	95	142	68	91	222	---	---	---	---	---	---

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1991 - 1994, BY WATER YEAR (WY)

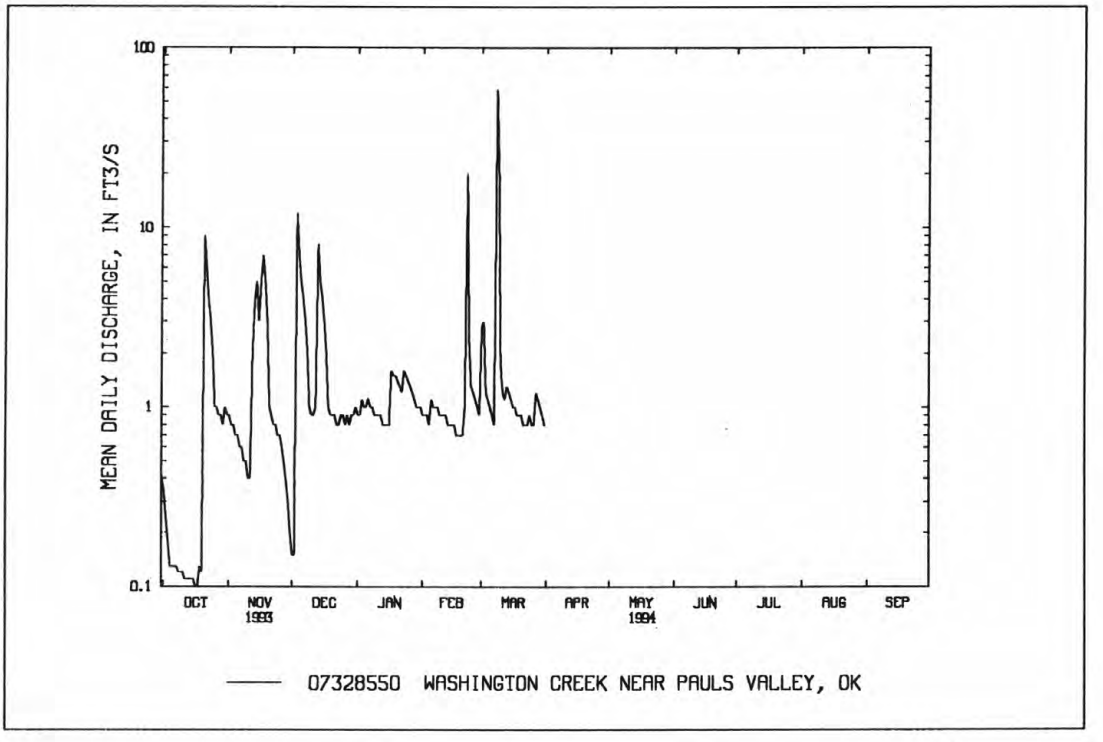
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	.48	8.68	13.0	3.46	8.75	6.57	6.83	12.6	10.4	1.33	.47	1.10
MAX	1.07	23.1	19.0	6.71	23.4	12.6	9.04	16.3	12.4	2.42	.96	2.13
(WY)	1994	1993	1992	1993	1993	1993	1993	1993	1993	1992	1992	1993
MIN	.13	1.37	2.31	1.11	1.48	3.45	4.63	8.98	8.45	.23	.063	.31
(WY)	1993	1992	1994	1994	1992	1992	1992	1992	1992	1991	1991	1992

e Estimated

07328550 WASHINGTON CREEK NEAR PAULS VALLEY, OK--Continued

SUMMARY STATISTICS	1993 CALENDAR YEAR		WATER YEARS 1991-94	
ANNUAL TOTAL	2674.11			
ANNUAL MEAN	7.33		7.41	
HIGHEST ANNUAL MEAN			10.3	1993
LOWEST ANNUAL MEAN			4.51	1992
HIGHEST DAILY MEAN	179	Feb 15	189	Dec 20 1991
LOWEST DAILY MEAN	.10	Oct 16	.00	[a]Aug 26 1991
ANNUAL SEVEN-DAY MINIMUM	.11	Oct 11	.00	Aug 26 1991
INSTANTANEOUS PEAK FLOW			946	Jun 19 1993
INSTANTANEOUS PEAK STAGE			14.54	Jun 19 1993
ANNUAL RUNOFF (AC-FT)	5300		5370	
10 PERCENT EXCEEDS	15		11	
50 PERCENT EXCEEDS	2.3		1.0	
90 PERCENT EXCEEDS	.40		.12	

[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, April to September 1994 (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.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, during period, 1,280 ft^3/s, May 26; gage height 11.68 ft; minimum daily, 2.7 ft^3/s, Aug. 30.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	24	100	94	11	8.6	9.0
2	---	---	---	---	---	---	24	164	70	11	8.7	8.4
3	---	---	---	---	---	---	24	208	59	10	8.5	4.6
4	---	---	---	---	---	---	22	105	53	9.4	8.2	4.6
5	---	---	---	---	---	---	23	75	49	8.7	8.7	4.1
6	---	---	---	---	---	---	22	59	45	8.5	8.4	6.1
7	---	---	---	---	---	---	21	51	43	9.4	7.3	5.2
8	---	---	---	---	---	---	21	45	40	19	6.7	5.0
9	---	---	---	---	---	---	23	40	38	229	6.4	12
10	---	---	---	---	---	---	23	37	38	120	6.2	5.7
11	---	---	---	---	---	---	36	36	41	69	6.3	4.6
12	---	---	---	---	---	---	31	39	68	51	5.9	4.0
13	---	---	---	---	---	---	28	101	58	42	5.2	3.9
14	---	---	---	---	---	---	25	58	47	36	5.4	3.9
15	---	---	---	---	---	---	24	44	40	33	5.1	4.3
16	---	---	---	---	---	---	22	36	37	32	5.0	11
17	---	---	---	---	---	---	20	31	34	32	6.1	14
18	---	---	---	---	---	---	19	27	31	29	20	9.1
19	---	---	---	---	---	---	19	25	29	27	8.5	6.4
20	---	---	---	---	---	---	18	23	28	25	6.0	5.0
21	---	---	---	---	---	---	18	21	26	24	5.4	4.5
22	---	---	---	---	---	26	17	19	23	23	4.8	9.4
23	---	---	---	---	---	26	17	18	20	20	4.7	6.1
24	---	---	---	---	---	26	17	64	18	17	4.5	5.0
25	---	---	---	---	---	24	46	637	17	16	4.2	4.8
26	---	---	---	---	---	26	41	868	15	15	3.8	4.7
27	---	---	---	---	---	27	32	510	14	12	3.5	4.3
28	---	---	---	---	---	25	27	295	13	11	3.0	4.3
29	---	---	---	---	---	24	54	524	12	10	2.9	4.3
30	---	---	---	---	---	23	287	318	12	9.8	2.7	4.0
31	---	---	---	---	---	23	---	141	---	9.1	7.5	---
TOTAL	---	---	---	---	---	---	1025	4719	1112	978.9	198.2	182.3
MEAN	---	---	---	---	---	---	34.2	152	37.1	31.6	6.39	6.08
MAX	---	---	---	---	---	---	287	868	94	229	20	14
MIN	---	---	---	---	---	---	17	18	12	8.5	2.7	3.9
AC-FT	---	---	---	---	---	---	2030	9360	2210	1940	393	362

07329000 RUSH CREEK AT PURDY, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1994, 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	115	179	136	37.8	14.4	37.6
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

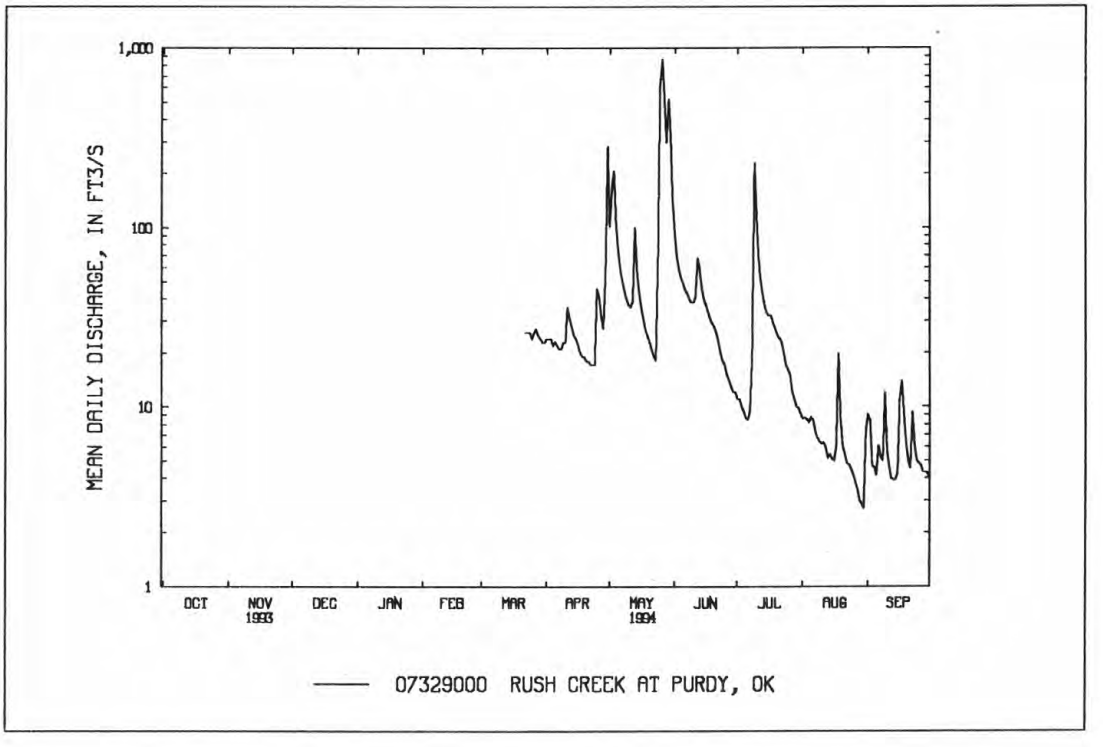
SUMMARY STATISTICS — WATER YEARS 1983-94

ANNUAL MEAN	[a]89.2	
HIGHEST ANNUAL MEAN	196	1987
LOWEST ANNUAL MEAN	20.9	1983
HIGHEST DAILY MEAN	8740	May 28 1987
LOWEST DAILY MEAN	.00	Jul 10 1984
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 18 1984
INSTANTANEOUS PEAK FLOW	[b]17000	May 28 1987
INSTANTANEOUS PEAK STAGE	[c]33.69	May 28 1987
ANNUAL RUNOFF (AC-FT)	64640	
10 PERCENT EXCEEDS	163	
50 PERCENT EXCEEDS	27	
90 PERCENT EXCEEDS	6.3	

[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.



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.

REVISED RECORDS.--WDR OK-94-2: 1993.

GAGE.--Water-stage recorder. Datum of gage is 896.97 ft above sea level.

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

REVISIONS.--Daily values for Sept. 16 through Sept. 30 have been revised as follows:

Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge	Date	Discharge
Sept. 16	420	Sept. 19	207	Sept. 22	123	Sept. 25	79	Sept. 28	45
Sept. 17	312	Sept. 20	171	Sept. 23	107	Sept. 26	67	Sept. 29	42
Sept. 18	255	Sept. 21	144	Sept. 24	91	Sept. 27	56	Sept. 30	34

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e29	18	21	22	e17	362	27	76	107	14	11	9.9
2	e26	18	24	23	e17	180	27	450	83	13	10	9.7
3	e25	18	638	21	e17	99	26	356	67	13	10	9.1
4	e23	18	170	20	e17	76	25	160	58	13	11	9.0
5	e23	18	84	20	e18	63	25	96	50	13	23	8.9
6	e22	18	56	20	e17	55	25	66	56	12	12	8.5
7	e21	18	46	20	17	49	24	53	42	12	13	8.5
8	e20	18	39	19	17	423	24	44	39	16	10	8.2
9	e20	18	37	19	17	351	24	45	34	22	9.4	8.1
10	e19	18	34	19	17	171	24	46	32	25	9.0	8.1
11	e19	18	31	23	17	110	26	40	32	18	8.6	8.1
12	e19	21	38	23	17	86	23	37	32	15	8.5	8.0
13	e20	25	167	21	17	84	23	37	30	15	8.5	7.7
14	e21	27	66	20	18	72	21	35	28	13	8.2	7.7
15	e19	24	48	19	19	62	22	32	27	12	8.3	11
16	e19	46	40	21	17	54	21	29	38	12	8.8	50
17	e19	36	36	25	17	52	20	28	39	12	9.0	15
18	e19	29	32	20	18	49	20	26	38	12	8.8	8.0
19	e20	27	30	19	21	46	20	24	38	12	8.8	6.0
20	e28	24	29	19	25	45	20	23	36	11	9.3	5.3
21	e26	24	27	19	26	43	20	22	35	11	9.5	4.8
22	21	23	26	19	330	38	19	22	32	11	9.4	5.3
23	19	23	26	19	86	35	19	21	22	11	9.0	4.6
24	19	23	25	19	52	33	19	25	18	11	9.0	e4.5
25	18	22	25	19	46	31	18	218	17	11	9.0	e4.5
26	18	22	24	20	39	31	25	1010	17	11	9.0	e4.5
27	18	22	24	20	36	32	19	193	16	11	8.8	e4.4
28	18	22	23	19	43	30	19	132	15	10	9.0	e4.4
29	18	21	23	18	---	29	122	769	14	11	9.0	e4.4
30	18	21	22	18	---	27	231	306	14	11	9.0	e4.4
31	18	---	22	17	---	27	---	163	---	11	11	---
TOTAL	642	680	1933	620	1015	2845	978	4584	1106	405	306.9	260.6
MEAN	20.7	22.7	62.4	20.0	36.2	91.8	32.6	148	36.9	13.1	9.90	8.69
MAX	29	46	638	25	330	423	231	1010	107	25	23	50
MIN	18	18	21	17	17	27	18	21	14	10	8.2	4.4
AC-FT	1270	1350	3830	1230	2010	5640	1940	9090	2190	803	609	517

e Estimated

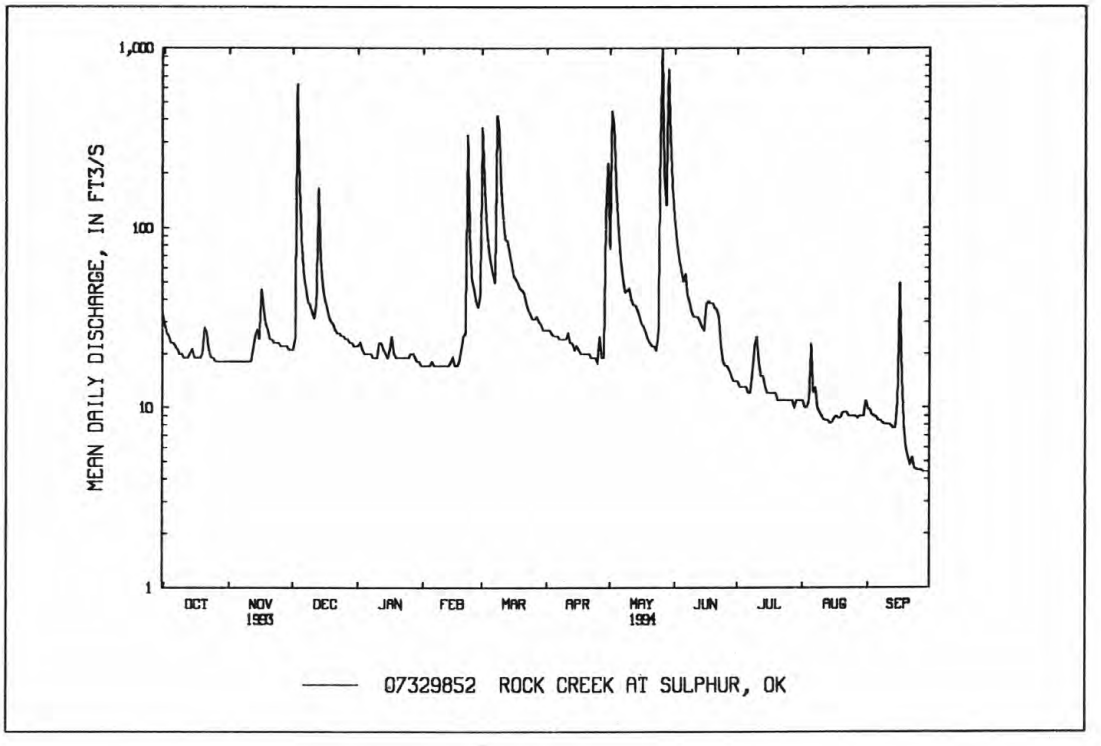
07329852 ROCK CREEK AT SULPHUR, OK

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1990 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	30.4	44.8	90.7	59.7	61.3	149	133	154	96.4	43.8	17.9	87.6
MAX	64.5	115	210	88.7	151	261	390	406	211	121	22.6	213
(WY)	1990	1992	1992	1990	1993	1990	1990	1990	1991	1992	1993	1993
MIN	14.0	20.1	11.9	20.0	30.7	28.0	32.6	32.3	30.9	12.2	9.90	8.69
(WY)	1993	1993	1990	1994	1991	1991	1994	1992	1993	1993	1994	1994

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1990-94	
ANNUAL TOTAL	30026.1		15375.5			
ANNUAL MEAN	82.3		42.1		80.8	
HIGHEST ANNUAL MEAN					129	1990
LOWEST ANNUAL MEAN					42.1	1994
HIGHEST DAILY MEAN	2280	Sep 14	1010	May 26	3450	May 2 1990
LOWEST DAILY MEAN	9.7	Jul 28	[a]4.4	Sep 27	[a]4.4	Sep 27 1994
ANNUAL SEVEN-DAY MINIMUM	10	Jul 27	4.4	Sep 24	4.4	Sep 24 1994
INSTANTANEOUS PEAK FLOW			4760	May 26	10400	Apr 26 1990
INSTANTANEOUS PEAK STAGE			14.41	May 26	19.65	May 26 1994
ANNUAL RUNOFF (AC-FT)	59560		30500		58550	
10 PERCENT EXCEEDS	151		64		151	
50 PERCENT EXCEEDS	36		21		29	
90 PERCENT EXCEEDS	14		9.0		13	

[a]Also occured Sept. 28, 29, 30, 1994.



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 1993 TO SEPTEMBER 1994

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											
29...	1239	4.00	25.0	744	1028	1028	14	5.58	780	9.9	8.2
29...	1242	8.00	25.0	744	1028	1028	14	5.58	779	10.1	8.2
29...	1245	12.0	25.5	744	1028	1028	14	5.58	778	9.8	8.2
29...	1248	16.0	25.5	744	1028	1028	14	5.58	778	10.4	8.2
29...	1253	20.0	25.5	744	1028	1028	14	5.58	776	10.3	8.2
29...	1256	24.0	25.5	744	1028	1028	14	5.58	777	10.0	8.2
29...	1259	28.0	26.0	744	1028	1028	14	5.58	777	10.0	8.2
29...	1301	32.0	26.0	744	1028	1028	14	5.58	772	10.4	8.2

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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)
NOV												
02...	1140	1028	80020	18	864	8.0	11.0	11.5	748	11.0	103	300
FEB												
14...	1015	1028	80020	18	748	8.0	11.5	7.5	750	13.2	112	290
MAY												
16...	1020	1028	80020	29	626	8.3	22.5	19.0	744	12.2	136	270
AUG												
03...	1115	1028	80020	10	830	8.2	28.5	23.0	746	8.2	98	300

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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)
NOV												
02...	23	70	31	63	31	2	3.3	341	0	280	18	100
FEB												
14...	19	75	26	46	25	1	2.4	--	--	--	18	70
MAY												
16...	19	72	23	32	20	0.8	2.1	311	0	255	15	43
AUG												
03...	29	63	35	62	31	2	2.8	332	0	272	17	100

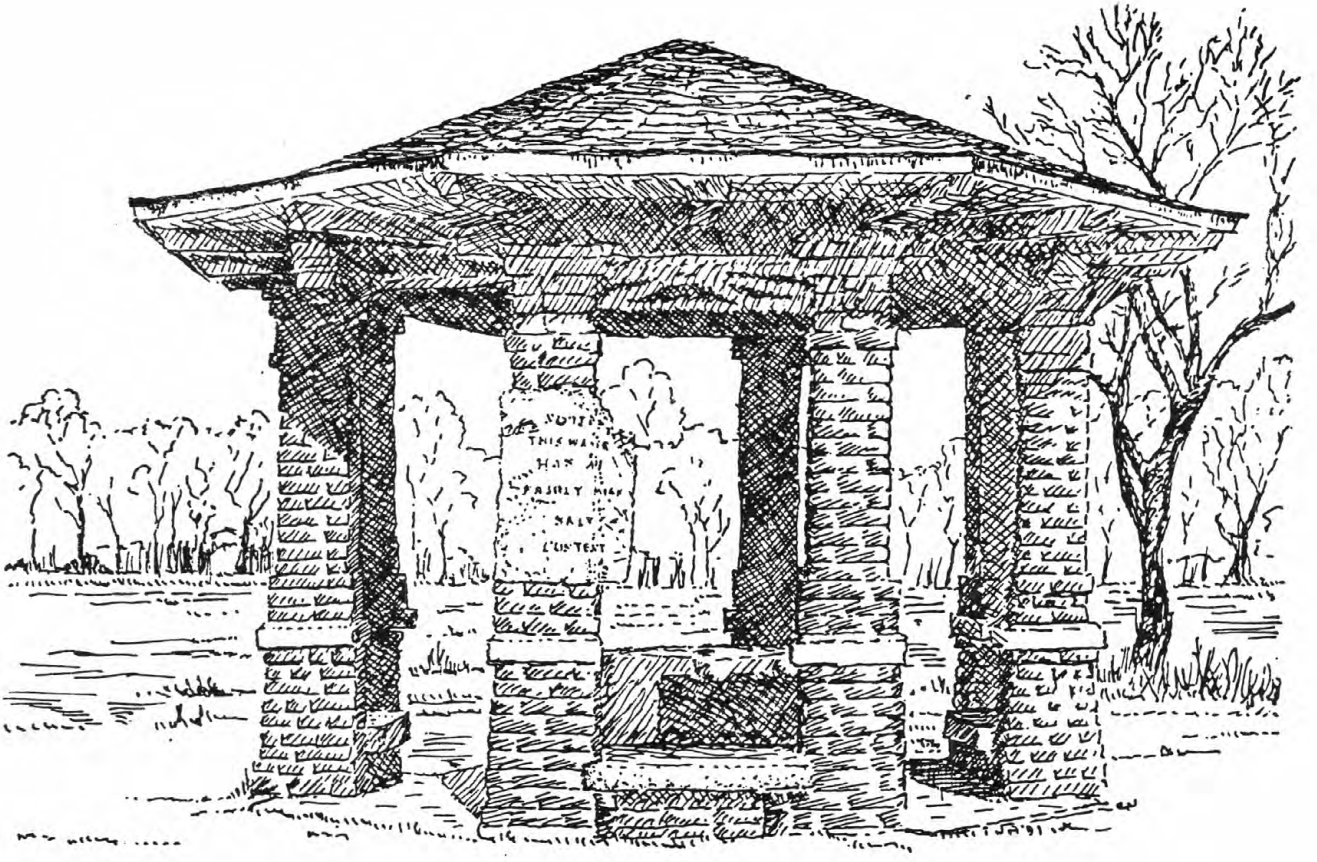
DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NITRATE TOTAL (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 TOTAL (MG/L AS N) (00630)
NOV												
02...	0.20	9.3	462	463	0.63	22.5	--	--	--	0.010	0.03	--
FEB												
14...	0.20	6.1	388	409	0.53	18.9	0.022	0.022	0.10	0.030	0.10	0.052
MAY												
16...	0.20	7.0	305	347	0.41	23.9	--	--	--	<0.010	--	--
AUG												
03...	0.20	9.9	413	454	0.56	11.2	0.099	--	--	<0.010	--	0.099

DATE	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)	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, DISSOLVED (MG/L AS P) (00671)	ARSENIC TOTAL (UG/L AS AS) (01002)	BORON, DISSOLVED (UG/L AS B) (01020)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)
NOV											
02...	<0.050	0.020	0.03	--	<0.20	--	0.010	<0.010	--	120	<1
FEB											
14...	0.052	0.020	0.03	0.18	0.20	0.25	0.040	<0.010	<1	90	<1
MAY											
16...	<0.050	0.020	0.03	0.18	0.20	0.20	0.020	<0.010	--	70	<1
AUG											
03...	0.099	0.030	0.04	--	--	--	--	<0.010	<1	110	<1

07329852 ROCK CREEK AT SULPHUR, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SILVER, DISSOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)
NOV											
02...	--	<1	1	40	6	<1	10	--	--	<1.0	<10
FEB											
14...	<1	--	<1	--	9	<1	17	<0.10	<1	--	<10
MAY											
16...	--	<1	<1	70	<3	<1	14	--	--	<1.0	<10
AUG											
03...	2	--	1	--	10	<1	6	<0.10	<1	--	<10



Pavilion at Mineral Wells Park, Guthrie, Oklahoma

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	821	501	816	644	750	5800	997	6630	9940	401	e295	e230
2	737	478	792	672	750	5440	864	6750	7890	e380	e285	351
3	677	463	7150	679	742	4410	860	15800	6550	e360	272	834
4	632	478	10600	893	756	3440	797	11900	5090	e340	285	490
5	602	471	4570	865	773	2770	758	8760	4890	e330	e270	334
6	569	464	2790	621	767	2370	811	7000	6430	e335	e260	e300
7	536	463	2720	604	770	2080	781	5800	5830	e340	302	e280
8	528	451	2350	589	733	9780	758	4790	3790	e350	334	605
9	541	453	2050	572	767	24800	732	4160	3150	9070	e300	763
10	523	456	1490	586	702	16000	706	3760	2300	12000	e280	1220
11	524	478	1030	610	733	10800	725	3170	2210	6210	e260	889
12	523	504	939	682	742	8270	964	2920	1780	4120	e250	463
13	546	526	1950	652	768	6820	1150	2680	1560	3170	e240	354
14	535	656	2940	638	753	5690	2040	3240	1310	2240	e230	e320
15	530	772	2530	637	761	4710	2160	2460	2200	2570	e220	e300
16	560	933	2250	631	724	4000	2250	2150	2250	2160	e210	2210
17	559	1350	1880	682	703	3520	1890	1880	2300	1550	e200	4970
18	541	1440	1280	696	691	3100	1550	1760	1900	1220	e195	1960
19	605	1250	1110	665	705	2660	1290	1470	1420	1090	e300	1390
20	751	1070	1050	654	793	2100	1250	1340	1200	1080	e290	1070
21	739	981	954	724	902	1960	1190	1190	1160	976	e270	825
22	692	911	868	750	5760	1790	1190	1090	937	801	e260	706
23	630	845	835	778	8020	1660	1150	993	789	668	e240	665
24	591	825	789	805	5830	1450	1130	894	672	551	e230	651
25	581	840	758	874	3940	1310	1090	5760	600	489	e210	572
26	550	884	753	940	2930	1210	1100	25000	554	458	e200	523
27	525	893	690	901	2520	1170	1290	20100	494	412	e190	469
28	513	883	662	932	2620	1100	1110	14300	437	372	e180	423
29	507	856	653	921	---	1160	1450	16800	419	341	e170	389
30	531	839	642	815	---	1150	5520	22100	442	320	e160	361
31	516	---	634	767	---	1080	---	13400	---	e305	250	---
TOTAL	18215	22414	60525	22479	47405	143600	39553	220047	80494	55009	7638	24917
MEAN	588	747	1952	725	1693	4632	1318	7098	2683	1774	246	831
MAX	821	1440	10600	940	8020	24800	5520	25000	9940	12000	334	4970
MIN	507	451	634	572	691	1080	706	894	419	305	160	230
AC-FT	36130	44460	120100	44590	94030	284800	78450	436500	159700	109100	15150	49420

e Estimated

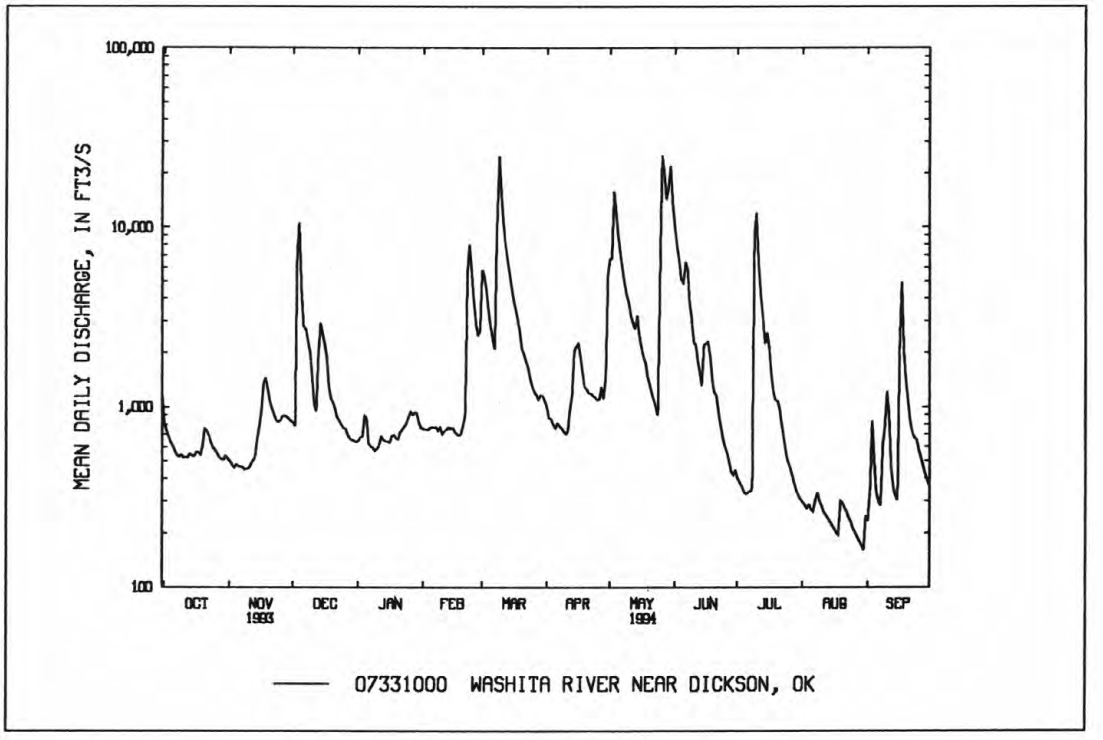
07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1962-93	
ANNUAL TOTAL	1616548		742296			
ANNUAL MEAN	4429		2034		[a]1750	
HIGHEST ANNUAL MEAN					5644	1987
LOWEST ANNUAL MEAN					340	1964
HIGHEST DAILY MEAN	53300	May 10	25000	May 26	94400	May 3 1990
LOWEST DAILY MEAN	387	Aug 22	160	Aug 30	[b].10	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	423	Aug 17	191	Aug 24	.30	Aug 8 1964
INSTANTANEOUS PEAK FLOW			32900	May 26	[c]118000	May 3 1990
INSTANTANEOUS PEAK STAGE			23.30	May 26	45.24	May 30 1987
ANNUAL RUNOFF (AC-FT)	3206000		1472000		1268000	
10 PERCENT EXCEEDS	11900		5470		4010	
50 PERCENT EXCEEDS	2340		811		609	
90 PERCENT EXCEEDS	539		320		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.



RED RIVER BASIN
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 1993 TO SEPTEMBER 1994

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											
29...	1023	15.0	29.5	744	1028	1028	422	9.16	1280	7.6	8.2
29...	1031	30.0	29.5	744	1028	1028	422	9.16	1280	8.1	8.2
29...	1039	45.0	29.5	744	1028	1028	422	9.16	1280	8.4	8.2
29...	1047	60.0	29.5	744	1028	1028	422	9.16	1280	8.0	8.2
29...	1055	75.0	29.5	744	1028	1028	422	9.16	1280	7.9	8.2
29...	1103	90.0	29.5	744	1028	1028	422	9.16	1280	7.9	8.2
29...	1112	105	29.5	744	1028	1028	422	9.16	1280	7.8	8.2
29...	1120	120	29.5	744	1028	1028	422	9.16	1280	7.8	8.1
29...	1125	135	29.5	744	1028	1028	422	9.16	1280	8.0	8.1
29...	1130	150	30.0	744	1028	1028	422	9.16	1290	7.7	8.1

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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											
05...	1300	1028	80020	608	1310	8.0	22.0	23.0	28	754	8.9
DEC											
16...	1000	1028	80020	2340	795	8.1	7.0	6.0	99	750	11.8
APR											
06...	0900	1028	80020	810	1410	8.3	9.0	10.0	9.3	753	9.4
JUN											
08...	1400	1028	80020	3900	598	8.1	32.5	28.0	180	745	7.8
AUG											
03...	1000	1028	80020	272	1330	8.1	29.5	27.0	3.0	746	7.9

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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											
05...	105	33	39	560	380	130	56	67	21	1	4.0
DEC											
16...	97	K13000	1000	340	--	88	28	32	17	0.8	3.1
APR											
06...	85	29	42	580	370	130	62	73	21	1	3.7
JUN											
08...	102	1200	410	240	88	61	20	24	18	0.7	3.9
AUG											
03...	102	K32	26	520	360	110	60	80	25	2	4.3

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											
05...	214	0	176	440	68	0.50	9.5	946	882	1.29	1550
DEC											
16...	--	--	--	180	36	0.30	8.8	529	499	0.72	3340
APR											
06...	250	0	205	450	81	0.50	4.4	996	928	1.35	2180
JUN											
08...	180	0	148	100	26	0.30	7.0	354	333	0.48	3730
AUG											
03...	195	0	160	420	87	0.40	7.0	936	866	1.27	687

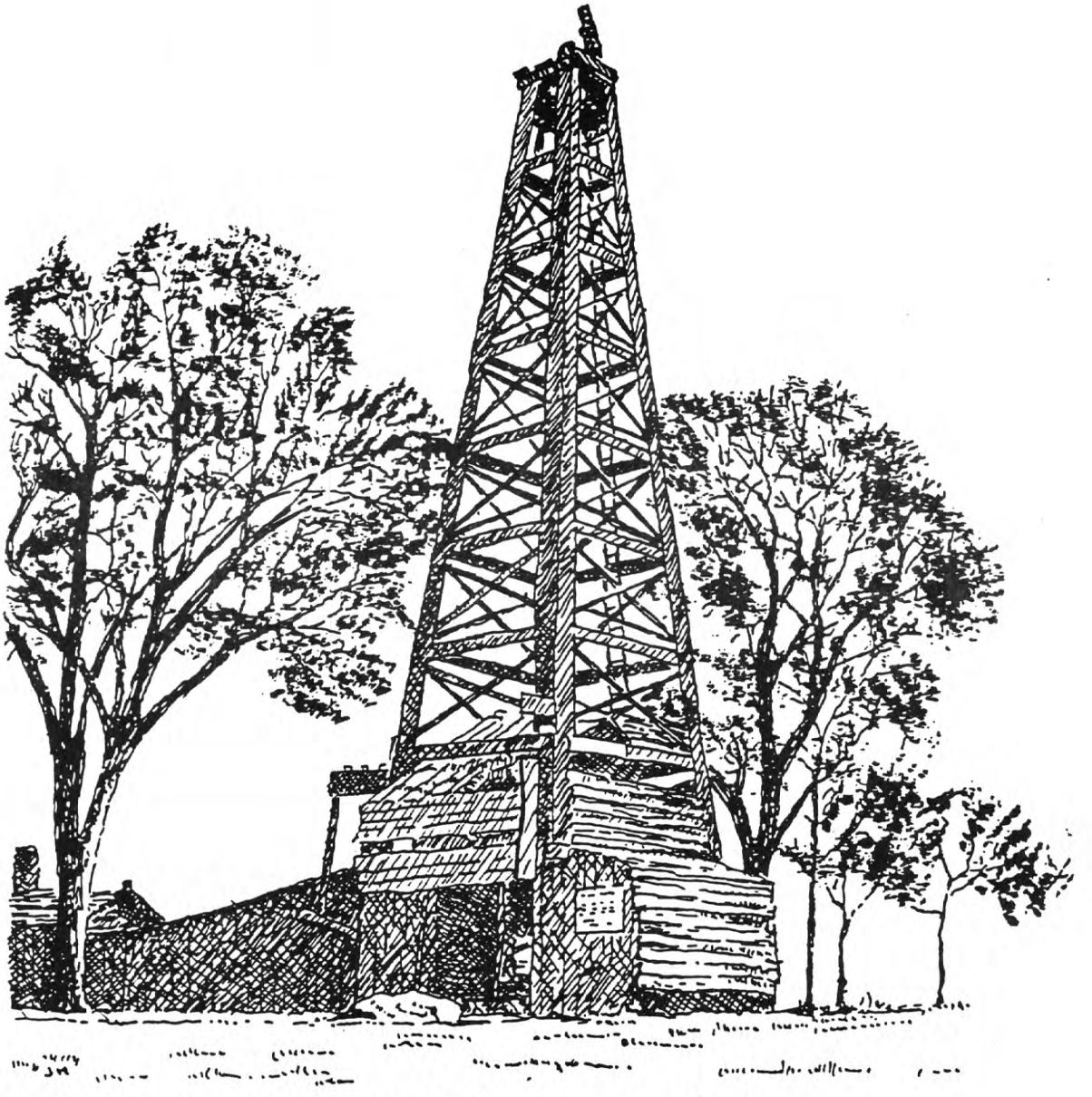
DATE	NITROGEN, NITRATE TOTAL (MG/L AS N) (00620)	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRATE DISSOLVED (MG/L AS NO3) (71851)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NITRITE DISSOLVED (MG/L AS NO2) (71856)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, NO2+NO3 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)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)
OCT											
05...	--	--	--	<0.010	--	--	<0.050	0.040	0.05	0.46	0.50
DEC											
16...	0.470	0.470	2.1	0.020	0.07	0.490	0.490	0.070	0.09	0.73	0.80
APR											
06...	0.150	0.150	0.66	0.020	0.07	0.170	0.170	0.030	0.04	0.67	0.70
JUN											
08...	0.230	0.230	1.0	0.020	0.07	0.250	0.250	0.050	0.06	1.4	1.4
AUG											
03...	--	--	--	<0.010	--	--	<0.050	0.020	0.03	1.6	1.6

07331000 WASHITA RIVER NEAR DICKSON, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	NITROGEN, TOTAL (MG/L AS N) (00600)	PHOSPHORUS TOTAL (MG/L AS P) (00665)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	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)	LITHIUM DISSOLVED (UG/L AS LI) (01130)
OCT										
05...	0.50	0.110	0.020	0.010	0.03	10	210	<3	<3	17
DEC										
16...	1.3	0.230	0.030	0.040	0.12	<10	110	<3	8	8
APR										
06...	0.87	0.150	0.020	<0.010	--	--	--	--	--	--
JUN										
08...	1.7	0.330	0.050	0.040	0.12	<10	110	<3	11	5
AUG										
03...	1.6	0.140	0.010	<0.010	--	<10	210	<3	<3	20

DATE	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										
05...	9	<10	<1	<1	<1.0	1600	7	384	630	66
DEC										
16...	9	<10	2	<1	<1.0	800	<6	545	3440	68
APR										
06...	--	--	--	--	--	--	--	162	354	91
JUN										
08...	1	<10	2	<1	<1.0	540	<6	364	3830	98
AUG										
03...	<1	10	1	<1	<1.0	1600	<6	121	89	89



Oklahoma's first commercial oil well near Bartlesville

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 poor. 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. 4	0400	7,370	21.31	Apr. 30	1300	5,190	18.41
Feb. 22	1900	5,160	18.37	May 3	1300	7,920	21.91
Mar. 1	1500	4,690	17.66	May 27	1100	4,100	16.65

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	55	41	60	157	141	3890	158	4400	474	120	98	143
2	55	41	60	156	136	4010	158	2100	361	111	83	85
3	55	42	3080	156	135	1430	157	7360	310	110	78	72
4	54	45	7010	155	134	627	154	5130	279	102	77	101
5	50	45	3630	151	132	445	147	1050	259	100	88	73
6	48	42	531	151	130	372	148	528	239	160	111	64
7	46	41	370	147	128	327	144	427	223	124	361	61
8	46	39	313	144	127	311	138	382	212	130	421	63
9	46	39	289	141	132	990	134	355	203	262	134	76
10	94	39	275	141	142	1020	134	398	714	344	99	214
11	53	39	255	171	e270	481	134	426	337	433	86	107
12	45	39	235	195	e235	359	137	364	211	282	80	81
13	44	40	475	163	e192	318	147	407	192	667	76	66
14	45	787	416	154	e168	314	132	428	179	209	73	61
15	45	356	320	146	e150	297	122	347	171	198	72	59
16	43	609	261	141	e137	269	115	291	210	147	72	60
17	40	1320	236	378	e129	249	109	261	193	121	71	539
18	60	398	221	280	e122	243	106	239	168	112	68	367
19	234	192	210	186	e118	231	101	220	156	103	67	154
20	1560	123	205	164	e117	219	105	206	149	98	73	103
21	569	93	198	158	e362	210	107	197	146	95	103	87
22	161	80	191	153	e1300	199	105	188	140	198	75	79
23	90	74	186	152	3450	193	100	182	137	123	71	77
24	68	69	180	157	702	192	98	175	137	101	69	76
25	60	65	176	174	364	191	96	185	136	93	64	72
26	55	65	173	184	277	186	116	2240	125	89	62	70
27	50	63	172	239	234	182	1020	3550	121	89	59	67
28	46	63	168	203	258	181	945	782	118	87	58	67
29	45	63	164	165	---	174	1280	1750	115	82	56	65
30	43	62	160	152	---	165	5060	3410	116	82	55	65
31	43	---	158	145	---	161	---	1340	---	104	90	---
TOTAL	3948	5014	20378	5359	9922	18436	11607	39318	6531	5076	3050	3274
MEAN	127	167	657	173	354	595	387	1268	218	164	98.4	109
MAX	1560	1320	7010	378	3450	4010	5060	7360	714	667	421	539
MIN	40	39	60	141	117	161	96	175	115	82	55	59
AC-FT	7830	9950	40420	10630	19680	36570	23020	77990	12950	10070	6050	6490

e Estimated

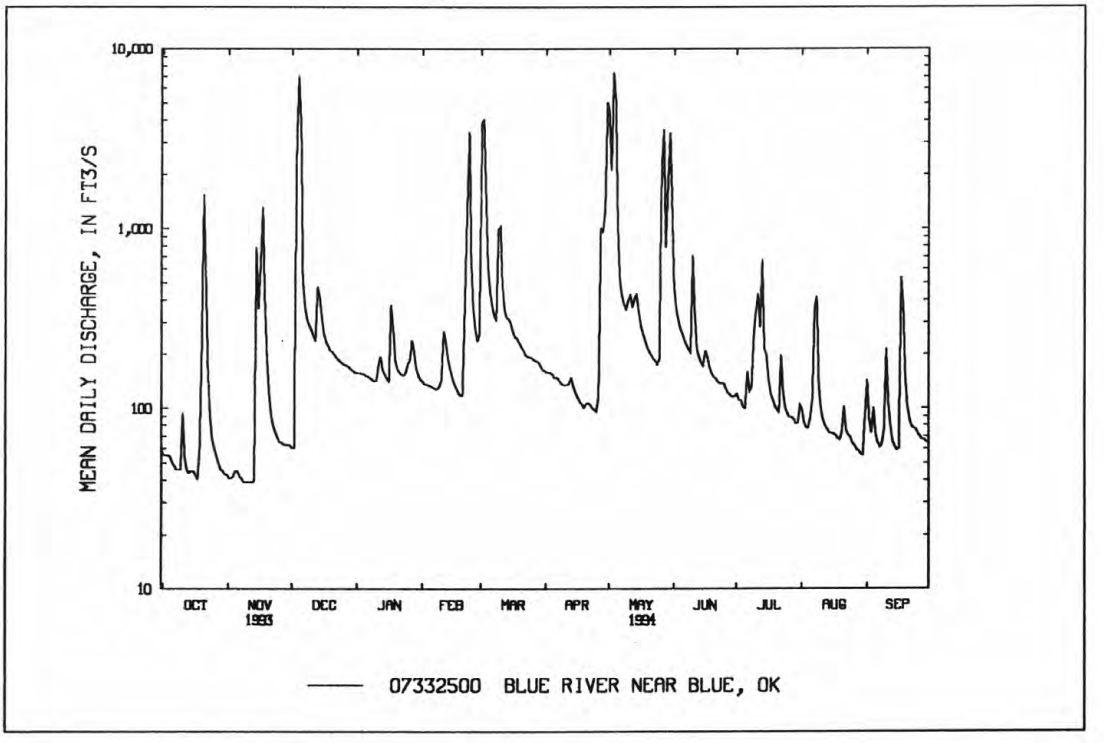
07332500 BLUE RIVER NEAR BLUE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	246	247	253	221	380	458	583	652	448	154	77.0	162
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1936-94	
ANNUAL TOTAL	214656		131913			
ANNUAL MEAN	588		361		323	
HIGHEST ANNUAL MEAN					972	1945
LOWEST ANNUAL MEAN					30.8	1956
HIGHEST DAILY MEAN	21500	May 10	7360	May 3	45500	Oct 14 1981
LOWEST DAILY MEAN	27	Aug 23	39	Nov 8	[a].00	Aug 3 1936
ANNUAL SEVEN-DAY MINIMUM	29	Aug 17	39	Nov 7	.00	Sep 19 1956
INSTANTANEOUS PEAK FLOW			7920	May 3	65200	Oct 14 1981
INSTANTANEOUS PEAK STAGE			21.91	May 3	[b]44.20	Oct 14 1981
ANNUAL RUNOFF (AC-FT)	425800		261600		234300	
10 PERCENT EXCEEDS	1190		529		539	
50 PERCENT EXCEEDS	224		147		87	
90 PERCENT EXCEEDS	40		56		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.--Records fair. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	258	40	e105	60	183	8530	136	11100	1450	22	33	49
2	106	39	e113	56	148	12000	119	9800	e950	22	40	792
3	72	42	e165	54	234	11100	110	14300	e600	21	31	1070
4	62	44	e300	57	367	7740	648	11400	e495	23	24	393
5	54	40	e1040	57	358	3700	1300	9410	e360	22	24	213
6	53	37	e3700	54	352	2500	477	6570	e278	20	182	134
7	59	35	e6400	50	230	2100	271	3000	e230	26	839	93
8	59	34	e8000	e51	83	1940	199	2360	239	31	2590	74
9	74	34	e5000	e53	e84	3910	163	2180	219	32	3320	288
10	59	35	1710	e67	e93	5780	142	2070	95	36	1070	304
11	50	35	e1700	e72	e119	6070	130	1950	106	69	300	130
12	41	37	e2100	71	e174	3520	132	1710	431	177	189	81
13	38	39	e2050	66	e292	1470	130	1190	235	311	134	61
14	37	1180	1920	61	e305	1220	434	840	136	179	105	51
15	36	2150	1580	66	e245	1100	245	798	94	393	86	44
16	34	2740	1390	68	e192	911	169	732	80	322	75	46
17	32	3430	938	812	e150	666	133	487	70	129	71	64
18	177	2830	541	395	e138	590	108	449	60	110	64	69
19	659	1650	489	254	e145	550	95	429	56	88	80	164
20	2190	1070	453	401	e180	385	87	331	53	58	88	112
21	1340	901	337	383	e1050	230	80	107	51	43	375	86
22	848	819	136	361	8320	220	74	92	57	35	316	67
23	562	773	132	361	7770	179	71	84	49	30	159	55
24	444	581	111	265	7550	567	65	78	47	26	111	48
25	389	146	97	184	5150	386	63	75	52	23	85	43
26	355	e126	93	295	2210	204	148	2610	57	22	69	39
27	335	e117	85	1190	1640	173	434	1550	39	20	60	37
28	323	e112	74	1440	1590	184	1020	1030	31	18	53	36
29	209	e110	73	640	---	187	1680	2110	27	16	48	35
30	51	e108	71	357	---	186	10600	3870	24	21	44	34
31	44	---	63	242	---	163	---	2360	---	22	44	---
TOTAL	9050	19334	40966	8543	39352	78461	19463	95072	6671	2367	10709	4712
MEAN	292	644	1321	276	1405	2531	649	3067	222	76.4	345	157
MAX	2190	3430	8000	1440	8320	12000	10600	14300	1450	393	3320	1070
MIN	32	34	63	50	83	163	63	75	24	16	24	34
AC-FT	17950	38350	81260	16950	78050	155600	38600	188600	13230	4690	21240	9350

e Estimated

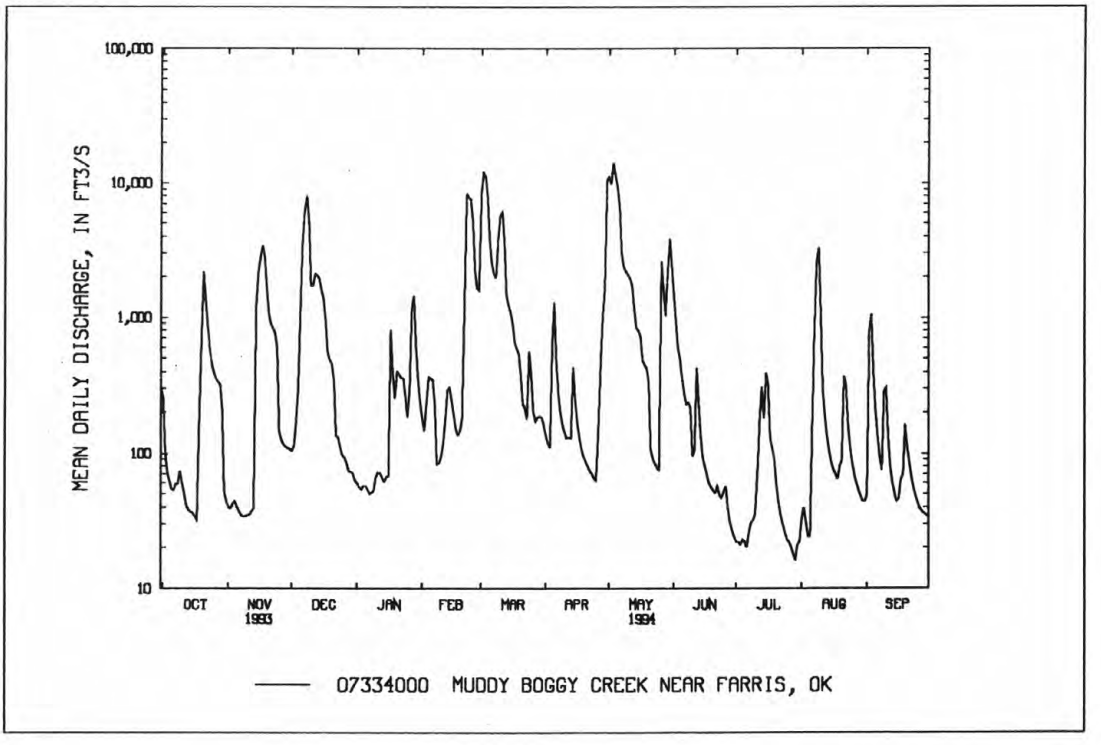
07334000 MUDDY BOGGY CREEK NEAR FARRIS, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1988 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	312	762	1967	1039	1370	2156	1935	3087	1570	388	326	570
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	276	124	1020	484	34.7	25.0	26.8	15.3	13.8
(WY)	1989	1990	1990	1994	1991	1991	1988	1988	1988	1988	1988	1988

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1988-94	
ANNUAL TOTAL	537974		334700			
ANNUAL MEAN	1474		917		[a]1290	
HIGHEST ANNUAL MEAN					2145	1990
LOWEST ANNUAL MEAN					682	1988
HIGHEST DAILY MEAN	18000	May 10	14300	May 3	45700	May 5 1990
LOWEST DAILY MEAN	16	Aug 23	16	Jul 29	9.9	Nov 9 1988
ANNUAL SEVEN-DAY MINIMUM	17	Aug 21	20	Jul 25	[b]11	Oct 18 1991
INSTANTANEOUS PEAK FLOW			14800	May 3	[c]49800	May 5 1990
INSTANTANEOUS PEAK STAGE			37.23	May 3	[d]48.73	May 5 1990
ANNUAL RUNOFF (AC-FT)	1067000		663900		934800	
10 PERCENT EXCEEDS	3730		2200		3170	
50 PERCENT EXCEEDS	562		148		252	
90 PERCENT EXCEEDS	23		36		21	

[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.

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: 35 years, 8.77 ft^3/s. Combined spring flow: 4 years, 22.2 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, 23 ft^3/s, June 4-6; minimum daily discharge, 15 ft^3/s, Aug. 25, Sept. 13.

DISCHARGE, CUBIC FEET PER SECOND, CREEK FLOW, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	13	12	15	14	15	16	15	14	9.4	9.8	8.0
2	15	14	12	15	13	15	16	15	14	9.4	9.5	8.1
3	15	13	14	15	13	15	16	16	15	9.4	9.4	8.1
4	15	14	14	15	13	16	16	16	15	9.4	9.5	8.0
5	15	13	14	15	13	16	16	16	15	9.4	9.4	8.0
6	14	13	14	15	13	16	16	16	15	9.9	9.4	8.0
7	14	11	14	16	14	16	16	16	14	10	9.4	9.0
8	14	12	14	14	14	16	16	16	14	11	9.4	9.0
9	13	12	15	14	14	16	16	16	14	10	9.2	9.0
10	13	12	15	15	14	16	16	16	14	10	9.9	8.9
11	13	12	15	16	14	17	16	16	14	10	13	9.2
12	13	12	15	16	14	17	16	16	14	10	12	10
13	13	12	15	15	14	17	15	16	14	10	8.4	10
14	14	12	15	14	14	17	15	16	14	13	8.3	10
15	15	12	15	14	14	17	15	16	14	14	8.6	9.7
16	15	12	15	14	14	17	15	16	14	11	10	9.5
17	15	12	15	14	14	17	15	16	14	11	11	9.5
18	15	12	15	14	14	17	17	16	14	11	10	9.4
19	15	12	15	14	14	17	15	16	14	11	9.4	9.4
20	15	12	15	14	14	17	15	16	14	11	8.9	9.4
21	14	12	15	14	14	17	15	16	14	11	8.6	9.4
22	13	12	15	14	14	17	15	16	14	11	8.6	9.4
23	13	12	15	14	14	17	16	16	14	11	8.6	9.4
24	13	12	15	14	14	17	15	16	14	11	7.6	9.4
25	13	12	15	14	14	17	15	15	13	11	3.1	9.4
26	13	12	15	15	14	16	15	14	13	14	5.7	9.4
27	13	12	15	15	14	16	15	14	12	11	7.9	9.4
28	13	12	15	15	14	16	15	14	10	10	8.0	9.4
29	13	12	15	15	---	16	15	14	9.4	9.8	7.9	9.4
30	12	12	15	15	---	16	15	14	9.4	9.8	7.9	9.4
31	12	---	15	14	---	16	---	14	---	9.8	7.9	---
TOTAL	429	367	453	453	387	508	465	481	406.8	329.3	276.3	274.2
MEAN	13.8	12.2	14.6	14.6	13.8	16.4	15.5	15.5	13.6	10.6	8.91	9.14
MAX	16	14	15	16	14	17	17	16	15	14	13	10
MIN	12	11	12	14	13	15	15	14	9.4	9.4	3.1	8.0
AC-FT	851	728	899	899	768	1010	922	954	807	653	548	544

CAL YR 1993	TOTAL 5773.0	MEAN 15.8	MAX 23	MIN 7.4	AC-FT 11450
WTR YR 1994	TOTAL 4829.6	MEAN 13.2	MAX 17	MIN 3.1	AC-FT 9580

07334200 BYRDS MILL SPRING NEAR FITTSTOWN, OK--Continued

DISCHARGE, CUBIC FEET PER SECOND, COMBINED SPRING FLOW, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	18	18	20	19	20	22	21	22	19	18	16
2	20	18	17	20	19	20	21	21	21	19	18	16
3	20	17	19	20	19	20	22	22	22	19	17	16
4	20	18	19	20	19	21	21	21	23	19	17	16
5	20	17	19	20	19	21	22	21	23	19	17	16
6	20	18	19	20	18	21	22	21	23	19	17	16
7	20	16	19	20	19	21	22	21	22	19	17	16
8	20	17	19	20	19	21	22	21	22	20	17	16
9	19	17	21	20	19	21	22	21	22	19	17	16
10	19	17	20	20	19	21	22	21	22	19	17	16
11	19	17	20	19	19	22	22	21	22	19	17	16
12	19	17	20	20	19	22	22	21	22	19	17	15
13	19	17	20	20	19	22	21	21	22	19	17	15
14	19	17	20	19	19	22	21	21	22	19	17	15
15	19	17	20	19	19	22	21	21	22	19	17	16
16	19	17	20	19	19	22	21	21	22	19	17	16
17	19	17	20	19	19	22	21	21	22	19	16	16
18	19	17	20	19	19	22	21	21	22	19	16	16
19	19	17	20	19	19	22	21	21	22	19	17	16
20	19	17	20	19	19	22	21	22	22	19	17	16
21	19	17	20	19	19	22	22	22	22	19	17	16
22	18	17	20	19	19	22	22	22	22	19	17	16
23	18	17	20	19	19	22	21	21	22	19	17	16
24	18	17	21	19	19	22	21	22	22	19	16	16
25	18	17	20	19	19	22	21	22	21	18	15	16
26	18	17	20	20	19	21	20	21	21	19	16	16
27	18	17	20	20	19	22	20	21	20	18	16	16
28	18	17	20	20	19	21	20	21	19	18	16	16
29	18	17	20	20	---	22	20	21	19	18	16	16
30	17	17	20	19	---	22	20	21	19	18	16	16
31	17	---	20	18	---	22	---	21	---	18	16	---
TOTAL	586	513	611	604	531	667	637	657	649	584	518	477
MEAN	18.9	17.1	19.7	19.5	19.0	21.5	21.2	21.2	21.6	18.8	16.7	15.9
MAX	21	18	21	20	19	22	22	22	23	20	18	16
MIN	17	16	17	18	18	20	20	21	19	18	15	15
AC-FT	1160	1020	1210	1200	1050	1320	1260	1300	1290	1160	1030	946

CAL YR 1993	TOTAL 8159	MEAN 22.4	MAX 29	MIN 16	AC-FT 16180
WTR YR 1994	TOTAL 7034	MEAN 19.3	MAX 23	MIN 15	AC-FT 13950

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.--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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	653	198	389	341	666	6970	502	7590	7520	147	167	440
2	519	185	371	333	557	8400	456	9880	6550	149	166	771
3	391	187	3880	324	490	10900	420	14900	4190	156	152	1130
4	281	201	8170	319	497	14000	393	21000	1890	157	145	1420
5	240	199	11100	315	642	15300	963	23700	1570	138	175	804
6	216	188	13700	312	637	14200	1550	22800	1290	128	198	467
7	197	181	14700	305	619	11700	851	20500	964	132	597	307
8	190	171	14400	292	539	8600	590	17200	798	168	3300	230
9	190	166	12700	280	386	7460	486	13800	623	166	5320	222
10	202	164	9820	284	392	7220	442	10700	631	181	4760	385
11	207	164	6240	288	438	7620	467	7910	537	328	1870	505
12	189	164	3230	327	532	8160	651	5340	514	945	604	288
13	180	173	3460	356	745	8170	520	4450	658	e1680	366	193
14	172	230	3370	354	1010	5590	417	3760	533	e2280	262	157
15	166	1880	3080	334	1020	2990	647	2350	393	1640	205	138
16	161	4350	2680	320	810	2410	561	1850	327	1400	174	125
17	154	5590	2280	523	630	1970	436	1510	297	794	155	117
18	171	6140	1650	1520	525	1580	372	1120	278	427	142	181
19	634	5730	1160	1170	470	1390	325	960	254	313	131	408
20	2780	3720	1030	739	711	1260	296	870	235	272	172	383
21	4200	2140	940	762	1570	1040	276	744	225	219	395	295
22	3120	1620	809	725	5520	802	262	507	235	213	640	216
23	1820	1370	590	698	7740	734	257	414	226	188	782	176
24	1110	1220	523	712	9020	718	254	373	225	163	498	152
25	803	971	494	696	10600	1900	241	348	248	148	302	135
26	650	591	454	738	11600	1540	239	2540	221	138	215	123
27	557	474	430	936	10500	911	866	5960	216	132	170	116
28	499	453	406	1940	7600	709	2460	5690	199	126	143	112
29	461	438	381	2170	---	630	2600	5440	173	121	124	108
30	401	417	359	1310	---	579	4800	6640	157	127	112	102
31	248	---	349	859	---	552	---	7520	---	145	114	---
TOTAL	21762	39675	123145	20582	76466	156005	23600	228366	32177	13321	22556	10206
MEAN	702	1322	3972	664	2731	5032	787	7367	1073	430	728	340
MAX	4200	6140	14700	2170	11600	15300	4800	23700	7520	2280	5320	1420
MIN	154	164	349	280	386	552	239	348	157	121	112	102
AC-FT	43160	78700	244300	40820	151700	309400	46810	453000	63820	26420	44740	20240

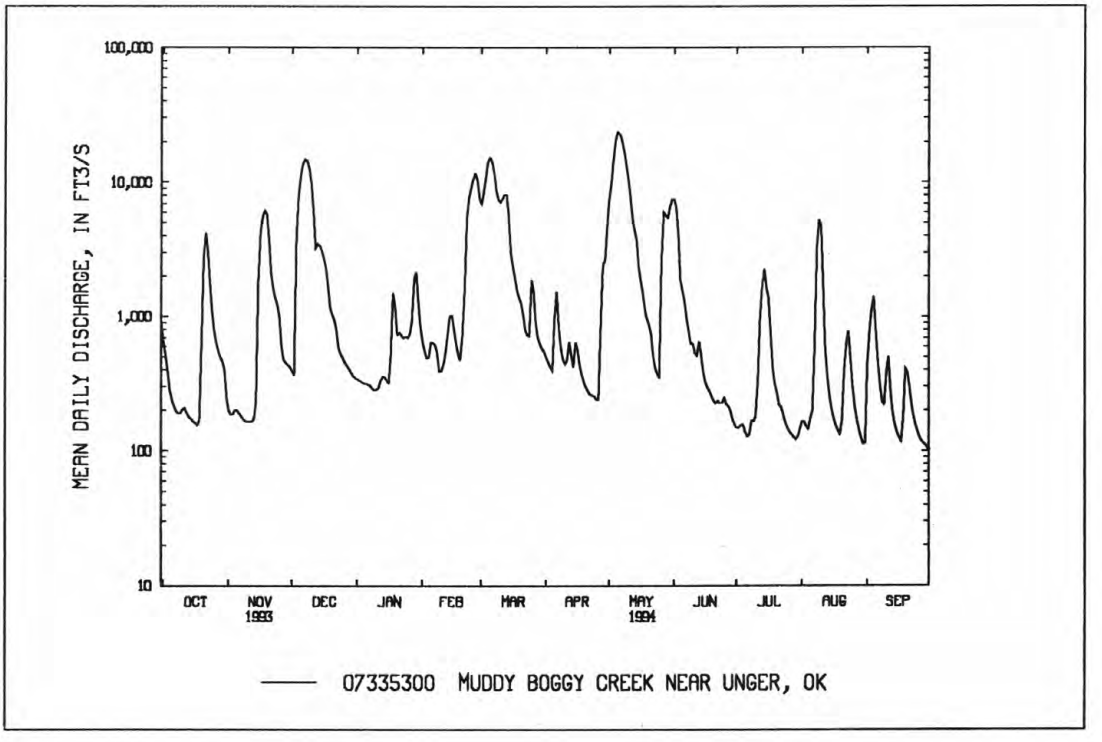
e Estimated

07335300 MUDDY BOGGY CREEK NEAR UNGER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1983 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	776	1705	3100	1961	2915	3981	3745	5755	2960	708	379	764
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1983-94	
ANNUAL TOTAL	1224408		767861			
ANNUAL MEAN	3355		2104		2393	
HIGHEST ANNUAL MEAN					4951	1990
LOWEST ANNUAL MEAN					520	1984
HIGHEST DAILY MEAN	36800	May 12	23700	May 5	76000	May 6 1990
LOWEST DAILY MEAN	54	Aug 23	102	Sep 30	1.8	Sep 8 1984
ANNUAL SEVEN-DAY MINIMUM	64	Aug 17	121	Sep 24	2.6	Sep 3 1984
INSTANTANEOUS PEAK FLOW			24100	May 5	76700	May 6 1990
INSTANTANEOUS PEAK STAGE			42.79	May 5	55.27	May 6 1990
ANNUAL RUNOFF (AC-FT)	2429000		1523000		1734000	
10 PERCENT EXCEEDS	8810		7480		7230	
50 PERCENT EXCEEDS	1500		519		562	
90 PERCENT EXCEEDS	86		159		49	



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.4 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4590	6130	2590	5830	5850	20300	10100	23700	38100	7230	7380	5290
2	4330	6340	2100	4060	4970	29400	8370	24500	33500	7320	6960	6330
3	3420	6000	8690	3400	4960	30800	6030	31500	27600	5360	6820	6070
4	3410	3830	34300	3430	4970	28000	4670	38400	22300	4900	6690	5700
5	2920	2690	34700	4230	5000	26900	4060	36800	15900	4870	6780	6020
6	2860	2160	25000	3720	3970	26700	5040	33800	12100	4980	7020	4850
7	2800	2950	19200	5510	3300	25400	5170	32700	11600	4400	7120	3390
8	2590	5850	22200	6290	3450	23600	4670	32300	13400	4480	13400	2270
9	2550	6170	22400	6410	3380	28600	4510	29700	13000	4940	20000	1740
10	2880	4620	20500	6210	2800	30000	4040	27300	13900	5710	12700	2800
11	3380	2660	17800	6320	5670	e28200	3530	25000	20900	6690	8840	5480
12	3480	2230	11900	5680	8490	e26500	4090	22700	12500	13300	6450	5160
13	3600	2270	8210	5760	7450	e25000	4400	21400	8360	28300	5710	4520
14	3770	2130	8440	5890	5720	22700	3830	26100	8450	29800	5430	4380
15	3860	2340	8210	5450	5440	19600	3520	24600	7770	24100	5270	4340
16	3500	5560	11700	5140	5060	18300	3650	19100	7420	23800	5260	4290
17	3440	6960	12600	5560	4880	15900	3450	16000	5200	21700	4930	4190
18	3100	8820	12000	6060	4680	15000	3510	12800	5080	16600	4420	4480
19	4490	7860	10500	7240	4570	14500	3200	9990	5640	12500	4890	4940
20	19700	5840	9590	6730	4860	14200	3180	9400	6170	10100	5060	4330
21	25500	3840	9330	6420	5570	13900	3090	8800	6010	7540	6220	3780
22	14400	3400	9110	6370	10500	13500	3070	6670	5890	8210	6530	3690
23	8860	2980	7610	5980	22100	13400	3030	5550	4950	7370	6010	3690
24	7030	2680	7210	5580	24200	13200	2940	5070	4680	5990	5340	2650
25	5570	2430	7120	4460	22300	13700	2970	5160	5030	5690	4490	1610
26	5030	2160	7030	4550	20900	14300	3180	6280	5430	5400	4710	1990
27	4810	2950	7040	4340	20700	13800	4510	10900	7120	5170	4710	1280
28	4390	4060	6840	4210	19800	13400	7440	18400	7910	6070	4640	1550
29	4170	4380	6560	4670	---	13100	7580	25700	7330	6760	4730	3610
30	3870	3460	6570	5110	---	12500	11800	37000	7280	6780	4560	4390
31	4520	---	6120	5550	---	11700	---	40700	---	7120	4460	---
TOTAL	172820	125750	383170	166160	245540	616100	142630	668020	350520	313180	207530	118810
MEAN	5575	4192	12360	5360	8769	19870	4754	21550	11680	10100	6695	3960
MAX	25500	8820	34700	7240	24200	30800	11800	40700	38100	29800	20000	6330
MIN	2550	2130	2100	3400	2800	11700	2940	5070	4680	4400	4420	1280
AC-FT	342800	249400	760000	329600	487000	1222000	282900	1325000	695300	621200	411600	235700

e Estimated

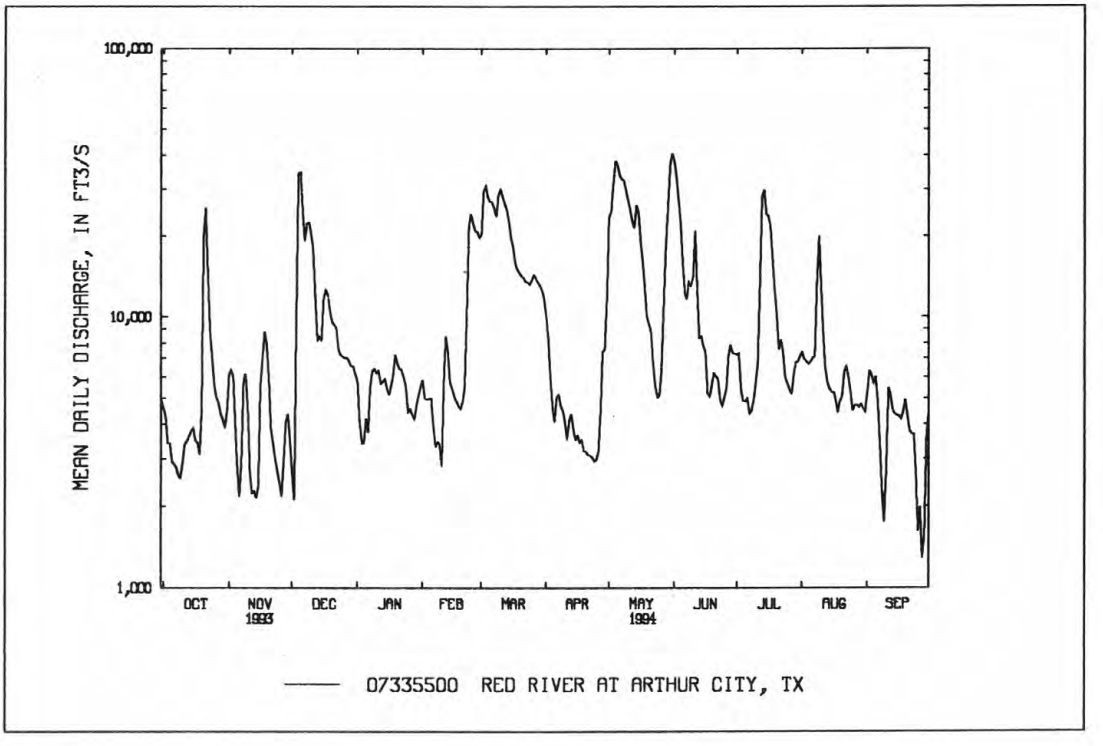
07335500 RED RIVER AT ARTHUR CITY, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	7091	7033	6969	6484	8262	10260	11290	17100	18460	7823	4632	4672
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1945-94	
ANNUAL TOTAL	6394620		3510230			
ANNUAL MEAN	17520		9617		[a]9167	
HIGHEST ANNUAL MEAN					23290	1990
LOWEST ANNUAL MEAN					2754	1964
HIGHEST DAILY MEAN	87600	May 10	40700	May 31	269000	May 4 1990
LOWEST DAILY MEAN	2100	Dec 2	1280	Sep 27	134	[b]Dec 11 1956
ANNUAL SEVEN-DAY MINIMUM	2850	Oct 5	2340	Sep 23	134	Dec 11 1956
INSTANTANEOUS PEAK FLOW			41900	May 31	[c]275000	May 4 1990
INSTANTANEOUS PEAK STAGE			15.44	May 31	[d]34.21	May 4 1990
ANNUAL RUNOFF (AC-FT)	12680000		6963000		6641000	
10 PERCENT EXCEEDS	42800		24100		23900	
50 PERCENT EXCEEDS	12100		6000		4190	
90 PERCENT EXCEEDS	3480		3150		1320	

[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)
Oct. 19	2200	5,820	12.39	Jan. 26	1300	6,840	12.97
Nov. 16	1700	2,240	9.28	May 2	2300	2,660	9.89
Dec. 3	1300	4,220	11.33	July 16	2200	2,420	9.55

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.1	19	33	20	98	304	33	187	7.6	.97	2.1	61
2	262	18	183	19	82	649	31	474	6.1	.90	1.8	21
3	106	21	2130	20	69	316	29	876	5.0	.86	1.5	15
4	55	20	706	19	61	214	27	276	4.7	.73	1.6	9.9
5	36	18	327	18	57	158	26	163	4.8	.60	2.9	6.6
6	25	16	207	18	49	123	26	114	36	.51	1.6	4.8
7	17	15	153	17	44	100	23	385	18	1.1	1.5	3.8
8	12	15	118	16	42	176	22	306	11	1.4	1.7	3.1
9	12	14	98	15	42	352	21	181	10	1.2	1.4	3.0
10	9.3	13	83	15	37	312	24	127	16	1.4	1.2	2.4
11	7.4	13	66	26	36	349	85	94	13	1.3	1.0	2.0
12	6.1	81	58	28	42	275	255	73	9.4	1.5	.88	1.7
13	5.3	248	177	26	37	206	155	61	7.1	1.9	.78	1.4
14	5.0	958	159	25	35	159	110	50	5.9	16	.63	1.3
15	5.0	365	131	23	34	125	87	40	5.0	26	.54	1.2
16	5.7	791	108	39	33	99	65	32	5.1	296	.42	1.0
17	6.5	573	90	330	32	82	54	26	4.0	307	.32	.86
18	52	277	75	189	32	71	46	22	3.3	132	.29	.68
19	1140	187	64	140	35	62	40	19	2.7	57	.28	.61
20	1610	132	58	111	76	55	35	15	2.3	33	.43	.55
21	357	101	51	88	70	47	31	12	2.2	22	.75	.51
22	174	80	45	75	664	41	27	10	2.1	16	.67	.50
23	109	66	41	70	392	37	24	8.4	1.9	10	.49	.47
24	76	57	37	67	236	42	21	7.1	1.9	7.0	.37	.49
25	57	51	33	99	170	43	19	8.4	1.9	6.2	.33	.47
26	45	49	31	2020	126	39	22	11	1.8	5.9	.30	.41
27	36	43	28	817	101	44	22	9.6	1.7	5.9	.28	.36
28	30	42	27	324	94	42	22	7.7	1.6	4.8	.26	.30
29	26	39	25	211	---	40	40	14	1.4	3.8	.22	.28
30	25	35	23	156	---	37	327	16	.99	3.1	.19	.27
31	22	---	21	120	---	35	---	10	---	2.6	16	---
TOTAL	4336.4	4357	5386	5161	2826	4634	1749	3635.2	194.49	968.67	42.73	145.96
MEAN	140	145	174	166	101	149	58.3	117	6.48	31.2	1.38	4.87
MAX	1610	958	2130	2020	664	649	327	876	36	307	16	61
MIN	2.1	13	21	15	32	35	19	7.1	.99	.51	.19	.27
AC-FT	8600	8640	10680	10240	5610	9190	3470	7210	386	1920	85	290
CFSM	3.49	3.62	4.33	4.15	2.52	3.73	1.45	2.92	.16	.78	.03	.12
IN.	4.02	4.04	5.00	4.79	2.62	4.30	1.62	3.37	.18	.90	.04	.14

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued

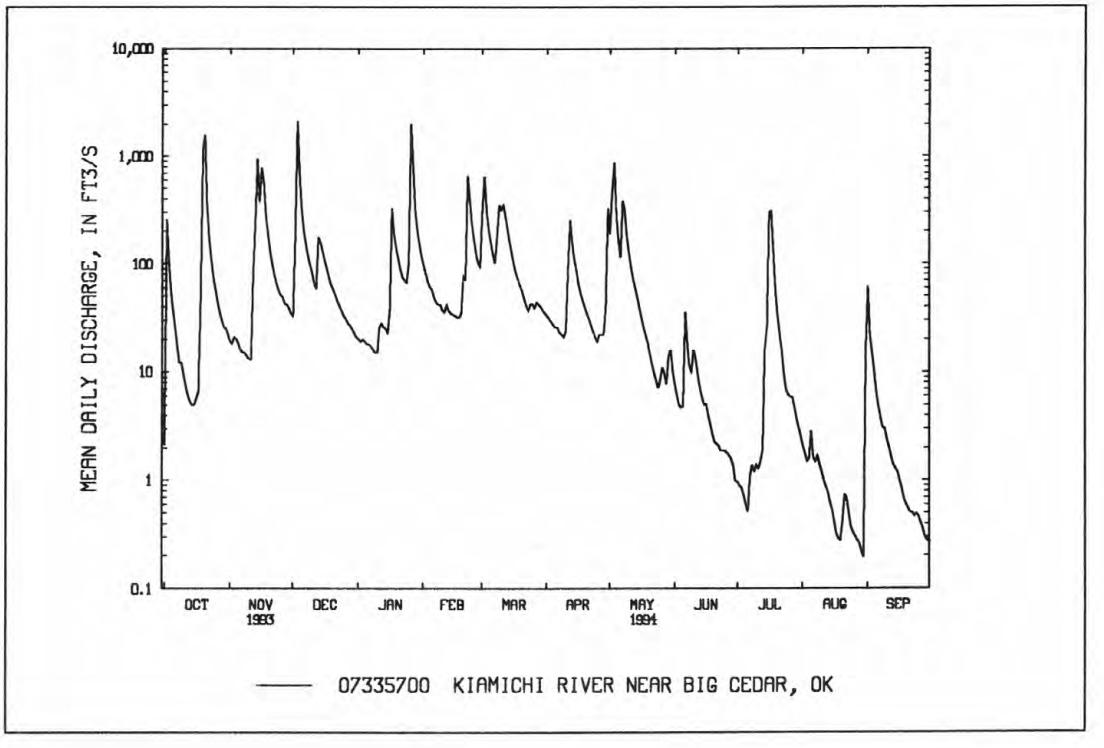
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1966 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	60.8	87.5	130	92.1	115	154	132	143	58.2	22.8	8.03	22.1
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1966-94	
ANNUAL TOTAL	43911.50		33436.45			
ANNUAL MEAN	120		91.6		85.4	
HIGHEST ANNUAL MEAN					152	1985
LOWEST ANNUAL MEAN					33.9	1978
HIGHEST DAILY MEAN	3040	Jan 4	2130	Dec 3	5960	May 13 1982
LOWEST DAILY MEAN	.00	Aug 1	.19	Aug 30	[a].00	Jul 15 1966
ANNUAL SEVEN-DAY MINIMUM	.01	Jul 28	.28	Aug 24	.00	Oct 16 1966
INSTANTANEOUS PEAK FLOW			6840	Jan 26	[b]27400	May 19 1990
INSTANTANEOUS PEAK STAGE			12.97	Jan 26	19.60	May 19 1990
ANNUAL RUNOFF (AC-FT)	87100		66320		61870	
ANNUAL RUNOFF (CFSM)	3.00		2.28		2.13	
ANNUAL RUNOFF (INCHES)	40.74		31.02		28.94	
10 PERCENT EXCEEDS	254		223		176	
50 PERCENT EXCEEDS	42		26		25	
90 PERCENT EXCEEDS	.26		.87		.19	

[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 1993 TO SEPTEMBER 1994

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)
APR											
26...	0848	6.00	19.0	732	1028	1028	19	3.47	25	7.6	6.5
26...	0849	12.0	19.0	732	1028	1028	19	3.47	25	7.5	6.5
26...	0850	18.0	19.0	732	1028	1028	19	3.47	24	7.6	6.5
26...	0851	24.0	19.0	732	1028	1028	19	3.47	24	7.6	6.5
26...	0852	30.0	19.0	732	1028	1028	19	3.47	24	7.8	6.5
26...	0853	36.0	19.0	732	1028	1028	19	3.47	24	7.8	6.5
26...	0854	42.0	19.0	732	1028	1028	19	3.47	24	7.9	6.5
26...	0855	48.0	19.0	732	1028	1028	19	3.47	24	7.9	6.5
26...	0856	54.0	19.0	732	1028	1028	19	3.47	24	7.8	6.5
26...	0857	60.0	19.0	732	1028	1028	19	3.47	25	7.7	6.4
26...	0858	66.0	19.0	732	1028	1028	19	3.47	26	7.6	6.4
26...	0859	72.0	19.0	732	1028	1028	19	3.47	27	7.6	6.5

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

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											
19...	1020	1028	80020	187	22	6.3	19.0	18.0	7.1	745	9.1
FEB											
23...	0830	1028	80020	404	21	6.7	2.5	9.0	5.5	742	10.0
JUN											
14...	1330	1028	80020	5.6	30	7.0	24.0	26.0	2.6	745	7.4
AUG											
09...	1045	1028	80020	2.2	26	7.0	26.0	24.5	1.4	748	7.4

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	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)
OCT											
19...	99	K850	>400	5	2	0.84	0.73	1.6	36	0.3	0.80
FEB											
23...	89	54	110	5	0	0.81	0.62	1.8	43	0.4	0.50
JUN											
14...	94	--	--	6	0	1.1	0.86	1.6	32	0.3	0.80
AUG											
09...	91	28	78	8	0	1.4	1.0	1.8	31	0.3	1.0

DATE	BICAR-BONATE WATER DIS IT FIELD (MG/L AS HCO3) (00453)	CAR-BONATE WATER DIS IT FIELD (MG/L AS CO3) (00452)	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)
OCT											
19...	4	0	4	3.0	1.3	0.10	7.0	23	18	0.03	11.6
FEB											
23...	6	0	5	2.6	1.2	<0.10	7.8	24	19	0.03	26.2
JUN											
14...	8	0	7	1.9	1.3	<0.10	7.1	29	19	0.04	0.44
AUG											
09...	12	0	10	1.6	1.5	<0.10	6.8	22	21	0.03	0.13

DATE	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	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)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
OCT											
19...	--	<0.010	--	<0.050	0.020	0.03	0.28	0.30	0.30	0.030	<0.010
FEB											
23...	0.099	<0.010	0.099	0.099	0.020	0.03	--	<0.20	--	<0.010	<0.010
JUN											
14...	--	<0.010	--	<0.050	0.030	0.04	--	<0.20	--	0.010	<0.010
AUG											
09...	--	<0.010	--	<0.050	0.020	0.03	0.28	0.30	0.30	0.020	0.020

RED RIVER BASIN

07335700 KIAMICHI RIVER NEAR BIG CEDAR, OK--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	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										
19...	<0.010	150	10	<3	94	<4	6	<10	<1	<1
FEB										
23...	<0.010	100	12	<3	53	<4	3	<10	<1	<1
JUN										
14...	<0.010	50	14	<3	280	<4	15	<10	1	<1
AUG										
09...	<0.010	<10	12	<3	210	<4	15	<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)	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										
19...	<1.0	9	<6	--	--	--	--	27	14	76
FEB										
23...	<1.0	9	<6	0.02	<0.00	0.02	<1.0	7	7.6	91
JUN										
14...	<1.0	9	<6	0.02	0.010	0.02	<1.0	6	0.09	93
AUG										
09...	<1.0	13	<6	--	--	--	--	4	0.02	90

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.--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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	122	430	141	1100	6880	211	6880	409	8.5	11	4.1
2	450	108	932	129	799	6230	194	5820	803	8.6	9.6	32
3	1260	107	11800	126	728	5660	400	9510	364	8.7	8.3	139
4	671	106	14500	119	661	4380	580	6480	83	7.9	7.7	79
5	375	107	7860	115	607	3720	393	4410	95	6.5	8.0	58
6	236	91	3480	111	561	3410	318	3580	855	5.3	8.0	39
7	157	77	3770	100	640	2940	298	5330	1420	5.2	49	26
8	110	65	3500	90	750	2330	265	12000	146	4.8	40	19
9	90	57	3300	84	820	6730	233	3890	97	359	21	15
10	79	52	3020	80	895	4420	212	3210	409	54	15	13
11	65	49	2580	99	e1360	3350	248	2660	874	114	14	11
12	57	51	2470	373	e1530	2960	1460	2050	776	36	13	9.2
13	48	73	2880	451	e1310	2600	1580	1780	481	17	10	7.9
14	41	1620	2490	172	1010	2160	1300	1830	91	22	8.3	6.9
15	34	3160	1490	140	1100	1510	1070	1630	65	16	7.3	5.9
16	30	3530	1340	261	1090	1100	575	1530	52	18	6.1	5.3
17	27	7390	936	5590	917	894	482	1330	42	17	5.4	4.5
18	107	3810	585	2600	804	711	411	846	36	693	4.8	3.8
19	2580	2380	515	2170	500	629	352	424	34	617	4.3	3.6
20	5920	1770	636	1770	2440	569	305	225	31	217	5.3	3.2
21	5720	1600	614	1120	1690	726	265	185	27	119	6.0	2.8
22	2190	1240	407	659	7790	921	263	153	25	77	5.3	2.6
23	1910	829	332	597	7340	641	230	126	32	51	4.4	2.3
24	1720	445	296	572	3860	370	175	106	34	37	3.9	2.2
25	1370	385	268	964	3370	338	145	88	23	29	3.7	2.1
26	919	409	243	3830	2980	320	618	478	18	24	3.5	2.0
27	387	531	225	7480	2750	319	1770	467	15	20	3.4	1.8
28	294	532	197	3760	2630	307	1350	99	12	21	3.7	1.6
29	203	509	180	2430	---	289	3490	236	11	16	3.5	1.4
30	168	479	164	2130	---	258	10800	300	9.9	14	3.0	1.2
31	141	---	151	1700	---	229	---	235	---	12	3.1	---
TOTAL	27386	31684	71591	39963	52032	67901	29993	77888	7369.9	2655.5	299.6	505.4
MEAN	883	1056	2309	1289	1858	2190	1000	2513	246	85.7	9.66	16.8
MAX	5920	7390	14500	7480	7790	6880	10800	12000	1420	693	49	139
MIN	27	49	151	80	500	229	145	88	9.9	4.8	3.0	1.2
AC-FT	54320	62850	142000	79270	103200	134700	59490	154500	14620	5270	594	1000

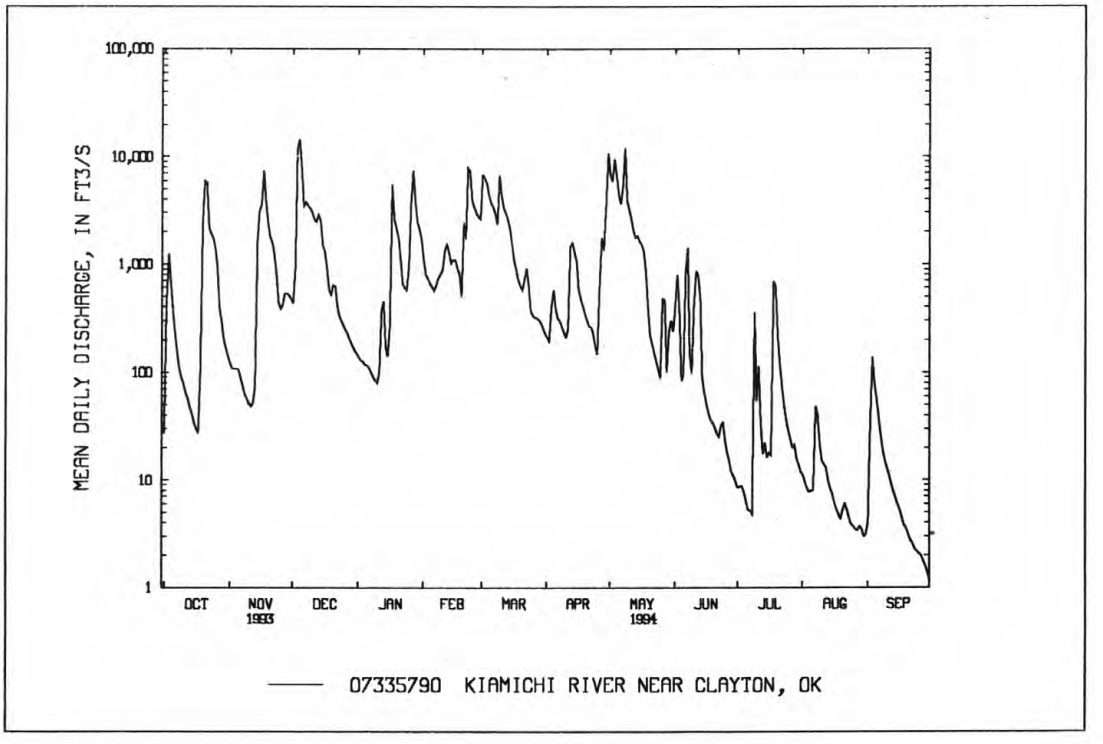
e Estimated

07335790 KIAMICHI RIVER NEAR CLAYTON, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1982 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	831	1356	1626	1133	1690	1651	1586	2288	1001	231	246	332
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1982-94	
ANNUAL TOTAL	483739.4		409268.4			
ANNUAL MEAN	1325		1121		1161	
HIGHEST ANNUAL MEAN					1967	1990
LOWEST ANNUAL MEAN					547	1984
HIGHEST DAILY MEAN	18000	May 10	14500	Dec 4	36800	May 4 1990
LOWEST DAILY MEAN	1.3	Aug 1	1.2	Sep 30	.00	Oct 3-18 1983
ANNUAL SEVEN-DAY MINIMUM	1.5	Jul 27	1.8	Sep 24	.00	Oct 3 1983
INSTANTANEOUS PEAK FLOW			15700	Dec 3	40200	May 4 1990
INSTANTANEOUS PEAK STAGE			15.53	Dec 3	22.23	May 4 1990
ANNUAL RUNOFF (AC-FT)	959500		811800		841300	
10 PERCENT EXCEEDS	3270		3440		3270	
50 PERCENT EXCEEDS	545		268		275	
90 PERCENT EXCEEDS	16		6.3		5.3	



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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	179	559	230	1700	12400	193	12700	638	30	41	16
2	22	165	650	218	1120	12800	179	7530	564	42	34	14
3	73	160	14400	210	833	8930	165	20100	866	37	30	23
4	1080	154	26700	206	742	6700	218	12400	657	29	27	50
5	469	145	16600	201	665	5450	412	6640	2010	27	119	158
6	251	136	5980	195	593	4780	272	5260	1080	27	181	138
7	160	133	5140	186	541	4380	218	4260	1770	26	112	114
8	115	125	4820	176	585	3730	196	9180	1350	22	332	90
9	98	117	4500	165	702	9040	184	9110	1560	22	228	71
10	70	106	4260	159	827	8340	170	4400	1710	236	148	56
11	53	97	3630	156	887	5320	239	3850	1280	429	98	46
12	45	95	3310	163	1050	4540	394	2980	1150	884	69	39
13	38	97	3950	322	1730	3790	1850	2420	896	402	52	33
14	31	577	4520	553	1510	3270	1420	2580	633	389	43	29
15	26	4090	2800	270	1190	2400	1120	2230	287	559	39	25
16	21	5390	2010	226	1310	1420	801	1880	200	248	33	22
17	17	9600	1750	4760	1090	1100	394	1720	164	149	29	19
18	70	7550	1080	6210	928	823	309	1290	140	106	25	16
19	1310	4380	806	3560	791	635	256	718	121	575	22	13
20	7370	2780	703	2920	2400	551	220	402	108	619	20	12
21	7730	2250	807	2160	4370	481	191	223	111	327	20	10
22	4390	1990	733	1320	11400	618	171	176	97	218	19	9.0
23	2700	1330	529	966	13900	769	287	148	84	163	16	8.6
24	2250	918	444	928	7050	854	262	127	75	125	16	8.2
25	2000	533	399	1070	5210	783	175	113	70	98	16	7.3
26	1350	480	360	2780	4410	413	147	4030	64	81	15	7.0
27	898	475	330	7660	3860	350	1480	2190	59	78	14	6.8
28	403	590	306	7230	3690	309	1890	903	49	66	12	6.2
29	321	613	280	3950	---	268	1840	1110	42	53	11	5.7
30	244	600	258	3060	---	244	12300	2590	36	46	9.8	5.3
31	201	---	243	2630	---	215	---	1120	---	46	11	---
TOTAL	33848	45855	112857	54840	75084	105703	27953	124380	17871	6159	1841.8	1058.1
MEAN	1092	1528	3641	1769	2682	3410	932	4012	596	199	59.4	35.3
MAX	7730	9600	26700	7660	13900	12800	12300	20100	2010	884	332	158
MIN	17	95	243	156	541	215	147	113	36	22	9.8	5.3
AC-FT	67140	90950	223900	108800	148900	209700	55440	246700	35450	12220	3650	2100

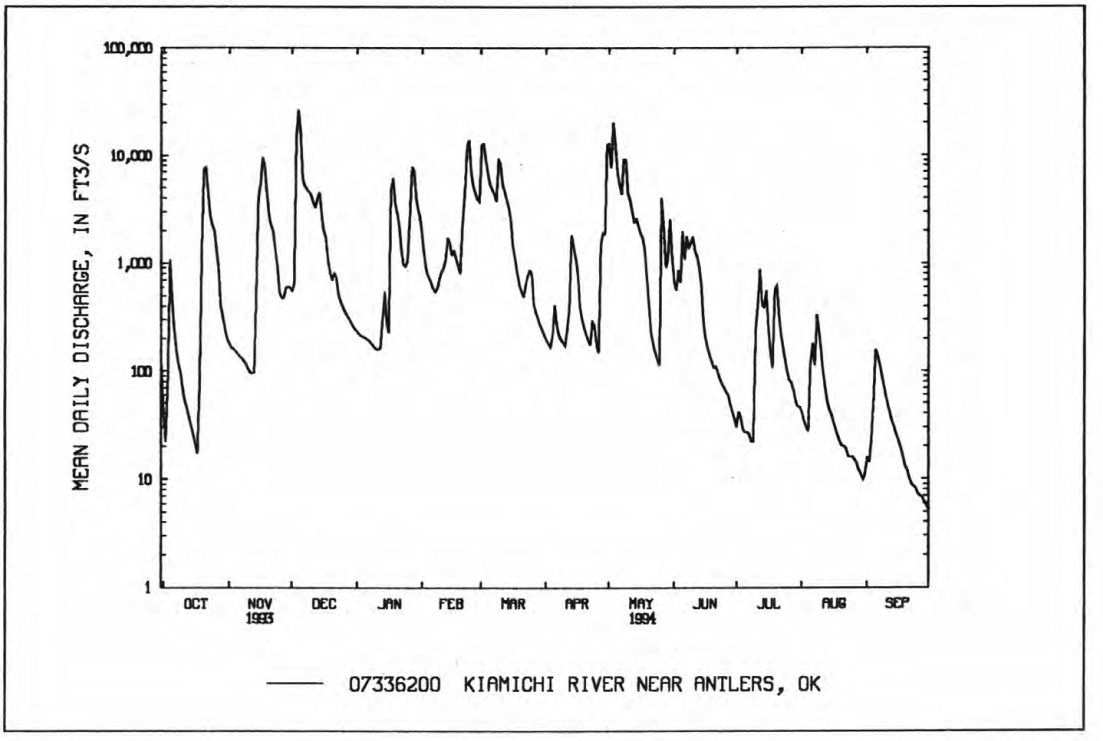
07336200 KIAMICHI RIVER NEAR ANTLERS, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1984 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1254	2132	2546	1745	2590	2961	2901	3661	1610	380	368	495
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1984-94	
ANNUAL TOTAL	737795.4		607449.9			
ANNUAL MEAN	2021		1664		[a]1883	
HIGHEST ANNUAL MEAN					3184	1990
LOWEST ANNUAL MEAN					786	1984
HIGHEST DAILY MEAN	41400	May 10	26700	Dec 4	57000	May 4 1990
LOWEST DAILY MEAN	4.9	Jul 29	5.3	Sep 30	[b].50	Sep 8 1984
ANNUAL SEVEN-DAY MINIMUM	6.4	Jul 25	6.6	Sep 24	1.5	Sep 3 1984
INSTANTANEOUS PEAK FLOW			28700	Dec 4	62300	May 3 1990
INSTANTANEOUS PEAK STAGE			28.25	Dec 4	42.65	May 3 1990
ANNUAL RUNOFF (AC-FT)	1463000		1205000		1364000	
10 PERCENT EXCEEDS	5040		4770		5070	
50 PERCENT EXCEEDS	697		360		458	
90 PERCENT EXCEEDS	22		24		12	

[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.



07336820 RED RIVER NEAR DE KALB, TX

LOCATION .--Lat 33°40'59", long 94°41'39", Bowie County, 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 National Geodetic Vertical Datum of 1929.

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, may also affect flows. Satellite telemeter and rain gage 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

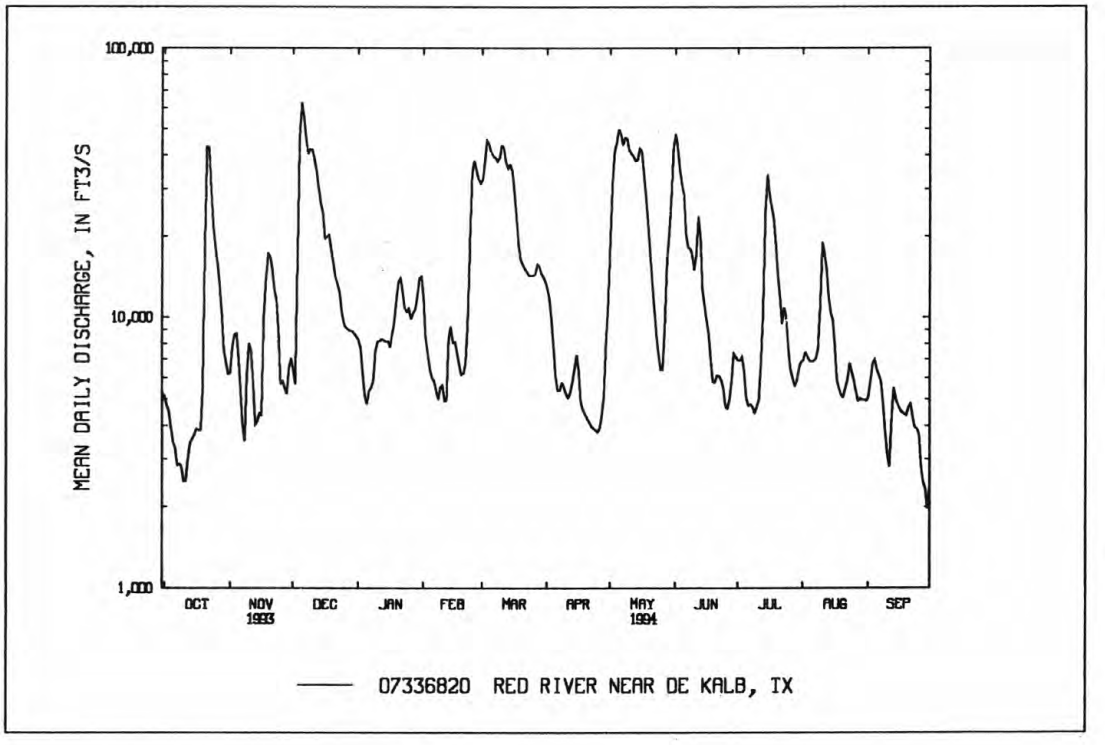
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5120	6250	6360	8220	11800	32500	12800	19400	48100	6930	6940	5110
2	4740	7770	5640	7720	8390	37900	11700	31500	43100	6940	7430	5840
3	4520	8640	16200	6240	7370	45200	9820	41000	35500	7150	7150	6790
4	3890	8730	46500	5180	6520	43900	7780	44600	31300	6400	6920	6980
5	3440	6980	63000	4780	5980	41100	6090	50200	28500	5090	6890	6430
6	3300	5240	55500	5350	5840	39700	5350	47900	20300	4730	6900	6140
7	2830	3990	46300	5460	5390	39100	5370	43500	18200	4780	7030	5790
8	2880	3480	40300	5840	4960	38000	5740	46600	18000	4660	7670	4810
9	2790	6160	42200	7520	5530	39100	5510	45900	17300	4440	11000	3770
10	2470	8030	41900	8130	5620	43300	5220	41800	15000	4660	19000	3110
11	2470	7520	38600	8180	4910	42900	5050	40500	17100	4930	17300	2790
12	3000	5650	34800	8290	4950	37600	5270	39600	23800	6700	15100	4180
13	3440	4030	30000	8210	8290	35700	5770	38200	19700	10400	12000	5500
14	3550	4140	26400	8120	9260	36800	6470	38500	12800	24800	10400	5010
15	3680	4430	24300	8170	8020	35100	7290	42400	11100	33900	9760	4740
16	3880	4360	19700	7730	8110	29400	6380	41200	9770	28600	7820	4560
17	3840	10100	19900	8640	7360	23500	4890	33600	8690	25600	5880	4470
18	3830	14000	20200	9510	6720	18600	4580	27500	6990	23300	5480	4410
19	5520	17200	17800	11500	6140	16500	4400	22400	5780	18700	5170	4360
20	19500	16800	15900	13600	6240	15700	4260	17300	5740	14300	5080	4660
21	42900	15100	14000	14000	6770	15200	4120	13500	6110	11900	5450	4790
22	42700	12700	13300	12500	9590	14800	3980	10800	6090	9400	5850	4270
23	29000	11600	12500	10800	21100	14400	3900	8640	5880	10900	6830	3910
24	21400	8760	10500	10500	34700	14300	3850	7320	5490	9970	6360	3890
25	17900	5680	9520	10800	38000	14300	3790	6440	4700	7680	5900	3700
26	15800	5800	9170	9810	35100	14500	3900	6410	4620	6420	5370	2800
27	13100	5430	9020	10400	32600	15800	4360	9280	4970	5960	4930	2430
28	10300	5200	8910	10700	31500	15500	5060	16200	5770	5570	5030	2340
29	7500	6560	8900	12000	---	14600	7950	20600	7360	5810	4970	1970
30	6810	7080	8720	14000	---	14200	11500	27900	7160	6510	4970	2360
31	6190	---	8490	14200	---	13600	---	42600	---	6860	4920	---
TOTAL	302290	237410	724530	286100	346760	852800	182150	923290	454920	333990	241500	131910
MEAN	9751	7914	23370	9229	12380	27510	6072	29780	15160	10770	7790	4397
MAX	42900	17200	63000	14200	38000	45200	12800	50200	48100	33900	19000	6980
MIN	2470	3480	5640	4780	4910	13600	3790	6410	4620	4440	4920	1970
AC-FT	599600	470900	1437000	567500	687800	1692000	361300	1831000	902300	662500	479000	261600

07336820 RED RIVER NEAR DE KALB, TX--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	9217	13760	14190	11390	14700	20080	18490	25370	26760	9466	5173	5567
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1968-94	
ANNUAL TOTAL	8056990		5017650			
ANNUAL MEAN	22070		13750		14430	
HIGHEST ANNUAL MEAN					30100	1990
LOWEST ANNUAL MEAN					4690	1980
HIGHEST DAILY MEAN	113000	May 11	63000	Dec 5	278000	May 7 1990
LOWEST DAILY MEAN	2470	Oct 10	1970	Sep 29	254	Nov 29 1979
ANNUAL SEVEN-DAY MINIMUM	2820	Oct 6	2780	Sep 24	529	Aug 31 1972
INSTANTANEOUS PEAK FLOW			64400	Dec 5	279000	May 6 1990
INSTANTANEOUS PEAK STAGE			23.52	Dec 5	34.42	May 6 1990
ANNUAL RUNOFF (AC-FT)	15980000		9953000		10460000	
10 PERCENT EXCEEDS	53000		38000		39800	
50 PERCENT EXCEEDS	17000		8020		6830	
90 PERCENT EXCEEDS	4130		4160		2130	



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 1993 TO SEPTEMBER 1994

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 WATER (DEG C) (00010)	BAROMETRIC PRESSURE (MM OF HG) (00025)	OXYGEN, DISSOLVED (MG/L) (00300)	OXYGEN, DISSOLVED (PERCENT SATURATION) (00301)	NITROGEN DISSOLVED (MG/L AS N) (00602)
OCT											
21...	1420	1028	80020	44500	382	7.9	18.5	760	6.6	71	1.2
DEC											
09...	1415	1028	80020	42500	294	7.9	10.5	750	10.6	97	0.42
JAN											
26...	1057	1028	80020	9560	582	8.2	13.0	750	11.0	106	0.65
MAR											
15...	1100	1028	80020	36000	615	7.9	11.5	755	10.3	96	0.99
MAY											
12...	1300	1028	80020	39400	483	7.8	19.5	755	8.6	95	0.49
JUN											
29...	1115	1028	80020	7270	1110	8.2	30.5	755	6.6	89	--

DATE	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L) (00310)	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)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT											
21...	5.1	110	47	32	8.3	28	34	1	3.4	54	33
DEC											
09...	3.3	95	36	29	5.4	22	33	1	3.6	42	27
JAN											
26...	0.3	160	82	44	13	50	38	2	9.2	90	78
MAR											
15...	0.9	160	94	42	14	55	42	2	3.0	95	79
MAY											
12...	0.8	140	68	38	10	40	38	1	2.7	72	58
JUN											
29...	2.7	300	160	77	26	110	44	3	4.3	180	170

07336820 RED RIVER NEAR DE KALB, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	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 TOTAL (MG/L AS N) (00630)
OCT											
21...	0.20	3.8	205	0.28	24600	0.310	0.310	1.4	0.020	0.07	0.330
DEC											
09...	0.10	5.7	171	0.23	19600	0.120	--	--	<0.010	--	0.120
JAN											
26...	0.10	5.3	341	0.46	8790	0.210	0.210	0.93	0.040	0.13	0.250
MAR											
15...	0.20	5.1	336	0.46	32600	0.180	0.180	0.80	0.010	0.03	0.190
MAY											
12...	0.10	5.1	268	0.36	28500	0.160	0.160	0.71	0.030	0.10	0.190
JUN											
29...	0.30	4.8	657	0.89	12900	--	--	--	<0.010	--	--

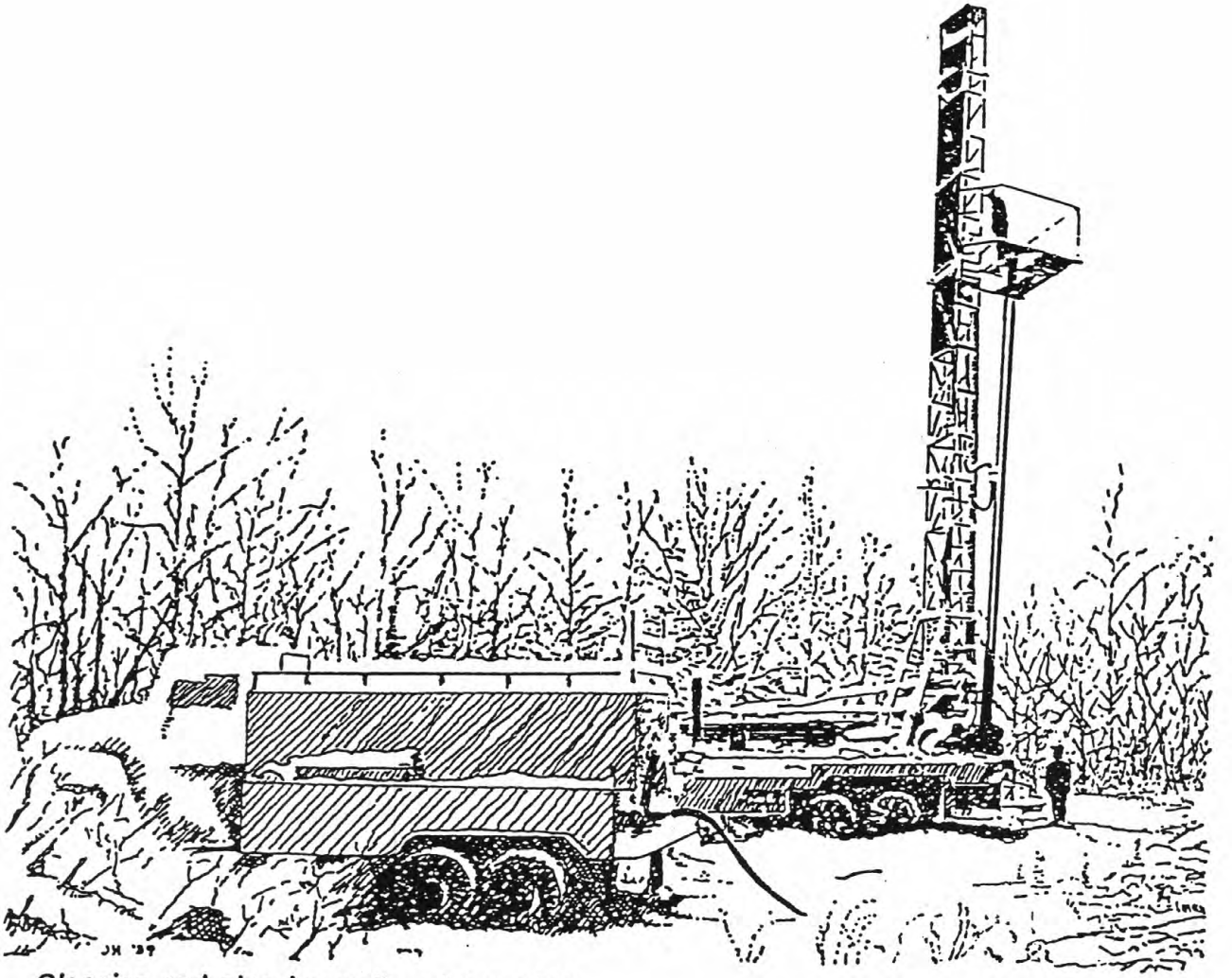
DATE	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOSPHORUS DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS 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)
OCT										
21...	0.330	0.080	0.10	0.82	0.90	0.040	0.050	0.15	--	--
DEC										
09...	0.120	0.050	0.06	0.25	0.30	0.030	0.020	0.06	--	--
JAN										
26...	0.250	0.060	0.08	0.34	0.40	0.020	0.030	0.09	<1	83
MAR										
15...	0.190	0.040	0.05	0.76	0.80	0.080	0.020	0.06	--	--
MAY										
12...	0.190	0.060	0.08	0.24	0.30	0.010	0.020	0.06	--	--
JUN										
29...	<0.050	0.030	0.04	0.17	0.20	<0.010	<0.010	--	2	140

RED RIVER BASIN
07336820 RED RIVER NEAR DE KALB, TX--Continued

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	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)	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)
OCT 21...	--	--	--	--	--	--	--	--	--	--
DEC 09...	--	--	--	--	--	--	--	--	--	--
JAN 26...	<0.5	<1.0	<5	<3	<10	110	<10	6	13	<0.1
MAR 15...	--	--	--	--	--	--	--	--	--	--
MAY 12...	--	--	--	--	--	--	--	--	--	--
JUN 29...	<0.5	<1.0	<5	<3	<10	<3	<10	12	1	<0.1

DATE	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)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)
OCT 21...	--	--	--	--	--	--	--	1130	136000	85
DEC 09...	--	--	--	--	--	--	--	702	80600	66
JAN 26...	<10	<10	<1	<1.0	420	<6	8	103	2660	67
MAR 15...	--	--	--	--	--	--	--	231	22500	89
MAY 12...	--	--	--	--	--	--	--	258	27400	71
JUN 29...	<10	<10	<1	<1.0	830	7	<3	107	2100	87



Cleaning and plugging wells, winter 1984

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.--No estimated daily discharges. 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)
Oct. 20	0500	37,100	20.00	Feb. 22	1600	10,900	11.01
Nov. 16	2400	10,900	11.03	May 3	0600	15,300	13.12
Dec. 3	1800	24,600	16.36	May 7	2100	10,400	10.77
Jan. 26	2000	12,000	11.58	July 14	1400	9,320	10.19

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	96	186	81	515	1270	125	961	488	15	15	268
2	25	85	759	78	436	3090	104	1180	331	13	12	357
3	66	87	13700	76	384	1900	91	8500	235	13	10	152
4	224	105	6490	70	338	1100	78	2380	174	12	9.3	159
5	125	112	2350	67	294	776	109	1170	463	12	129	104
6	87	95	1280	63	258	608	338	764	270	11	361	68
7	67	79	857	57	222	496	241	3060	174	13	175	49
8	56	70	672	54	196	473	164	3530	146	39	121	36
9	1210	62	560	51	181	4570	124	1440	130	73	170	27
10	619	58	481	51	164	2110	107	909	182	106	122	22
11	318	56	406	100	155	1160	103	667	209	247	81	19
12	196	53	330	255	142	806	773	527	224	345	56	15
13	139	57	757	277	134	632	687	804	159	1290	42	13
14	107	1350	1200	219	132	517	456	893	115	5450	33	12
15	84	1390	800	176	119	429	348	585	87	3860	28	11
16	71	3840	634	187	109	362	247	426	70	1070	53	10
17	64	5030	525	2710	101	304	183	328	59	519	58	8.8
18	2180	1760	443	1450	93	251	141	236	50	1130	39	8.4
19	10000	992	379	862	87	210	113	177	45	679	29	8.0
20	19600	681	329	660	157	182	93	133	36	362	24	7.4
21	3680	514	284	533	354	156	78	106	34	207	21	6.8
22	1490	407	243	438	4950	134	101	88	42	389	17	7.2
23	831	329	206	394	3070	114	82	73	49	268	15	7.1
24	577	262	178	402	1420	231	59	61	37	132	14	6.9
25	429	226	158	829	924	495	53	54	26	83	13	6.4
26	322	261	141	5370	678	318	55	2850	21	62	12	6.5
27	234	304	124	4500	531	574	73	1200	18	47	11	6.3
28	177	286	115	1890	447	399	52	595	17	33	9.6	5.8
29	147	253	108	1100	---	282	53	605	18	29	8.7	5.6
30	125	214	96	803	---	202	820	1370	17	23	8.1	5.4
31	111	---	86	635	---	158	---	730	---	18	17	---
TOTAL	43379	19114	34877	24438	16591	24309	6051	36402	3926	16550	1713.7	1418.6
MEAN	1399	637	1125	788	593	784	202	1174	131	534	55.3	47.3
MAX	19600	5030	13700	5370	4950	4570	820	8500	488	5450	361	357
MIN	18	53	86	51	87	114	52	54	17	11	8.1	5.4
AC-FT	86040	37910	69180	48470	32910	48220	12000	72200	7790	32830	3400	2810
CFSM	4.44	2.02	3.57	2.50	1.88	2.49	.64	3.73	.42	1.69	.18	.15
IN.	5.12	2.26	4.12	2.89	1.96	2.87	.71	4.30	.46	1.95	.20	.17

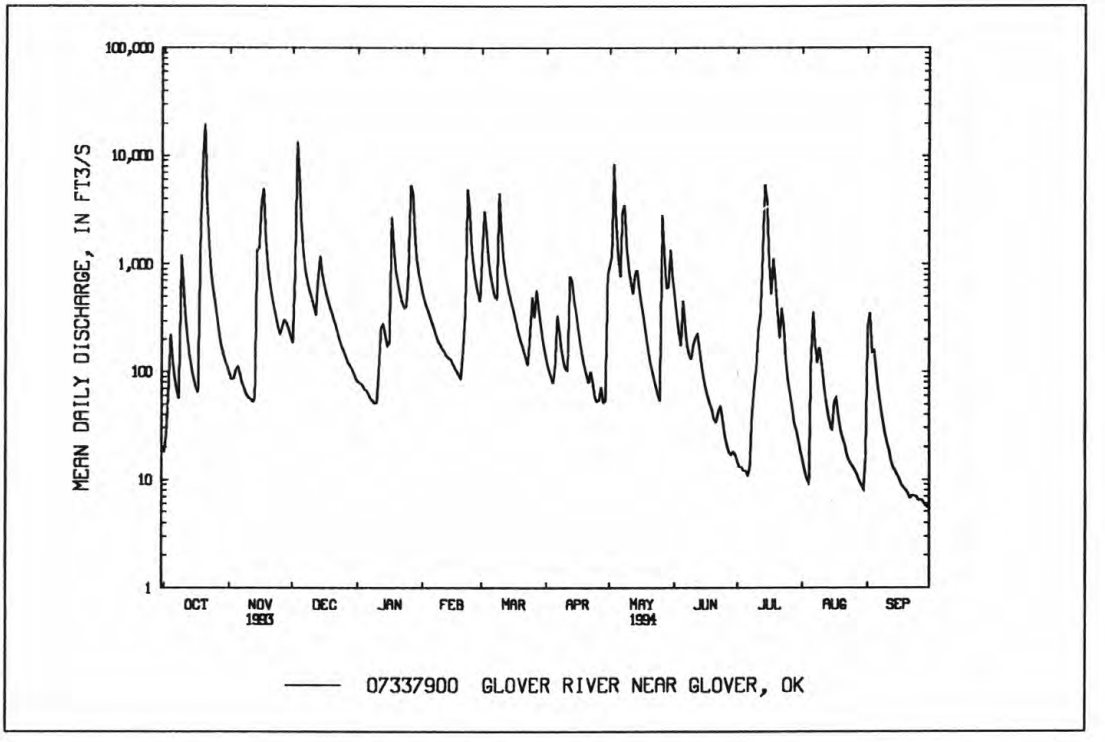
07337900 GLOVER RIVER NEAR GLOVER, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	379	524	722	481	670	859	741	894	353	88.0	77.0	212
MAX	2427	2146	3376	1202	1600	2506	2753	3503	1514	534	461	2690
(WY)	1985	1975	1972	1969	1989	1973	1991	1990	1973	1994	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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1962-94	
ANNUAL TOTAL	243995.2		228769.3			
ANNUAL MEAN	668		627		499	
HIGHEST ANNUAL MEAN					979	1973
LOWEST ANNUAL MEAN					169	1976
HIGHEST DAILY MEAN	19600	Oct 20	19600	Oct 20	53100	Dec 10 1971
LOWEST DAILY MEAN	1.7	Jul 28	5.4	Sep 30	[a].00	Jul 19 1966
ANNUAL SEVEN-DAY MINIMUM	2.3	Jul 23	6.1	Sep 24	.00	Aug 4 1970
INSTANTANEOUS PEAK FLOW			37100	Oct 20	98600	Dec 10 1971
INSTANTANEOUS PEAK STAGE			20.00	Oct 20	29.72	Dec 10 1971
ANNUAL RUNOFF (AC-FT)	484000		453800		361600	
ANNUAL RUNOFF (CFSM)	2.12		1.99		1.58	
ANNUAL RUNOFF (INCHES)	28.81		27.02		21.53	
10 PERCENT EXCEEDS	1450		1270		1060	
50 PERCENT EXCEEDS	188		170		123	
90 PERCENT EXCEEDS	7.5		15		3.5	

[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 good. 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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	211	451	1110	590	4300	4410	490	3260	3160	128	345	96
2	157	335	1470	577	4600	5410	414	3580	3770	119	331	404
3	162	293	4010	572	4530	6330	377	7080	2290	109	322	521
4	179	260	13600	570	3790	6500	348	8580	877	104	311	322
5	373	326	16500	557	2350	6510	321	e8070	1210	100	314	262
6	350	515	12100	494	1850	6330	580	e7790	1690	94	464	214
7	274	511	8610	402	1790	6090	783	e8290	2170	91	693	167
8	232	485	7260	373	1740	4820	569	e10300	2770	87	562	139
9	492	469	6480	359	1380	4950	452	e9290	2740	301	581	121
10	1530	457	6230	354	965	6210	401	7700	2830	399	668	111
11	930	428	6220	407	673	5930	412	4960	2750	388	636	101
12	615	292	6150	826	641	6300	901	5470	1440	863	584	96
13	468	251	6330	874	612	6280	1740	5120	1100	733	552	89
14	385	848	6770	772	580	6090	2150	5410	686	1890	529	84
15	323	2630	6600	658	904	5430	2640	5330	345	4380	536	81
16	279	3450	5890	588	1110	3900	1570	4870	273	6060	393	81
17	252	7000	5320	3390	929	2350	838	4570	279	2990	161	124
18	429	7830	3140	4480	812	1120	746	3610	281	2390	145	150
19	4120	6660	1030	3230	653	625	626	2250	264	3610	131	149
20	10100	4870	848	3790	705	543	497	1790	231	3230	131	148
21	13800	3520	1550	3840	908	490	381	1180	182	1710	135	147
22	12900	3110	1890	2290	3050	438	350	364	164	872	112	147
23	8760	3260	1370	1270	6800	397	511	249	170	1170	101	149
24	5050	2490	709	1310	6040	395	511	216	207	752	95	146
25	3810	1240	636	2500	5390	896	377	194	218	574	90	148
26	4720	1360	595	3900	5250	953	333	1020	175	493	85	147
27	5420	1300	562	6890	4950	1220	389	4250	152	455	85	145
28	5490	1070	538	6530	4690	1580	504	4870	140	429	83	145
29	5080	931	559	4490	---	1430	498	3800	132	395	81	146
30	3250	959	618	4150	---	1630	1430	2600	128	371	77	143
31	1240	---	608	3850	---	925	---	2530	---	356	75	---
TOTAL	91381	57601	135303	64883	71992	106482	22139	138593	32824	35643	9408	4923
MEAN	2948	1920	4365	2093	2571	3435	738	4471	1094	1150	303	164
MAX	13800	7830	16500	6890	6800	6510	2640	10300	3770	6060	693	521
MIN	157	251	538	354	580	395	321	194	128	87	75	81
AC-FT	181300	114300	268400	128700	142800	211200	43910	274900	65110	70700	18660	9760

e Estimated

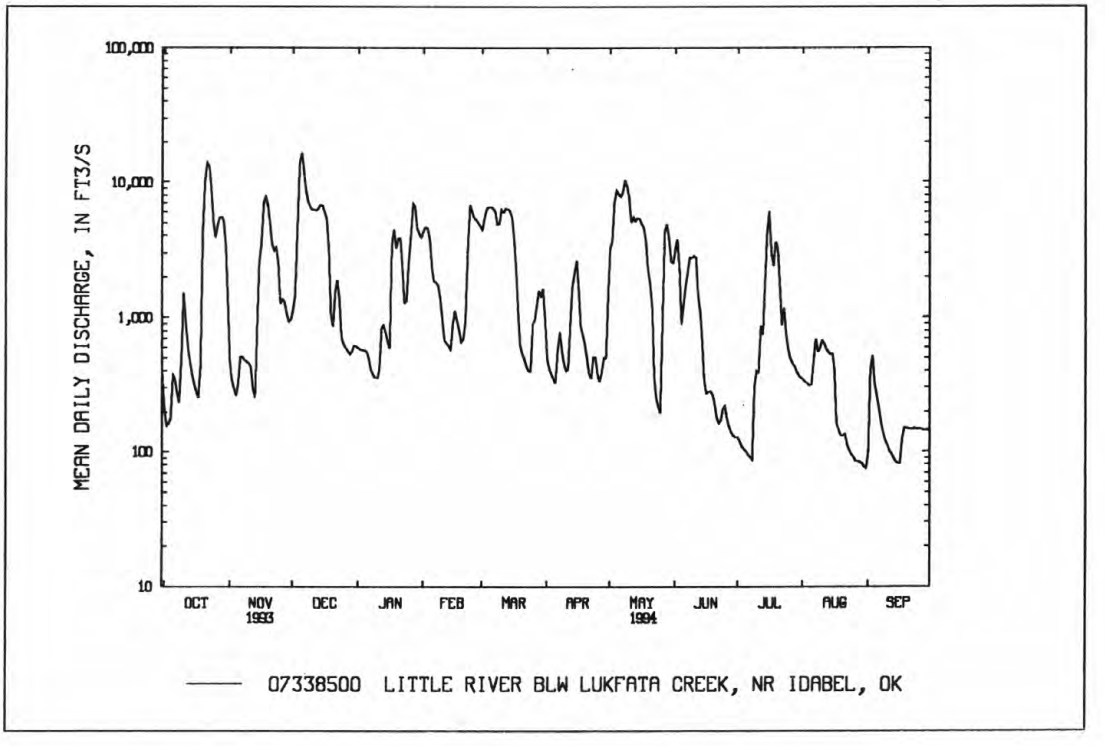
07338500 LITTLE RIVER BELOW LUKFATA CREEK NEAR IDABEL, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	1117	2212	2853	1960	2536	3048	2446	3288	2113	423	322	676
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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1971-94	
ANNUAL TOTAL	868050		771172			
ANNUAL MEAN	2378		2113		[a]1912	
HIGHEST ANNUAL MEAN					3424	1973
LOWEST ANNUAL MEAN					676	1976
HIGHEST DAILY MEAN	16500	Dec 5	16500	Dec 5	66800	Dec 11 1971
LOWEST DAILY MEAN	77	Jul 27	75	Aug 31	[b]7.8	Aug 14 1976
ANNUAL SEVEN-DAY MINIMUM	80	Jul 24	82	Aug 25	11	Oct 15 1972
INSTANTANEOUS PEAK FLOW			17900	Dec 4	103000	Dec 10 1971
INSTANTANEOUS PEAK STAGE			30.85	Dec 4	39.39	Dec 10 1971
ANNUAL RUNOFF (AC-FT)	1722000		1530000		1385000	
10 PERCENT EXCEEDS	6220		6170		6030	
50 PERCENT EXCEEDS	925		709		598	
90 PERCENT EXCEEDS	106		144		44	

[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.--(REVISED) 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, 0.6 mi downstream from Rock Creek, 3.5 mi upstream from Big Eagle Creek, 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.--No estimated daily dischrages. Records fair. U.S. Army Corps of Engineers' satellite telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	233	353	176	677	1020	248	1390	109	20	97	771
2	2950	215	1150	169	576	2980	234	1540	91	18	81	449
3	1060	256	17900	166	501	2050	220	7110	80	16	70	439
4	369	290	7350	161	447	1340	207	2070	72	14	63	290
5	214	258	2740	156	408	972	208	1080	75	14	73	202
6	138	228	1610	152	371	738	506	674	101	13	89	150
7	97	204	1120	147	331	604	389	1670	153	13	86	115
8	109	190	844	143	311	715	306	1750	101	11	80	96
9	1230	182	690	137	290	3410	265	963	98	13	69	82
10	388	172	600	135	284	2110	252	651	221	24	63	71
11	245	163	489	201	267	1680	267	470	363	27	54	61
12	165	197	419	349	257	1300	467	378	245	26	46	52
13	120	1130	912	297	249	996	465	406	170	41	39	46
14	95	5300	1130	267	226	774	396	449	131	3590	34	41
15	77	3160	874	243	215	630	351	332	107	1960	30	36
16	69	4030	703	284	205	525	301	270	94	1000	27	32
17	129	5040	598	4600	196	447	258	228	85	2940	30	29
18	1120	2180	512	2280	190	400	232	192	80	3140	26	25
19	8590	1410	447	1390	189	352	213	163	69	1070	23	22
20	23600	971	407	1020	216	319	197	144	61	581	25	19
21	4470	721	368	777	310	290	183	128	54	421	24	17
22	1890	578	329	630	3200	260	172	116	47	473	24	15
23	1140	489	298	582	2790	238	165	105	47	318	32	14
24	776	428	272	588	1560	241	152	96	44	225	32	13
25	582	382	253	1010	1100	306	145	93	35	180	26	12
26	466	482	236	12200	783	261	142	151	36	157	23	12
27	382	490	222	8740	614	288	163	142	37	178	20	12
28	326	470	214	2800	531	378	155	116	31	188	17	12
29	288	439	202	1630	---	328	164	104	26	136	16	11
30	279	391	189	1160	---	292	2130	125	23	110	14	10
31	263	---	181	863	---	267	---	138	---	97	14	---
TOTAL	51641	30679	43612	43453	17294	26511	9553	23244	2886	17014	1347	3156
MEAN	1666	1023	1407	1402	618	855	318	750	96.2	549	43.5	105
MAX	23600	5300	17900	12200	3200	3410	2130	7110	363	3590	97	771
MIN	14	163	181	135	189	238	142	93	23	11	14	10
AC-FT	102400	60850	86500	86190	34300	52580	18950	46100	5720	33750	2670	6260

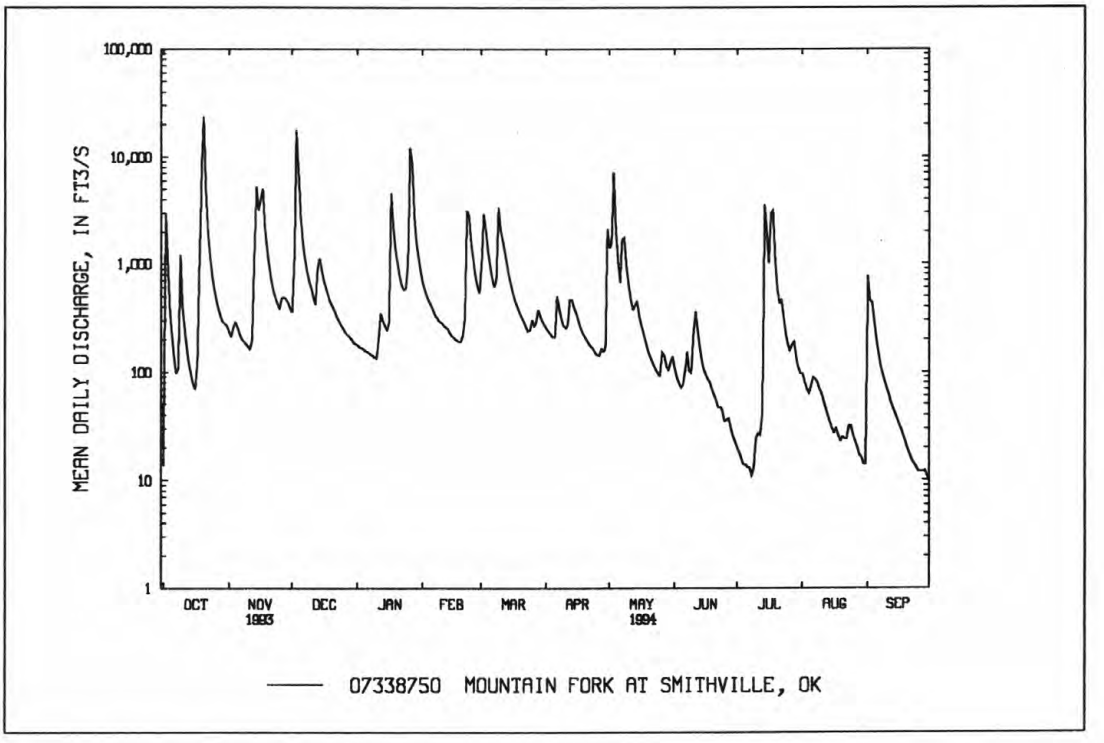
07338750 MOUNTAIN FORK AT SMITHVILLE, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	858	1054	1612	1010	722	874	509	800	306	246	76.6	550
MAX	1666	1254	1866	1402	841	1064	974	1397	649	549	156	1525
(WY)	1994	1992	1992	1994	1993	1993	1993	1993	1992	1994	1992	1992
MIN	86.5	884	1407	517	618	703	235	252	96.2	29.5	30.8	20.2
(WY)	1993	1993	1994	1992	1994	1992	1992	1992	1994	1993	1993	1993

SUMMARY STATISTICS	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1992-94	
ANNUAL TOTAL	297127.3		270390			
ANNUAL MEAN	814		741		719	
HIGHEST ANNUAL MEAN					741	1994
LOWEST ANNUAL MEAN					682	1993
HIGHEST DAILY MEAN	23600	Oct 20	23600	Oct 20	23600	Oct 20 1993
LOWEST DAILY MEAN	5.8	Sep 2	10	Sep 30	5.8	Sep 2 1993
ANNUAL SEVEN-DAY MINIMUM	7.2	Aug 27	12	Sep 24	7.2	Aug 27 1993
INSTANTANEOUS PEAK FLOW			37800	Oct 20	37800	Oct 20 1993
INSTANTANEOUS PEAK STAGE			22.29	Oct 20	[a]22.58	Dec 15 1992
ANNUAL RUNOFF (AC-FT)	589400		536300		521200	
10 PERCENT EXCEEDS	1870		1580		1580	
50 PERCENT EXCEEDS	329		241		273	
90 PERCENT EXCEEDS	15		26		24	

[a]From high-water mark and during backwater from Big Eagle Creek.



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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609	2840	1080	167	6960	1360	687	423	986	1650	818	568
2	854	1730	759	151	6980	2220	797	577	595	1130	1550	390
3	308	1440	6170	146	7020	2760	240	2090	567	501	1470	379
4	257	762	1500	339	7040	3840	678	453	538	526	1320	369
5	1640	1600	451	621	4800	3800	1840	1400	248	1760	723	246
6	2370	798	456	578	4440	3840	1400	4530	489	1760	402	581
7	1690	545	2740	515	4390	3830	392	4180	728	955	336	794
8	1800	400	4910	698	2750	3430	471	2710	1240	952	1080	851
9	3380	529	6980	798	3620	2010	307	445	786	729	2210	810
10	1540	921	7110	351	3120	1570	204	1840	903	460	2300	566
11	3640	1470	7090	693	1190	2140	640	3600	678	793	2300	437
12	4320	295	7080	247	441	2620	443	5690	314	766	2190	636
13	3300	586	7290	927	174	2850	454	4970	271	717	1630	1270
14	4010	394	7150	770	424	4340	285	4200	1140	739	716	1450
15	6250	635	7190	554	261	4160	1060	4680	1350	2240	380	1560
16	1420	3710	7160	403	585	4980	934	4510	1260	727	977	714
17	420	4000	6990	1860	537	4450	309	2660	1490	415	1560	419
18	4950	3670	2440	2820	863	3630	1980	2210	1540	882	1650	383
19	6590	3930	1260	3090	299	2780	753	1990	494	2080	1550	330
20	5560	4520	2060	2580	196	2120	216	1910	1100	1860	612	777
21	731	5390	2330	3470	220	1520	172	1050	1340	962	318	635
22	330	5590	2060	1510	523	669	296	239	910	681	496	663
23	231	4030	1770	1050	2850	325	251	255	753	493	1980	647
24	194	2270	1850	1770	2880	590	165	626	560	483	1830	398
25	2750	847	1790	3590	2850	1740	471	583	311	604	2230	197
26	4400	1990	1770	5080	2480	1640	632	1110	282	848	2380	160
27	4600	4540	1380	1910	2960	579	538	574	352	889	1430	407
28	4260	4270	769	1820	2450	1510	1060	371	1310	977	894	393
29	4750	4120	236	4360	---	1490	429	265	1920	922	1840	568
30	2570	2000	469	4770	---	2180	816	689	1540	852	2950	507
31	2040	---	390	6390	---	1730	---	1360	---	363	1180	---
TOTAL	81764	69822	102680	54028	73303	76703	18920	62190	25995	29716	43302	18105
MEAN	2638	2327	3312	1743	2618	2474	631	2006	866	959	1397	603
MAX	6590	5590	7290	6390	7040	4980	1980	5690	1920	2240	2950	1560
MIN	194	295	236	146	174	325	165	239	248	363	318	160
AC-FT	162200	138500	203700	107200	145400	152100	37530	123400	51560	58940	85890	35910

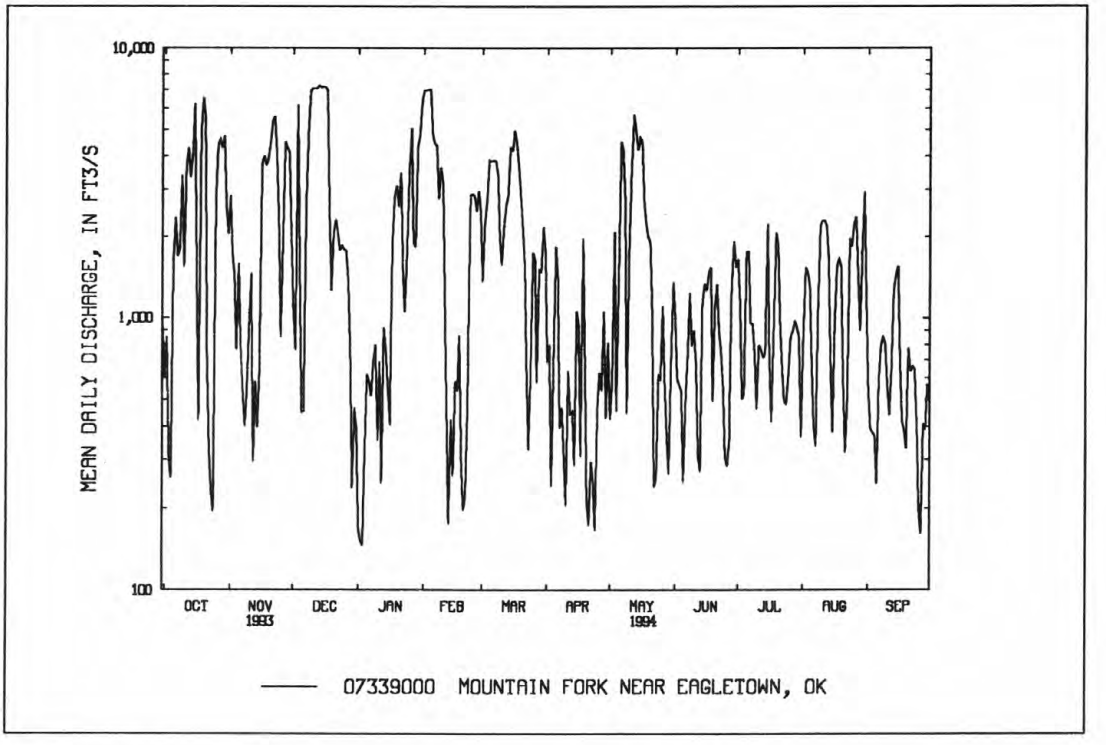
07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 1994, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	688	1300	2025	1751	1876	2168	2202	2272	1723	884	740	624
MAX	2638	6897	5203	5121	4159	4123	4976	7264	6061	2645	1515	2300
(WY)	1994	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	1993 CALENDAR YEAR		1994 WATER YEAR		WATER YEARS 1970-94	
ANNUAL TOTAL	782784		656528			
ANNUAL MEAN	2145		1799		[a]1519	
HIGHEST ANNUAL MEAN					2468	1973
LOWEST ANNUAL MEAN					651	1976
HIGHEST DAILY MEAN	7850	Jan 12	7290	Dec 13	11500	May 19 1991
LOWEST DAILY MEAN	104	Feb 7	146	Jan 3	[b]16	Dec 12 1971
ANNUAL SEVEN-DAY MINIMUM	246	Feb 5	271	Dec 29	90	Oct 10 1969
INSTANTANEOUS PEAK FLOW			12500	Dec 3	[c]18200	Jun 2 1990
INSTANTANEOUS PEAK STAGE			9.50	Dec 3	[d]11.58	Jun 2 1990
ANNUAL RUNOFF (AC-FT)	1553000		1302000		1101000	
10 PERCENT EXCEEDS	4930		4440		4110	
50 PERCENT EXCEEDS	1360		1100		711	
90 PERCENT EXCEEDS	356		316		163	

[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--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1948, 1955, 1961-1963, October 1992 to current.

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 current year.

REMARKS.--Interruptions in record were due to malfunction of the recording instruments.

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 26.0°C June 27, July 18; minimum 6.5°C Jan. 17, 18.

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
1	22.0	20.0	21.0	16.0	15.0	15.5	12.5	12.0	12.0	11.0	9.0	9.5
2	22.0	19.5	20.5	15.5	15.0	15.0	12.5	12.5	12.5	10.0	8.5	9.0
3	20.5	18.5	19.5	15.0	14.5	15.0	13.5	12.5	13.0	9.0	8.0	8.5
4	20.5	18.5	19.5	16.5	14.5	15.5	14.0	13.0	13.5	8.5	7.0	7.5
5	21.0	18.5	19.5	15.5	14.5	15.0	13.0	11.5	12.0	8.5	7.0	8.0
6	21.0	19.5	20.0	14.5	13.0	13.5	12.5	11.0	12.0	9.0	8.0	8.5
7	21.5	19.5	20.0	13.5	11.5	12.5	12.0	11.0	11.5	9.0	7.5	8.0
8	21.0	20.0	20.5	12.5	11.0	12.0	12.0	11.5	11.5	8.0	7.0	7.5
9	20.0	19.0	19.5	14.0	12.5	13.0	12.0	12.0	12.0	8.0	7.0	7.5
10	20.0	19.0	19.5	14.5	12.5	13.5	12.5	12.0	12.0	8.0	7.5	8.0
11	---	---	---	14.5	13.5	14.0	12.0	12.0	12.0	9.0	8.0	8.5
12	---	---	---	14.5	14.5	14.5	12.0	11.5	11.5	10.0	9.0	9.5
13	---	---	---	16.0	14.5	15.0	11.5	11.0	11.5	10.0	9.0	9.5
14	---	---	---	17.0	15.5	16.5	11.5	11.0	11.0	9.5	8.5	9.0
15	---	---	---	15.5	14.5	15.0	11.5	11.0	11.0	9.5	8.0	9.0
16	---	---	---	15.5	14.0	14.5	11.0	11.0	11.0	8.0	7.0	7.5
17	---	---	---	14.5	14.0	14.0	11.0	11.0	11.0	7.5	6.5	7.0
18	---	---	---	14.5	14.0	14.0	11.5	10.5	11.0	8.0	6.5	7.5
19	19.5	19.0	19.5	14.5	13.5	14.0	11.0	10.0	10.5	8.0	7.0	7.5
20	19.0	18.5	19.0	14.0	13.5	13.5	11.0	10.5	11.0	8.0	8.0	8.0
21	19.5	18.5	18.5	13.5	13.0	13.5	11.0	10.0	10.5	8.0	7.5	8.0
22	18.5	17.0	18.0	13.5	13.0	13.5	10.5	9.5	10.0	8.0	7.5	8.0
23	18.5	16.5	17.5	13.5	13.0	13.5	10.5	9.0	9.5	8.5	8.0	8.0
24	18.0	16.0	17.0	13.5	13.0	13.5	10.0	9.0	9.5	8.5	8.0	8.5
25	18.5	16.0	17.0	13.0	11.0	12.0	10.0	9.0	9.5	8.5	8.5	8.5
26	18.5	17.5	18.0	12.0	9.5	11.0	10.5	9.0	9.5	9.0	8.5	8.5
27	19.0	18.0	18.5	12.5	11.5	12.0	11.0	9.5	10.0	9.0	8.5	9.0
28	18.0	17.5	18.0	12.5	11.5	12.0	10.0	9.5	10.0	8.5	7.5	8.0
29	18.0	17.0	17.0	12.5	12.0	12.0	10.0	8.5	9.5	8.5	8.0	8.0
30	17.0	15.5	16.5	13.0	12.0	12.5	9.5	8.0	8.5	8.5	8.0	8.0
31	16.5	15.0	15.5	---	---	---	9.0	7.5	8.5	8.0	8.0	8.0
MONTH	---	---	---	17.0	9.5	13.7	14.0	7.5	10.9	11.0	6.5	8.2

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.0	7.5	8.0	9.0	8.5	8.5	15.0	11.5	13.5	16.5	14.5	15.5
2	8.0	7.5	7.5	9.5	8.0	8.5	15.5	12.5	14.0	16.0	13.5	15.0
3	8.0	7.5	8.0	10.0	8.5	9.0	15.5	14.0	15.0	16.5	13.5	15.0
4	8.0	8.0	8.0	9.5	9.0	9.0	15.5	13.0	14.0	17.5	14.5	16.0
5	8.0	8.0	8.0	10.0	9.0	9.5	14.0	12.5	13.5	18.0	15.5	17.0
6	9.0	8.0	8.5	10.0	9.5	9.5	13.0	11.0	12.0	15.5	14.5	15.0
7	8.5	8.0	8.0	9.5	9.0	9.5	14.0	11.0	12.5	15.0	14.5	14.5
8	9.0	8.5	9.0	9.0	9.0	9.0	14.5	13.0	13.5	16.5	14.5	16.0
9	8.5	7.5	8.0	9.5	9.0	9.0	14.5	13.0	13.5	16.0	15.0	15.5
10	8.0	7.5	8.0	11.0	8.5	9.5	17.0	13.5	15.0	16.5	15.5	16.0
11	9.0	7.5	8.0	11.0	8.5	9.5	17.5	15.5	16.5	16.5	15.5	16.0
12	9.0	8.0	8.0	10.5	9.5	10.0	17.0	14.5	15.5	16.0	15.0	15.5
13	9.5	7.0	8.0	10.0	9.5	9.5	17.5	15.5	16.0	16.0	15.0	15.5
14	9.0	7.0	8.0	11.0	9.5	10.0	17.5	15.0	16.5	16.0	15.5	16.0
15	9.5	8.0	8.5	11.0	9.5	10.0	17.0	15.5	16.5	17.0	15.5	16.0
16	9.5	8.0	8.5	11.5	10.0	10.5	16.5	13.5	15.0	17.0	16.5	16.5
17	10.0	8.0	9.0	11.0	10.5	10.5	19.0	15.0	16.5	17.0	15.5	16.5
18	10.5	8.5	9.5	10.5	9.0	9.5	17.0	14.5	15.5	16.5	15.0	15.5
19	10.0	9.0	9.5	11.5	9.5	10.5	18.0	14.0	16.0	16.5	15.0	16.0
20	11.0	10.0	10.5	12.0	11.0	11.5	20.5	17.5	18.5	17.0	15.0	15.5
21	11.0	10.0	10.5	12.5	11.0	11.5	20.0	18.0	18.5	18.5	15.0	16.5
22	11.5	10.5	11.0	13.5	10.5	12.0	20.0	17.5	18.5	19.0	17.0	18.0
23	11.0	9.0	10.5	14.0	12.0	13.0	20.5	18.0	19.0	21.0	18.5	19.5
24	9.5	8.5	9.0	14.5	13.0	13.5	21.0	18.5	19.5	21.0	19.5	20.0
25	9.5	8.5	9.0	14.0	12.5	13.0	20.0	18.0	19.0	21.0	19.0	19.5
26	9.5	8.0	8.5	12.5	12.0	12.5	19.5	16.5	18.0	20.0	19.0	19.5
27	9.0	8.5	8.5	12.0	11.5	12.0	21.0	18.0	19.0	19.5	18.5	19.0
28	8.5	8.5	8.5	12.5	10.5	11.5	18.5	16.5	17.0	20.0	18.0	19.0
29	---	---	---	14.0	11.0	12.5	17.0	16.5	16.5	20.0	19.0	19.5
30	---	---	---	12.5	11.5	12.0	16.5	15.5	16.0	22.0	18.5	20.0
31	---	---	---	14.0	11.5	12.5	---	---	---	21.0	18.0	19.5
MONTH	11.5	7.0	8.7	14.5	8.0	10.6	21.0	11.0	16.0	22.0	13.5	16.9

07339000 MOUNTAIN FORK NEAR EAGLETOWN, OK--Continued

WATER TEMPERATURE, DEGREES CELSIUS, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	20.0	17.5	18.5	20.0	18.5	19.5	22.5	21.0	21.5	23.0	22.0	22.5
2	21.0	17.0	18.5	21.0	18.0	19.0	22.0	19.5	20.5	23.0	21.0	21.5
3	21.5	18.0	19.5	23.0	18.5	21.0	22.5	20.5	21.0	22.0	20.5	21.0
4	22.0	19.5	20.5	23.5	19.5	21.5	23.0	20.0	21.0	22.5	20.5	22.0
5	22.5	21.0	22.0	22.0	20.0	21.0	---	---	---	23.5	21.5	22.5
6	22.5	21.5	22.0	22.0	19.5	20.5	---	---	---	24.5	22.0	23.0
7	23.0	20.5	21.5	21.5	19.0	20.0	---	---	---	23.5	21.5	22.5
8	20.5	18.0	19.5	21.5	18.5	20.0	---	---	---	22.5	21.0	22.0
9	18.5	18.0	18.0	20.0	19.0	19.5	---	---	---	22.5	21.0	21.5
10	19.5	18.0	18.5	22.0	19.0	20.0	---	---	---	22.5	20.5	21.5
11	20.5	18.0	19.5	22.0	20.0	21.0	---	---	---	23.0	20.5	21.5
12	22.0	19.5	20.5	20.5	18.5	19.5	---	---	---	23.0	22.0	22.5
13	23.5	22.0	22.5	20.5	18.5	19.5	---	---	---	23.0	21.0	22.0
14	23.5	21.0	22.5	21.0	18.5	19.5	---	---	---	23.0	21.0	22.0
15	21.0	19.0	19.5	21.5	20.0	20.5	---	---	---	23.5	21.0	22.0
16	20.5	18.0	19.0	24.0	21.0	22.0	---	---	---	23.0	21.5	22.5
17	20.5	18.0	19.0	24.5	22.0	23.0	---	---	---	23.5	22.0	23.0
18	19.5	17.5	18.5	26.0	23.0	24.5	---	---	---	23.0	21.5	22.5
19	21.5	18.5	19.5	23.0	20.0	21.0	---	---	---	23.0	22.0	22.5
20	22.5	19.5	20.5	22.0	20.0	21.0	---	---	---	22.5	21.0	21.5
21	20.0	18.5	19.0	21.5	20.0	20.5	---	---	---	22.5	20.5	21.0
22	20.5	18.0	19.0	22.0	20.0	21.0	---	---	---	22.0	20.0	20.5
23	21.5	18.5	19.5	23.5	19.5	21.5	---	---	---	20.0	19.0	19.5
24	21.5	19.0	20.0	23.0	21.0	22.0	---	---	---	19.5	18.5	19.0
25	23.5	21.0	22.0	22.5	21.0	22.0	---	---	---	19.5	18.0	19.0
26	23.5	20.5	22.0	21.5	19.5	20.5	---	---	---	20.5	18.5	19.5
27	26.0	23.5	24.0	22.5	20.0	21.0	---	---	---	20.5	19.5	20.0
28	24.5	20.5	23.5	21.5	18.5	20.0	---	---	---	21.5	19.0	20.0
29	22.0	19.5	20.0	21.5	19.0	20.0	24.5	21.0	22.0	22.5	20.5	21.5
30	21.0	19.0	19.5	19.5	18.5	19.0	23.0	21.0	21.5	22.0	21.0	21.5
31	---	---	---	21.5	18.5	20.0	23.0	21.0	22.0	---	---	---
MONTH	26.0	17.0	20.3	26.0	18.0	20.7	---	---	---	24.5	18.0	21.4

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	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, Hydro- logic Unit 11130302, on down- stream side of county road bridge, 2 mi south-west of Dutton and 4.5 mi north of Lake Chickasha.	22.1	1991-94	10/06/93 12/10/93 01/28/94 04/18/94 05/31/94 07/27/94	2.3 5.0 3.9 3.6 5.1 1.0
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, Hydro-logic Unit 11130302, 3.0 mi northwest of Verden.	76.1	1991-94	11/03/93 12/08/93 01/28/94 04/18/94 06/03/94 07/26/94 10/04/94	6.5 6.9 26 34 33 .08 .05
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, Hydro-logic 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	1991-94	10/05/93 12/01/93 01/19/94	0.05 .01 .11

WELL-IDENTIFICATION NUMBER.--363853100311001. Local number 02N-24E-07 CCD 1.

LOCATION.--Lat 36°38'47", long 100°31'15" , Hydrologic Unit 11100201, 2 mi north of Elmwood.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled stock well, diameter 6 in., depth 95 ft.

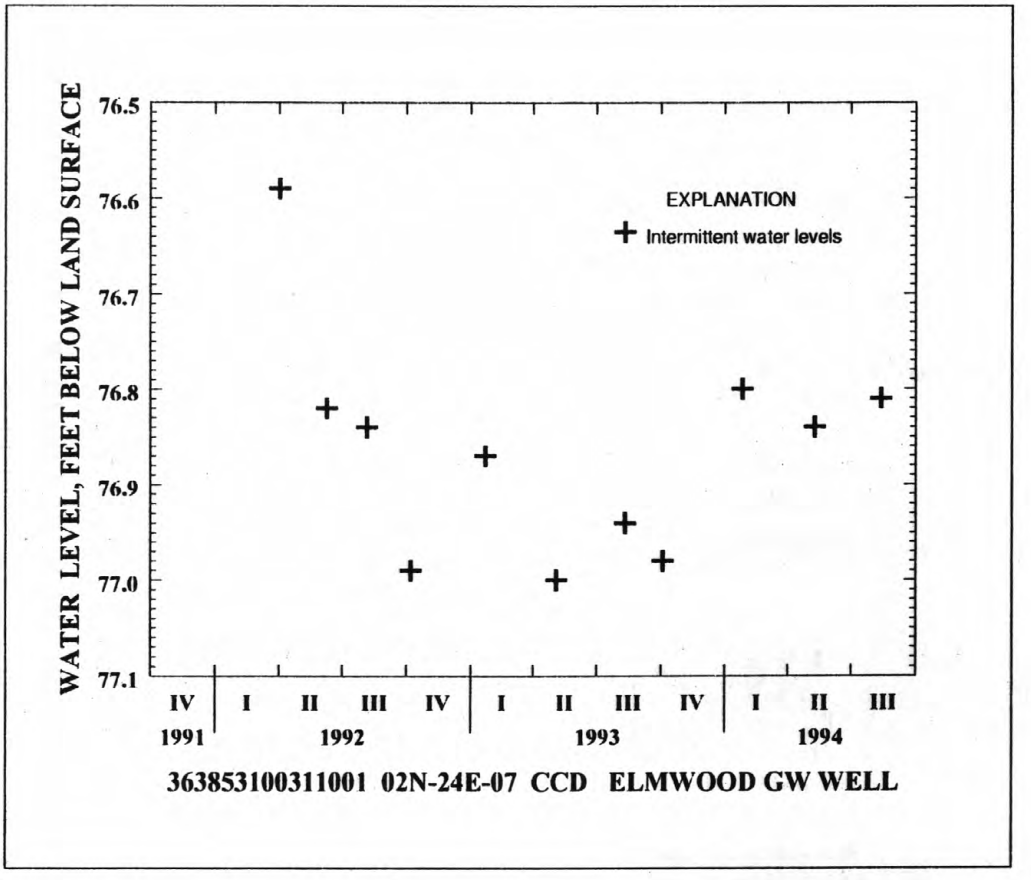
DATUM.--Altitude of land-surface datum is 2,625 ft. Measuring point: highest point on north side of casing .50 ft above land-surface datum.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 4, 1993	76.98	Jan. 26, 1994	76.80
May 10, 1994	76.84	Aug. 12, 1994	76.81



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.

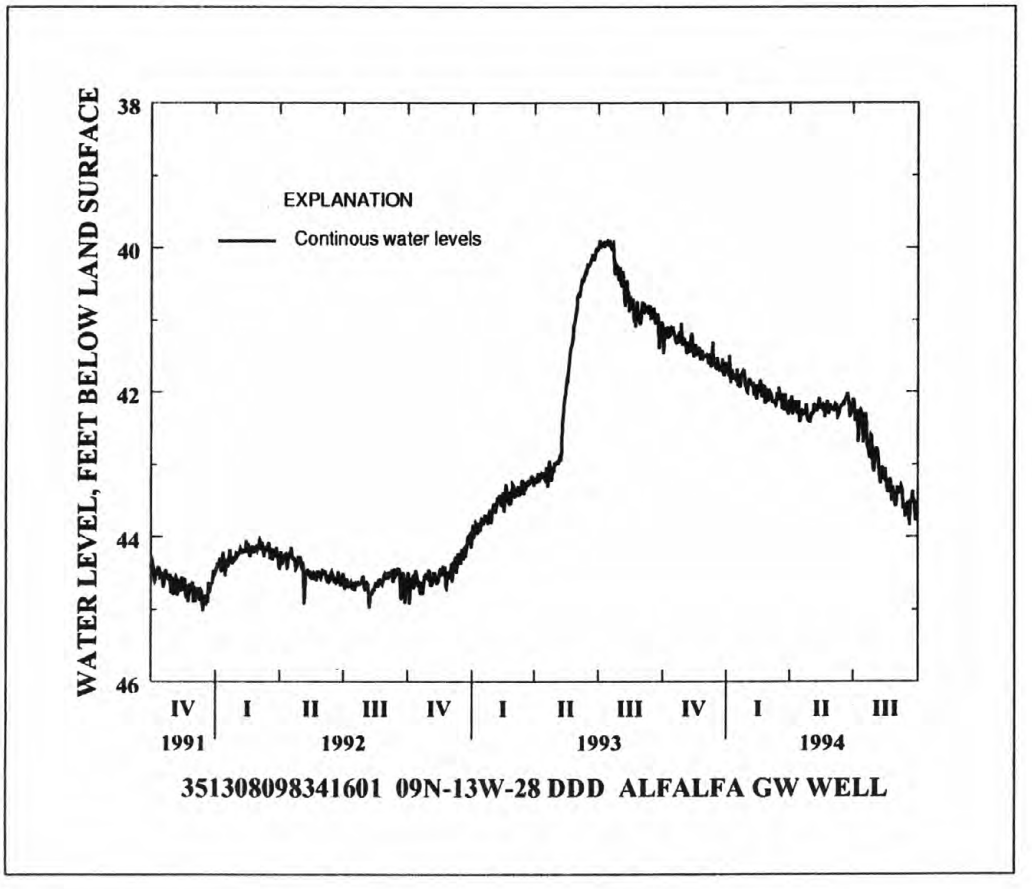
PERIOD OF RECORD.--1948 to current year.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	41.22	41.48	41.53	41.49	41.90	42.02	42.21	42.29	42.18	42.33	42.88	43.35
10	41.18	41.40	41.67	41.77	41.95	42.15	42.24	42.29	42.31	42.33	43.09	43.59
15	41.11	41.53	41.63	41.86	42.00	42.11	42.41	42.25	42.18	42.71	43.05	43.71
20	41.28	41.48	41.66	41.95	42.08	42.08	42.31	42.20	42.10	42.52	43.40	43.56
25	41.17	41.55	41.70	41.78	42.17	42.19	42.17	42.12	42.20	42.76	43.48	43.50
EOM	41.30	41.51	41.59	42.00	41.96	42.17	42.41	42.24	42.13	43.11	43.56	43.60
MAX	41.48	41.56	41.79	42.00	42.17	42.33	42.41	42.36	42.36	43.11	43.57	43.85
MIN	41.04	41.18	41.31	41.49	41.81	41.94	42.05	42.08	42.03	42.09	42.78	43.30



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.

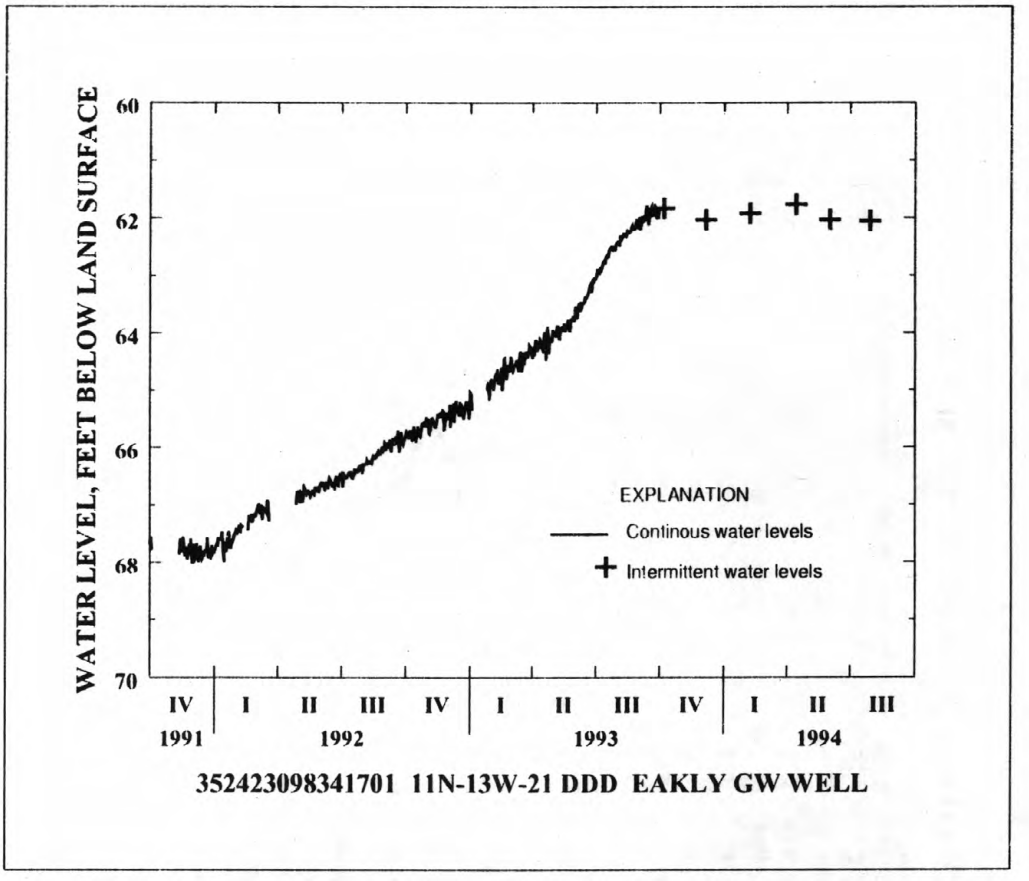
PERIOD OF RECORD.--1965 to 1981, 1983 to current year. Mean daily-water levels were published August 1983 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 7, 1993	61.83	Apr. 14, 1994	61.76
Dec. 6, 1993	62.03	June 2, 1994	62.03
Feb. 7, 1994	61.92	July 29, 1994	62.05



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.

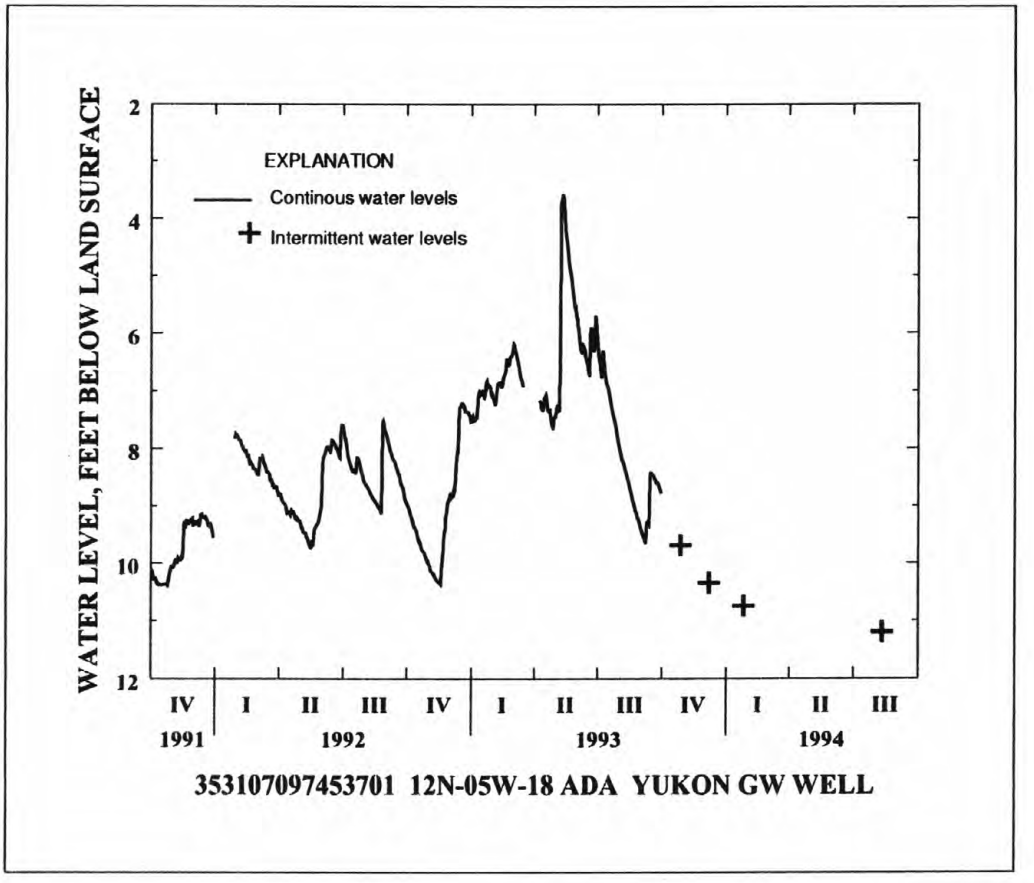
DATUM.--Altitude of land-surface datum 1,270 ft. Measuring point: top west edge of casing 0.80 ft above land-surface datum.

PERIOD OF RECORD.--1980 to current year. Mean daily-water levels published May 1980 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 27, 1993	9.69	Jan. 26, 1994	10.74
Dec. 8, 1993	10.34	Aug. 11, 1994	11.20



WELL-IDENTIFICATION NUMBER.--364450102190001. Local number 03N-07E-09 BBB 1.

LOCATION.--Lat 36°44'53", long 102°19'12" , Hydrologic Unit 11100101, 6 mi southwest of Keys.

AQUIFER.--Ogallala Formation.

WELL CHARACTERISTICS.--Drilled unused stock well, diameter 6 in., depth 61 ft.

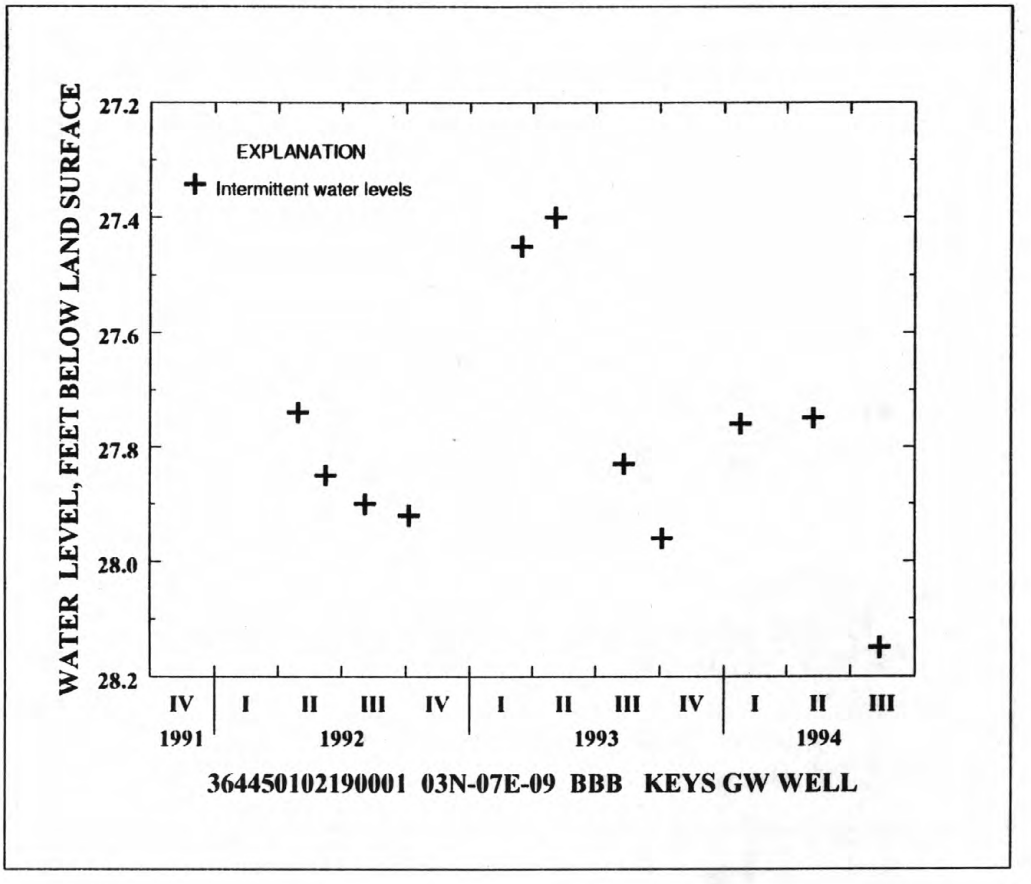
DATUM.--Altitude of land-surface datum is 3,965 ft. Measuring point: top of casing 3.50 ft above land-surface datum.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 5, 1993	27.96	May 9, 1994	27.75
Jan. 25, 1994	27.76	Aug. 12, 1994	28.15



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.

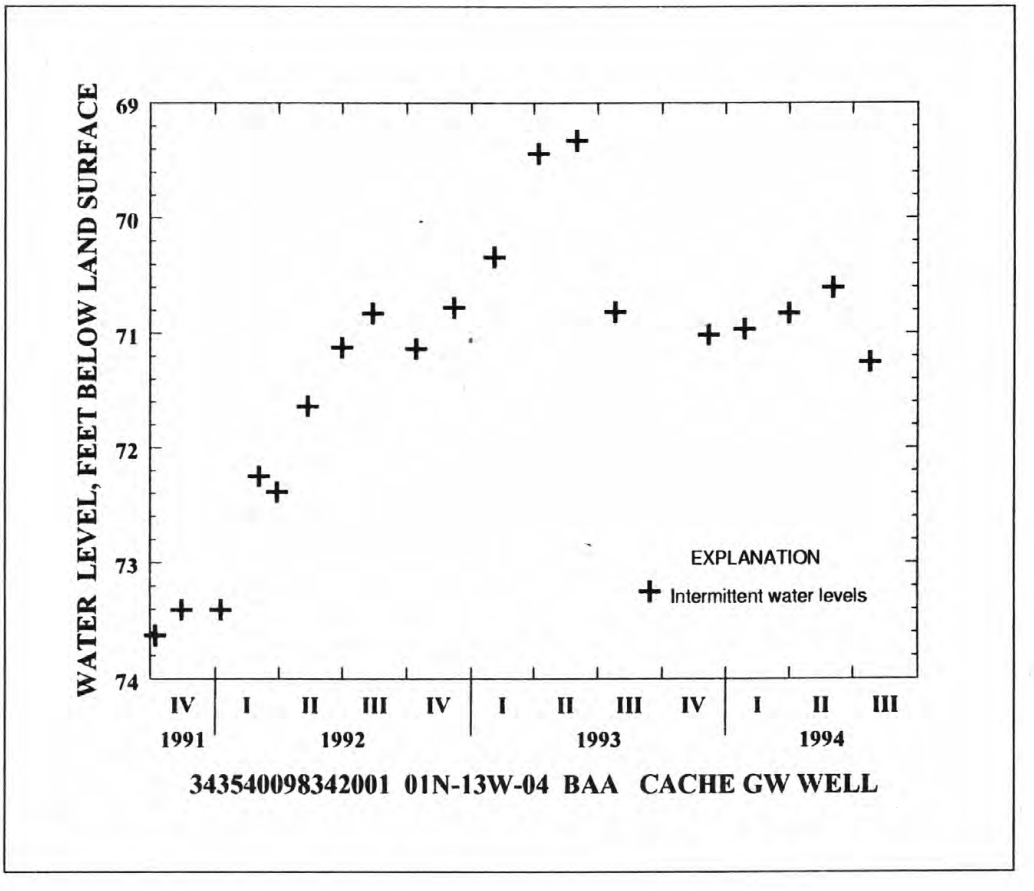
DATUM.--Altitude of land-surface datum is 1,200 ft. Measuring point: top of casing 1.8 ft above land-surface datum.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Dec. 7, 1993	71.02	June 2, 1994	70.61
Jan. 27, 1994	70.97	July 25, 1994	71.26
Mar. 31, 1994	70.83		



GROUND-WATER LEVELS
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.

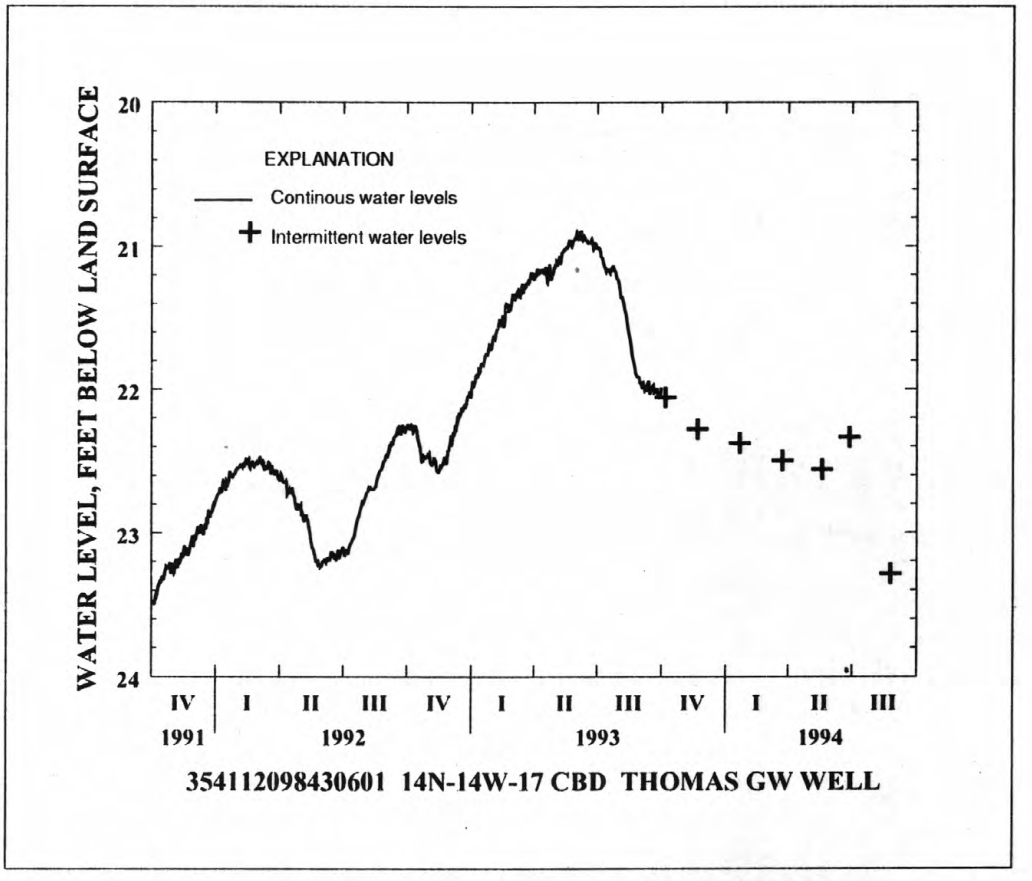
REMARKS.--Digital recorder installed May 20, 1981, mean daily-water levels published until September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 7, 1993	22.06	May 19, 1994	22.56
Nov. 22, 1993	22.28	June 28, 1994	22.34
Jan. 21, 1994	22.38	Aug. 25, 1994	23.29
Mar. 24, 1994	22.50		



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.

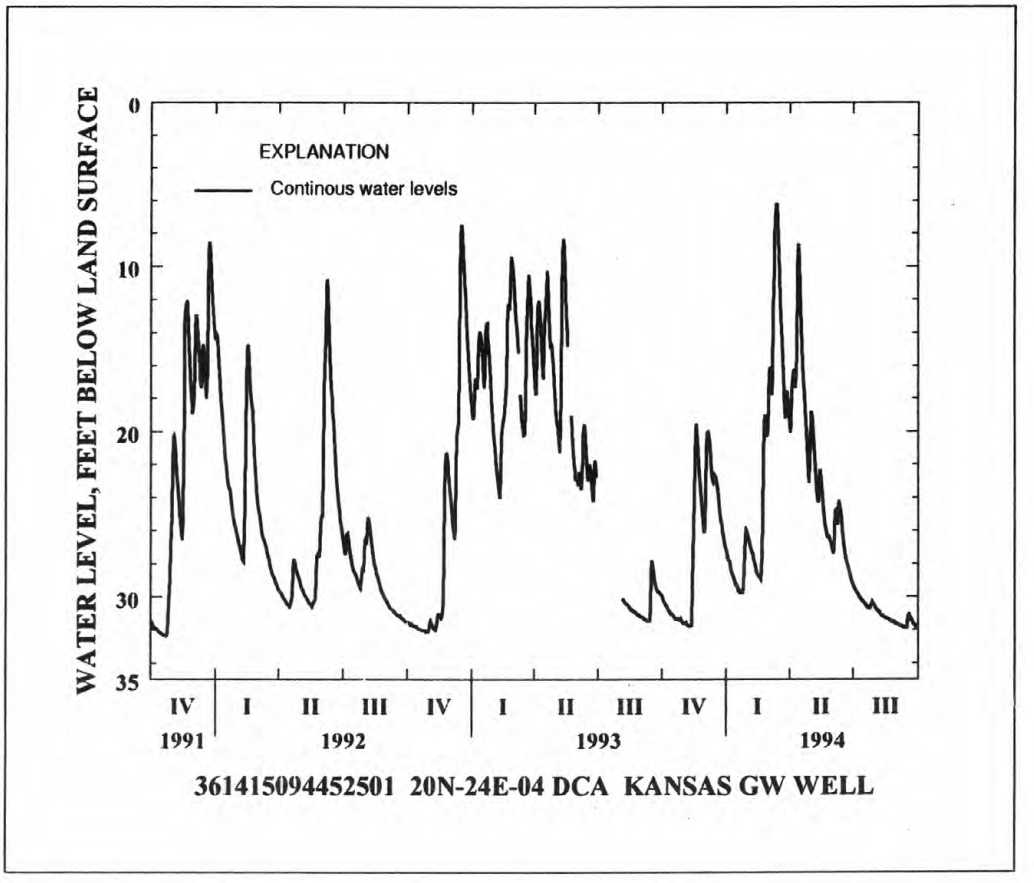
DATUM.--Altitude of land-surface datum is 1,150 ft. Measuring point: top of casing 1.85 ft above land-surface datum.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	30.42	31.66	20.05	27.81	27.00	16.39	17.11	20.32	24.77	29.70	30.89	31.72
10	30.81	31.77	21.69	28.65	27.94	10.04	17.42	23.43	24.53	30.03	31.09	31.82
15	31.05	25.80	22.73	29.31	28.65	7.19	9.71	22.40	25.90	30.32	31.24	31.87
20	31.27	20.03	23.56	29.71	28.36	13.12	15.87	24.81	27.54	30.58	31.33	31.24
25	31.31	23.47	25.46	29.79	18.99	18.76	20.06	26.42	28.45	30.72	31.48	31.66
EOM	31.53	25.87	27.00	26.27	20.33	18.94	21.76	26.82	29.15	30.57	31.62	31.87
MAX	31.53	31.77	27.00	29.79	28.90	20.05	23.10	26.82	29.15	30.72	31.62	31.88
MIN	29.93	19.51	20.02	25.95	18.99	6.13	8.63	18.79	24.15	29.28	30.64	31.04



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.

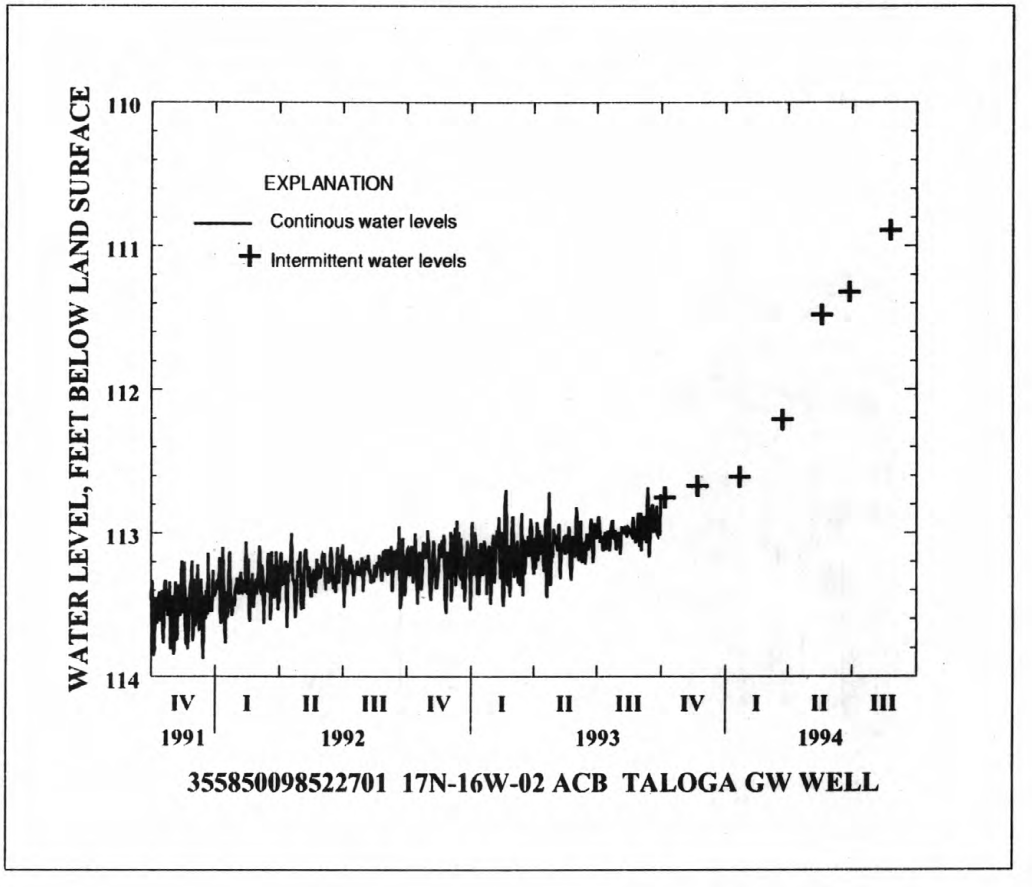
DATUM.--Altitude of land-surface datum is 1,810 ft. Measuring point: shelter base 2.89 ft above land-surface datum.

PERIOD OF RECORD.--April 1989 to current year. Mean daily-water levels published April 1989 to September 1993.

EXTREMES FOR PERIOD OF RECORD.--Highest water level, 110.89 ft below land-surface datum, Aug. 25, 1994; lowest water level, 116.36 ft below land-surface datum, May 27, 1989.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 7, 1993	112.75	May 19, 1994	111.48
Nov. 22, 1993	112.67	June 28, 1994	111.32
Jan. 21, 1994	112.61	Aug. 25, 1994	110.89
Mar. 24, 1994	112.21		



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.

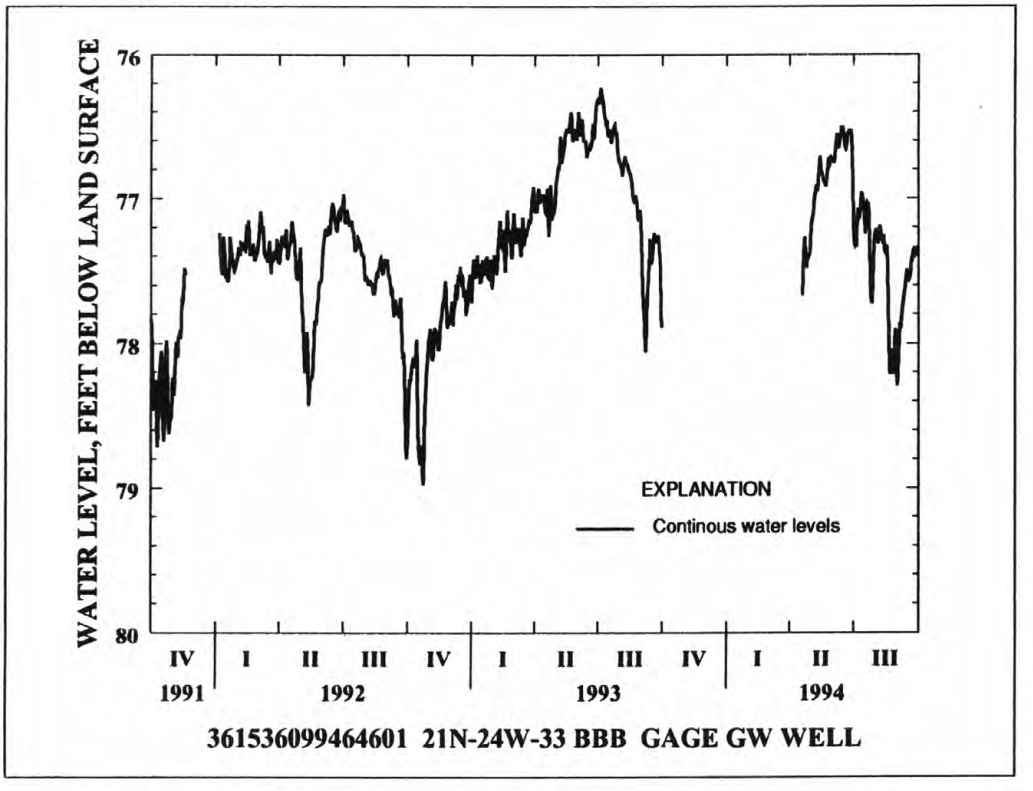
REMARKS.--Digital recorder installed June 2, 1981, mean-daily water levels published thereafter, except Oct. 5, 1993, to April 17, 1994, when bimonthly measurements were made.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	77.07	76.63	77.34	77.32	77.86
10	---	---	---	---	---	---	---	76.95	76.65	77.10	77.28	77.68
15	---	---	---	---	---	---	---	76.80	76.51	77.02	77.39	77.49
20	---	---	---	---	---	---	77.53	76.88	76.66	77.03	77.90	77.49
25	---	---	---	---	---	---	77.47	76.77	76.53	77.54	78.14	77.42
EOM	---	---	---	---	---	---	77.36	76.73	76.91	77.26	78.15	77.33
MAX	---	---	---	---	---	---	---	77.31	76.91	77.73	78.22	78.30
MIN	---	---	---	---	---	---	---	76.71	76.51	76.96	77.19	77.33



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.

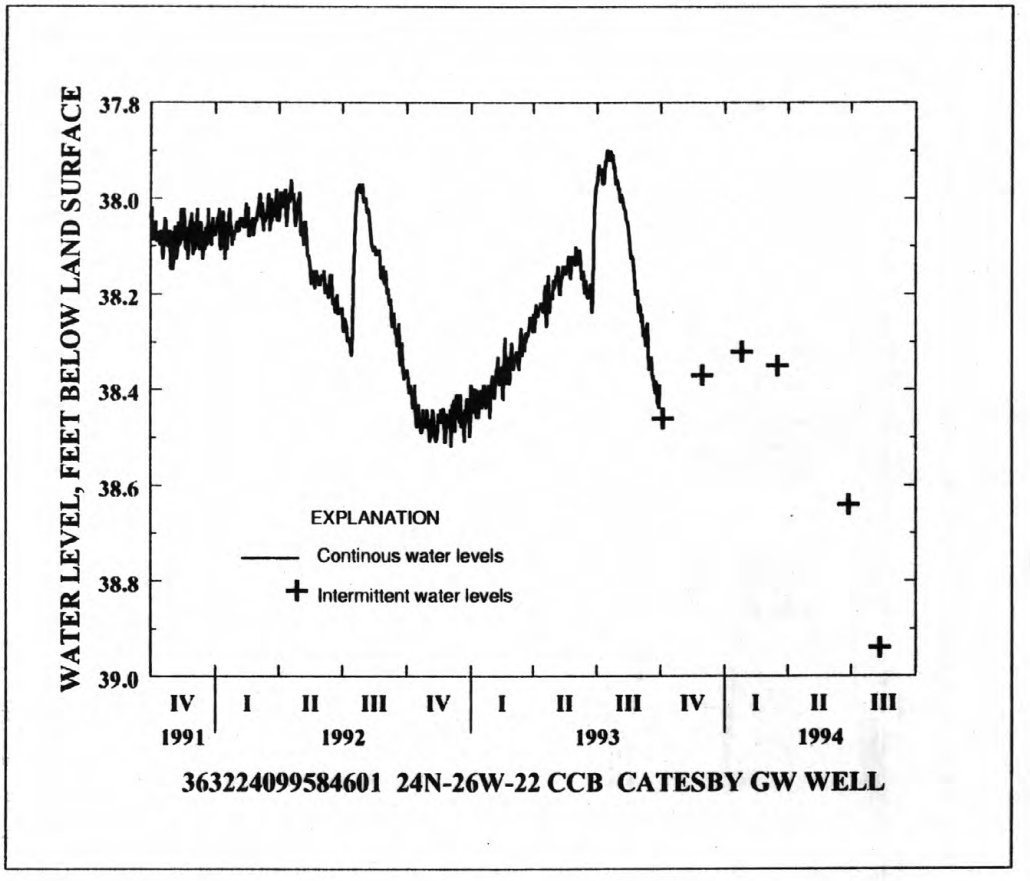
DATUM.--Altitude of land-surface datum is 2,340 ft. Measuring point: top edge of shelter base 2.40 ft above land-surface datum.

PERIOD OF RECORD.--1985 to current year. Mean daily-water levels published until September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 4, 1993	38.46	June 27, 1994	38.64
Nov. 30, 1993	38.37	Mar. 18, 1994	38.35
Jan. 26, 1994	38.32	Aug. 11, 1994	38.94



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.

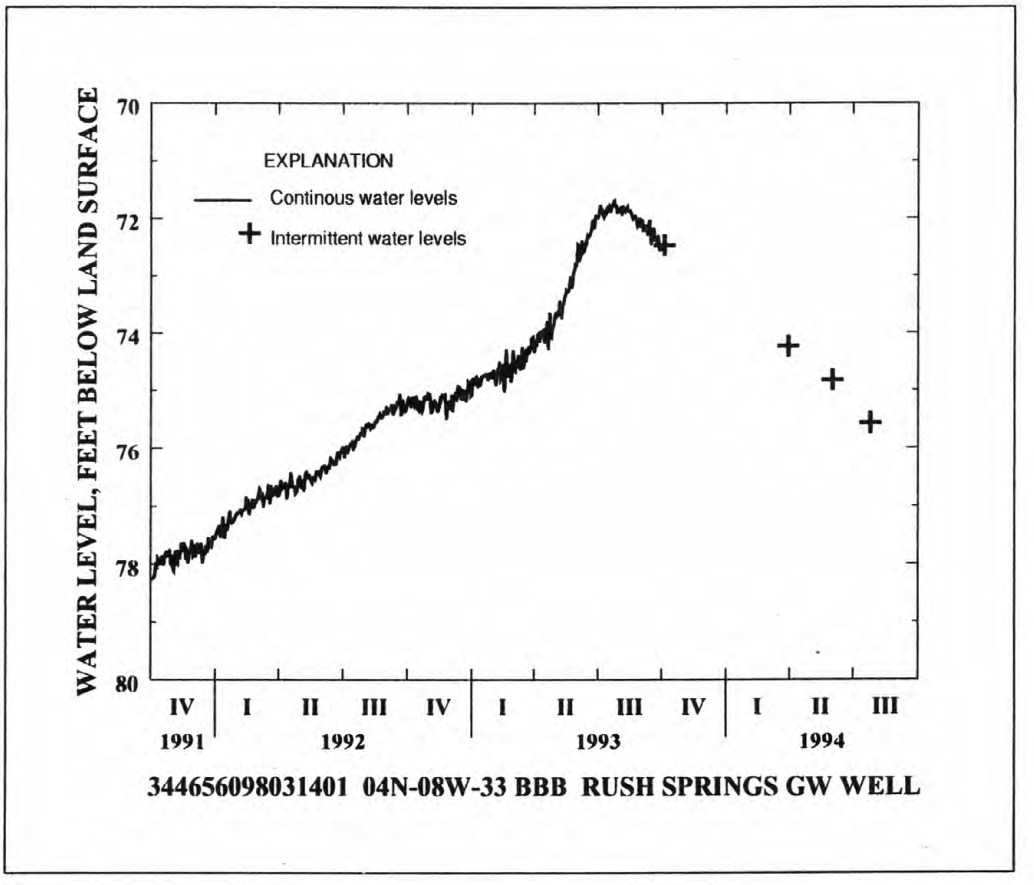
DATUM.--Altitude of land-surface datum is 1,360 ft. Measuring point: top of casing 3.98 ft above land-surface datum.

PERIOD OF RECORD.--1948 to current year. Mean daily-water levels were published October 1980 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 4, 1993	72.47	June 2, 1994	74.82
Mar. 31, 1994	74.23	July 25, 1994	75.57



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.

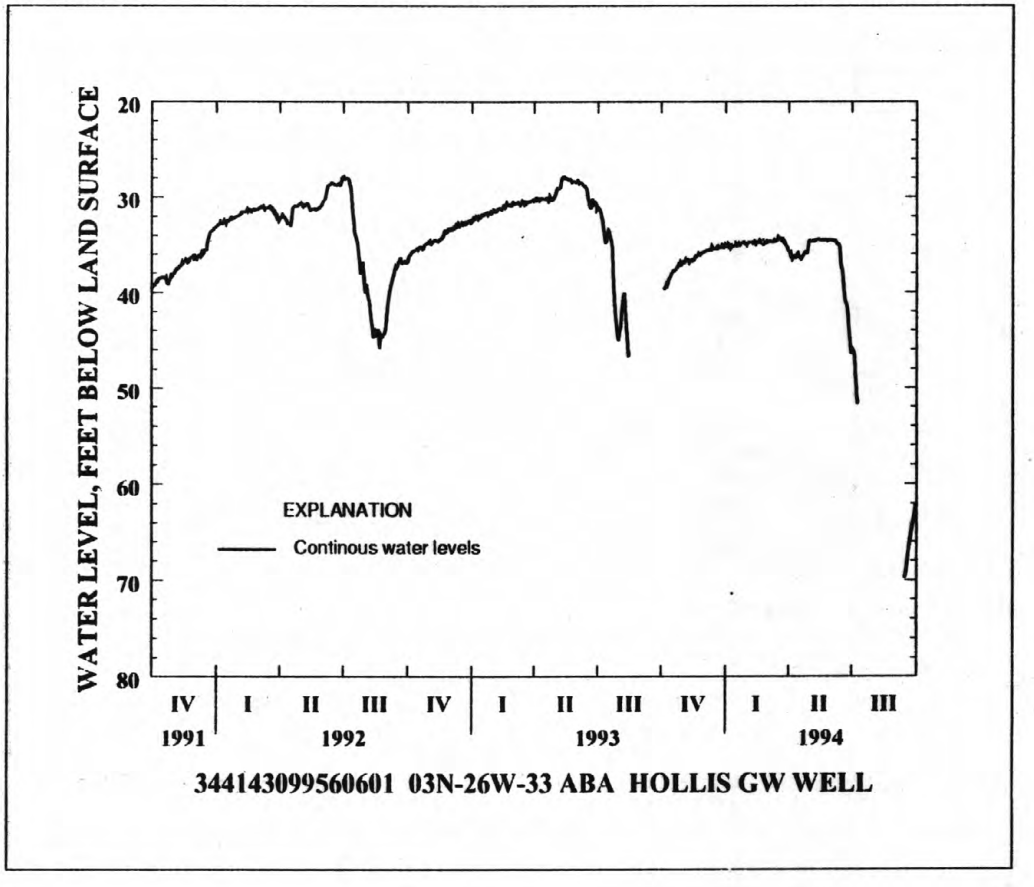
DATUM.--Altitude of land-surface datum is 1,640 ft. Measuring point: top of casing 1.53 ft above land-surface datum.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	39.58	36.72	35.61	34.93	34.72	34.58	36.25	34.60	34.48	48.32	---	---
10	39.14	36.83	35.61	35.08	34.75	34.63	36.37	34.60	34.90	---	---	---
15	38.05	36.63	35.41	35.11	34.76	34.47	36.19	34.52	37.45	---	---	69.35
20	37.65	36.25	35.31	35.09	34.85	34.33	36.32	34.45	40.18	---	---	66.51
25	37.14	36.09	35.27	34.75	34.87	34.70	35.72	34.48	42.93	---	---	64.18
EOM	36.89	35.76	35.06	35.02	34.65	35.48	34.63	34.53	46.36	---	---	61.92
MAX	---	36.85	35.73	35.30	34.95	35.48	36.53	34.61	46.41	---	---	---
MIN	---	35.76	35.06	34.66	34.55	34.26	34.63	34.35	34.48	---	---	---



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.

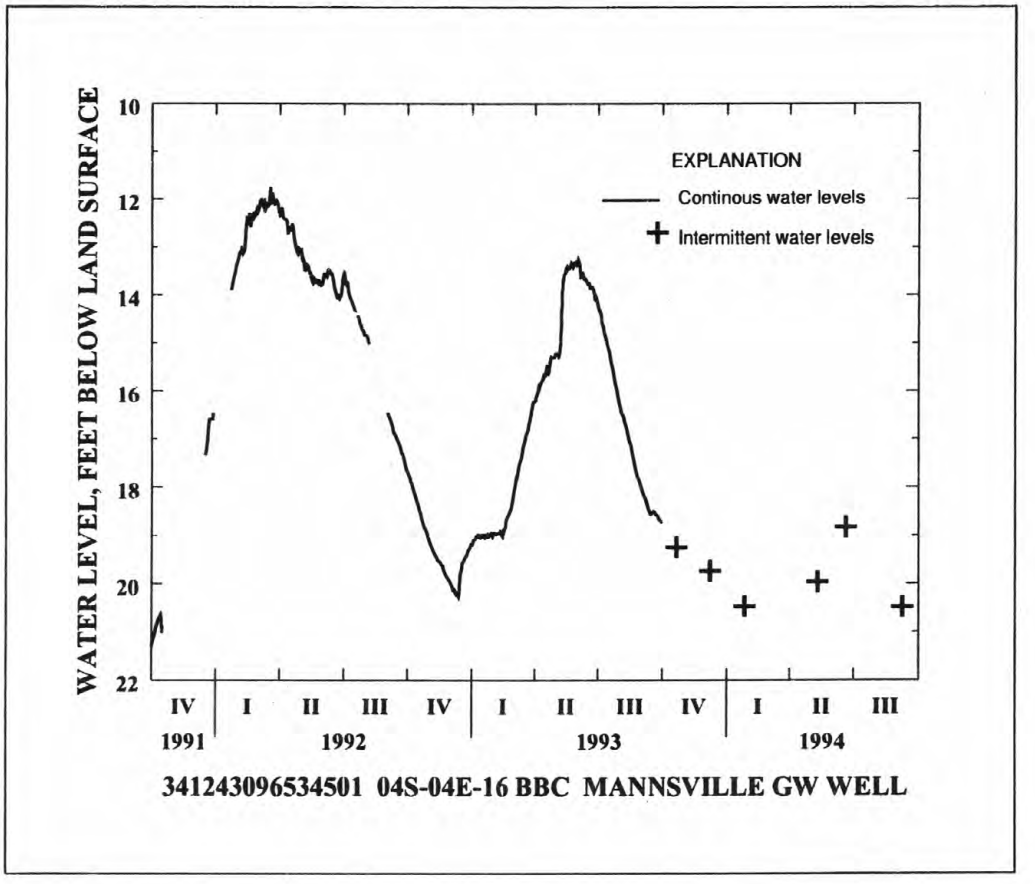
DATUM.--Altitude of land-surface datum is 745 ft. Measuring point: top of casing 1.00 ft above land-surface datum.

PERIOD OF RECORD.--1977 to current year. Mean daily-water levels published July 1983 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 21, 1993	19.24	June 20, 1994	18.83
Dec. 9, 1993	19.73	May 11, 1994	19.96
Jan. 27, 1994	20.47	Sept. 9, 1994	20.48



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.

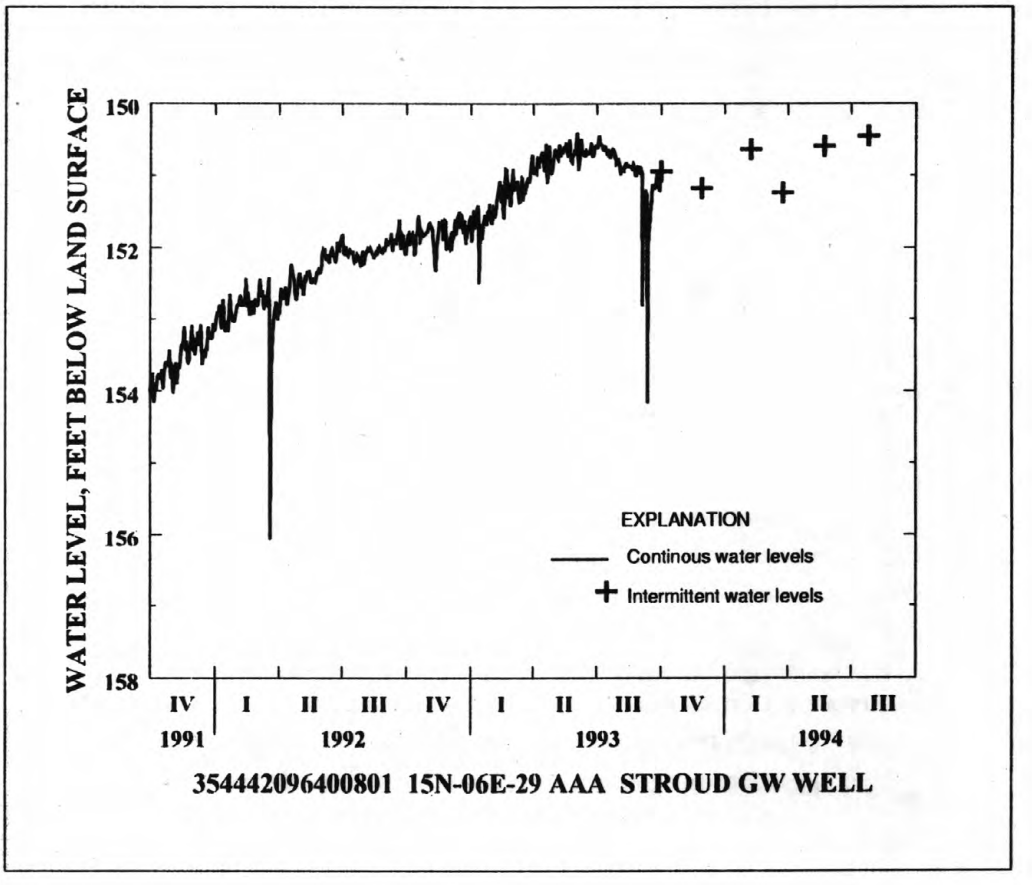
DATUM.--Altitude of land-surface datum is 950 ft. Measuring point: top of casing 1 ft above land-surface datum.

PERIOD OF RECORD.--1977 to current year. Mean daily-water levels were published May 1981 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 1	150.94	Mar. 25	151.24
Nov. 29	151.17	May 23	150.60
Feb. 7	150.64	July 25	150.45



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.

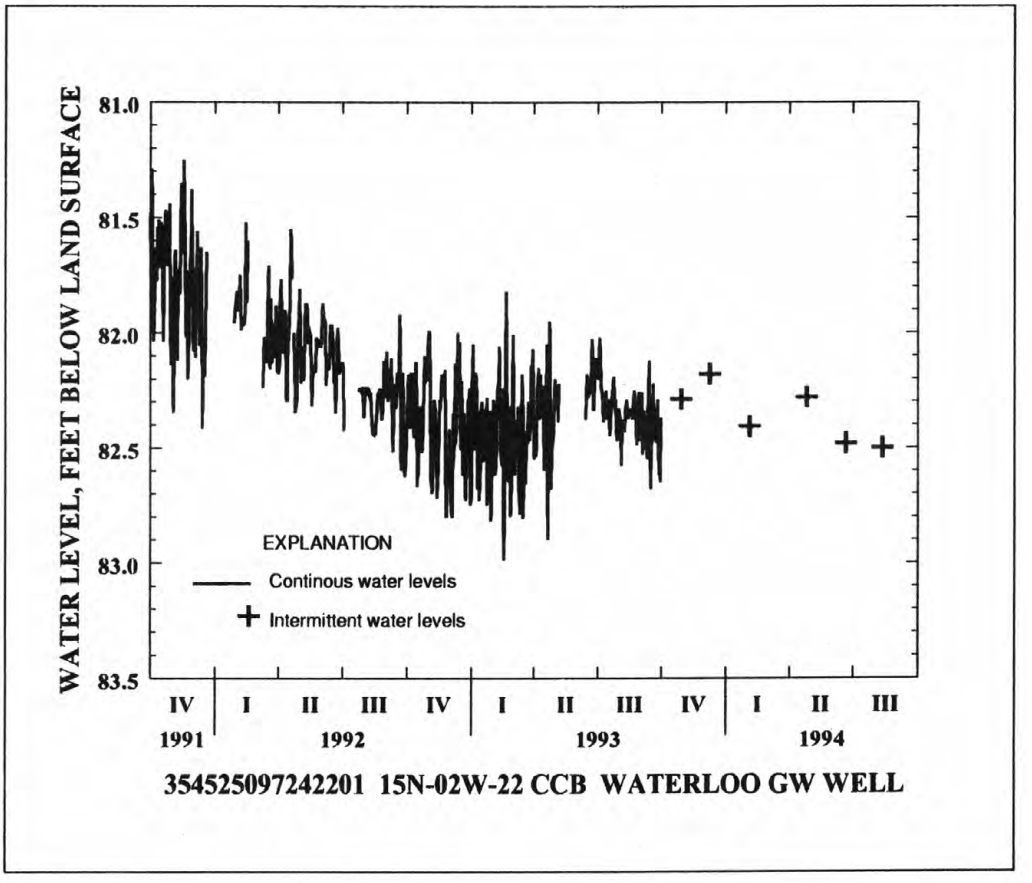
DATUM.--Altitude of land-surface datum is 1,225 ft. Measuring point: top of casing at land-surface datum.

PERIOD OF RECORD.--1983 to current year. Mean daily-water levels published August 1983 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 29, 1993	82.29	June 21, 1994	82.48
Dec. 9, 1993	82.18	Apr. 26, 1994	82.28
Feb. 4, 1994	82.41	Aug. 12, 1994	82.50



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.

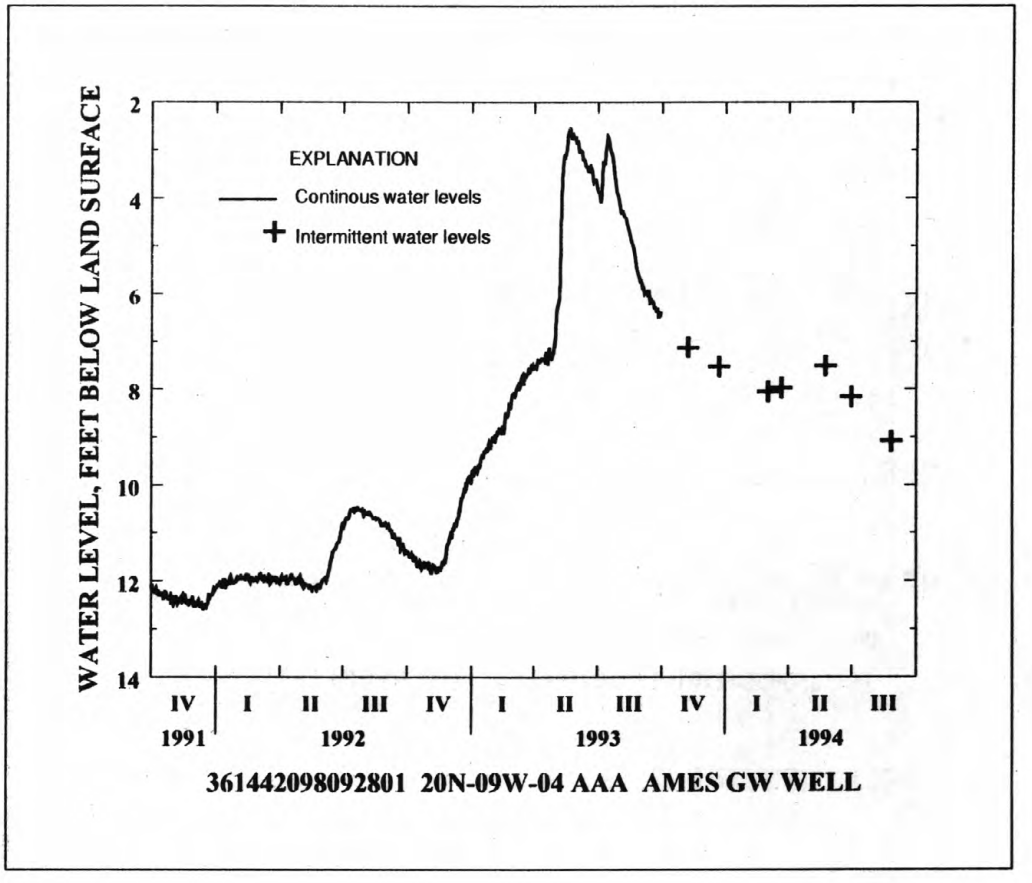
REMARKS.--Digital recorder installed Aug. 25, 1983, mean daily-water levels published until September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Nov. 8, 1993	7.13	May 24, 1994	7.53
Dec. 23, 1993	7.54	June 30, 1994	8.16
Mar. 3, 1994	8.06	Aug. 26, 1994	9.06
Mar. 22, 1994	7.98		



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.

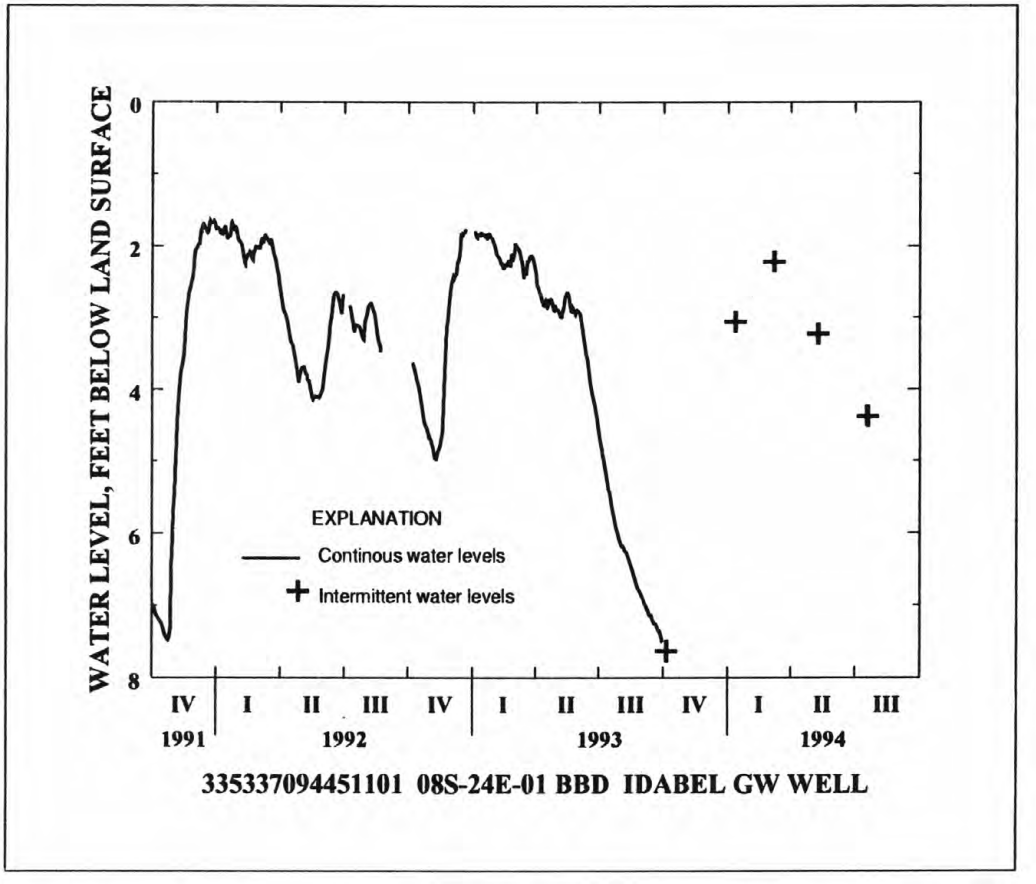
DATUM.--Altitude of land-surface datum is 408 ft. Measuring point: top of casing 1.50 ft above land-surface datum.

PERIOD OF RECORD.--1969 to 1971, 1983 to current year. Mean daily-water levels were published April 1984 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 6, 1993	7.63	Mar. 8, 1994	2.22
Jan. 12, 1994	3.06	May 10, 1994	3.23
		July 19, 1994	4.38



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.

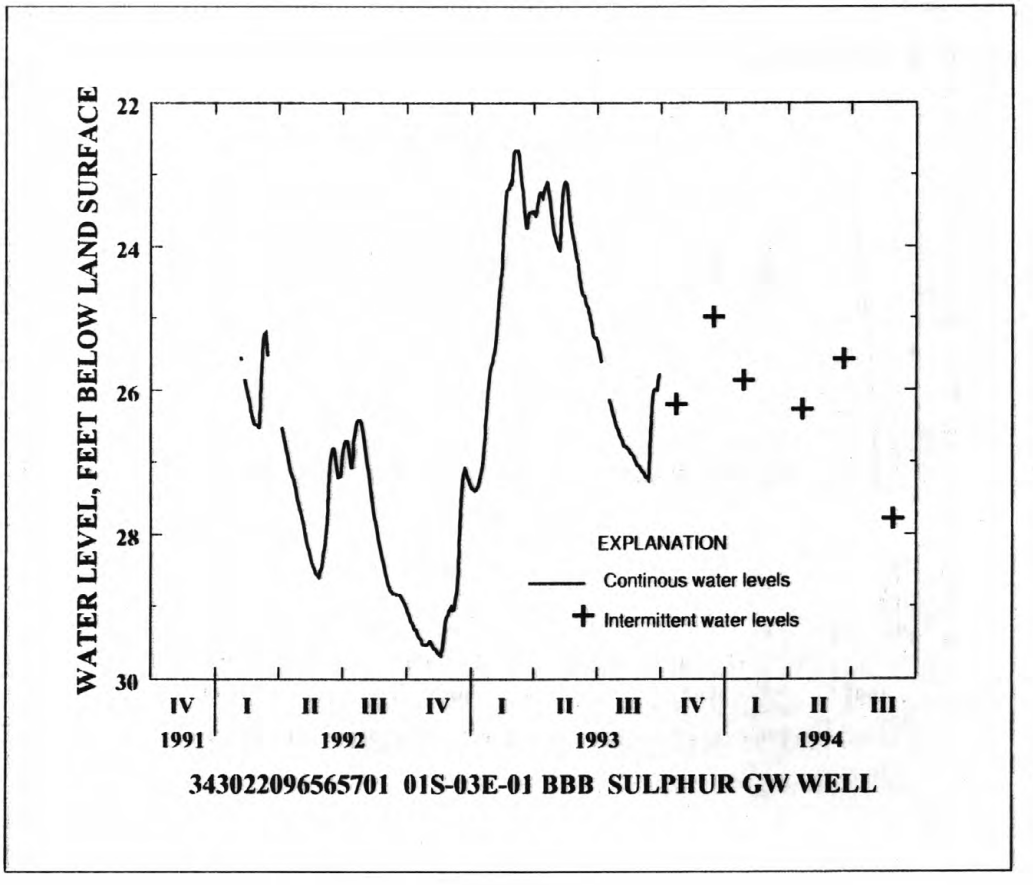
REMARKS.--West observation well, measured depth 99 ft, Feb. 6, 1992.

PERIOD OF RECORD.--August 1972 to current year. Records August 1972 to December 1985 provided by National Park Service. Mean-daily water levels were published January 1986 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 22, 1993	26.20	June 20, 1994	25.58
Dec. 15, 1993	24.99	Apr. 21, 1994	26.27
Jan. 27, 1994	25.87	Aug. 29, 1994	27.79



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.

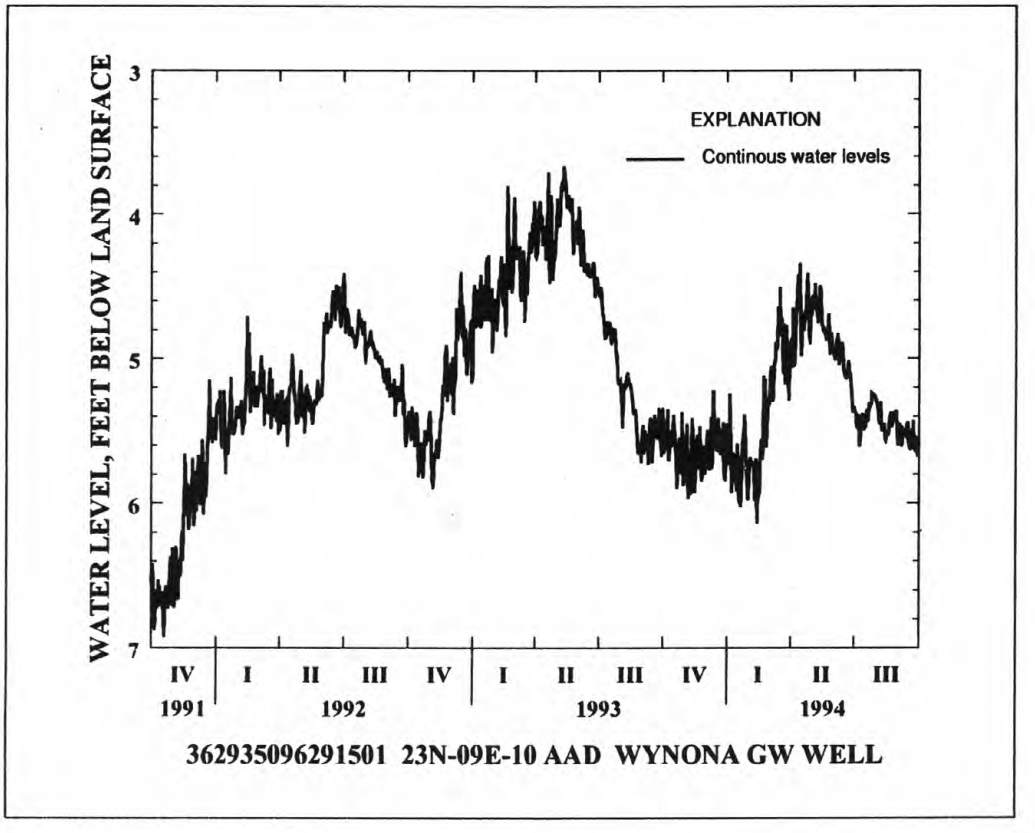
PERIOD OF RECORD.--1971 to current year.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.62	5.83	5.50	5.24	5.74	5.07	4.79	4.62	4.87	5.49	5.46	5.54
10	5.71	5.93	5.76	5.68	5.85	5.01	4.67	4.76	5.02	5.53	5.49	5.52
15	5.50	5.93	5.58	5.92	5.96	4.81	4.80	4.78	5.06	5.50	5.57	5.44
20	5.67	5.76	5.54	6.03	5.70	4.73	4.81	4.79	5.14	5.44	5.41	5.58
25	5.55	5.85	5.65	5.56	5.60	5.13	4.41	4.69	5.11	5.31	5.43	5.63
EOM	5.86	5.80	5.45	5.98	5.27	5.00	4.67	4.96	5.34	5.28	5.53	5.63
MAX	5.90	5.97	5.84	6.03	6.14	5.33	5.07	4.98	5.38	5.60	5.57	5.66
MIN	5.34	5.41	5.23	5.24	5.12	4.51	4.34	4.48	4.83	5.24	5.28	5.43



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.

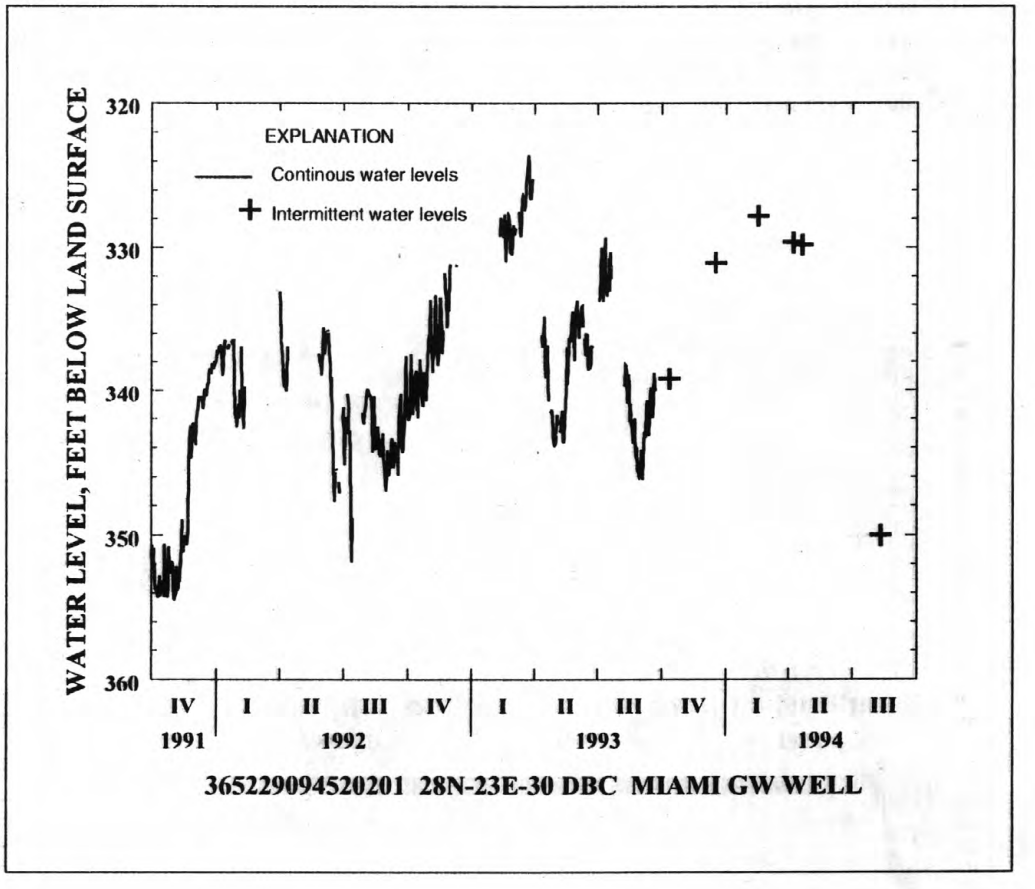
DATUM.--Altitude of land-surface datum 770 ft. Measuring point: top of 6 in. casing 1.00 ft below land-surface datum.

PERIOD OF RECORD.--1980 to current year. Mean daily-water levels published June 1980 to September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 12, 1993	339.20	Apr. 7, 1994	329.69
Dec. 17, 1993	331.05	Apr. 20, 1994	329.80
Feb. 16, 1994	327.80	Aug. 11, 1994	350.01



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.

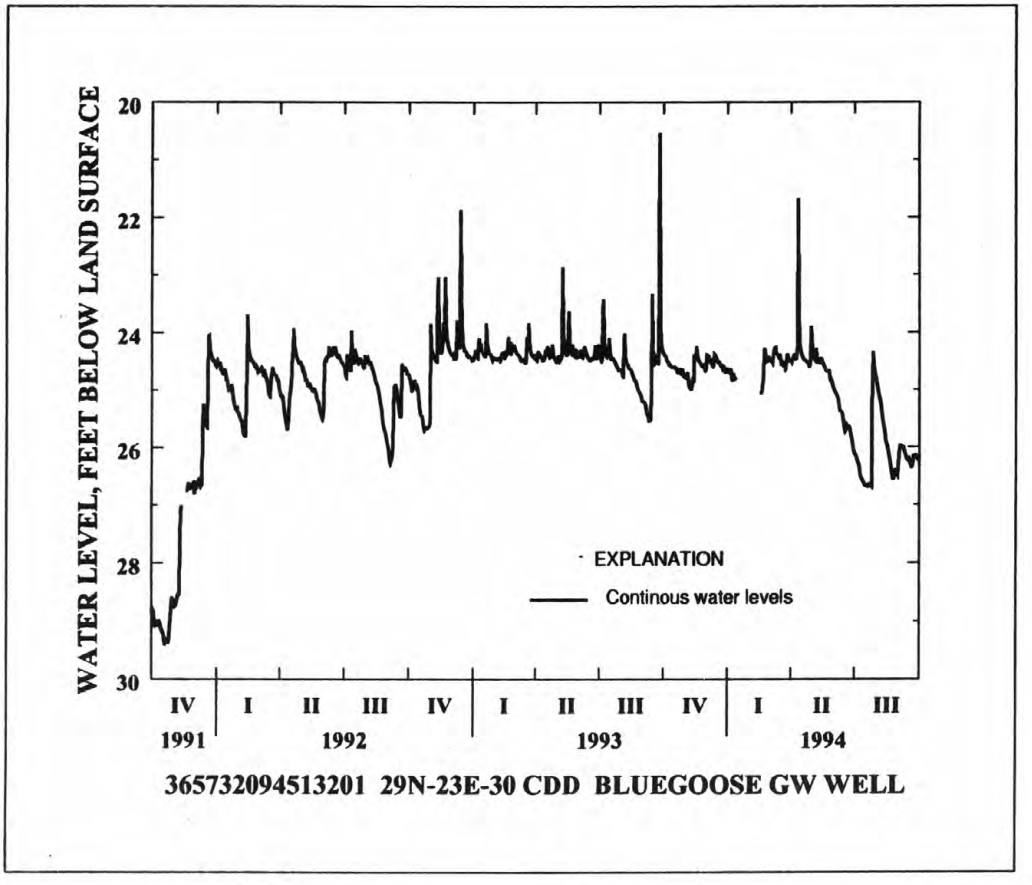
DATUM.--Altitude of land-surface datum is 820 ft. Measuring point: top of casing 1 ft above land-surface datum.

PERIOD OF RECORD.--1975 to current year. Mean daily-water levels published April 1979 to September 1994.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.49	24.84	24.44	24.63	---	24.51	24.41	24.48	25.08	26.28	25.14	25.98
10	24.57	24.99	24.58	24.78	---	24.26	24.22	24.52	25.37	26.53	25.51	26.09
15	24.61	24.46	24.43	---	---	24.46	24.33	24.50	25.58	26.65	25.92	26.24
20	24.64	24.47	24.54	---	24.85	24.51	24.48	24.63	25.64	26.71	26.21	26.35
25	24.65	24.59	24.62	---	24.48	24.61	24.52	24.67	25.78	26.68	26.57	26.18
EOM	24.78	24.66	24.61	---	24.50	24.49	23.89	24.94	26.07	24.77	26.49	26.23
MAX	24.78	24.99	24.70	---	---	24.64	24.62	24.94	26.07	26.71	26.57	26.35
MIN	24.38	24.24	24.38	---	---	24.26	21.67	24.28	24.97	24.33	24.83	25.98



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.

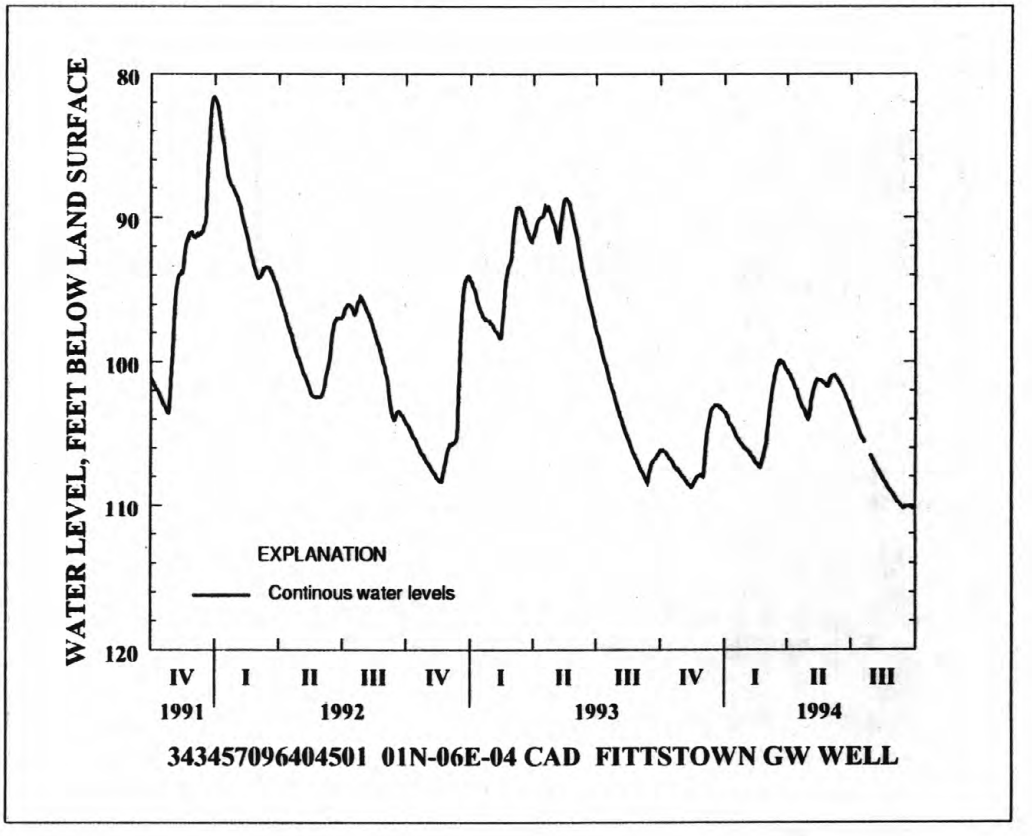
REMARKS.--Well originally 1,707 ft deep.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	106.19	108.17	106.16	103.75	106.26	104.04	100.86	102.81	100.97	103.79	107.18	109.64
10	106.43	108.52	104.11	104.36	106.63	102.28	101.43	101.71	101.12	104.46	107.64	109.98
15	106.74	108.73	103.25	104.84	106.98	100.74	102.10	101.28	101.47	105.03	108.06	110.22
20	107.15	108.28	103.02	105.34	107.31	100.04	102.84	101.32	101.97	105.52	108.44	110.09
25	107.51	107.98	103.14	105.70	106.65	100.09	103.30	101.52	102.48	---	108.86	110.12
EOM	107.90	107.93	103.43	106.08	106.09	100.52	103.92	101.38	103.14	106.67	109.29	110.29
MAX	107.90	108.73	107.93	106.08	107.38	105.91	103.92	103.93	103.14	---	109.29	110.29
MIN	106.12	107.88	103.02	103.51	106.09	99.96	100.55	101.25	100.93	---	106.77	109.37



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.

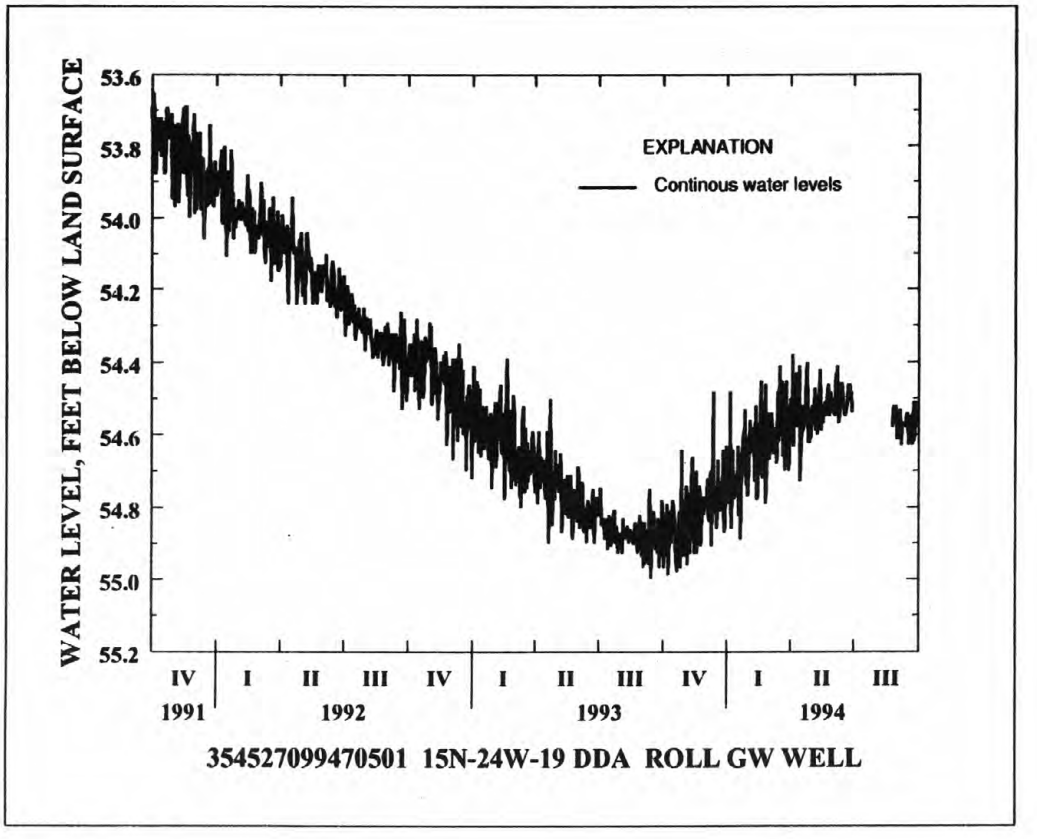
PERIOD OF RECORD.--1971 to current year.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	54.91	54.96	54.81	54.48	54.64	54.54	54.63	54.53	54.43	---	---	54.59
10	54.88	54.84	54.91	54.77	54.62	54.63	54.58	54.60	54.54	---	---	54.57
15	54.78	54.93	54.77	54.77	54.71	54.62	54.73	54.59	54.51	---	---	54.56
20	54.95	54.82	54.80	54.89	54.72	54.55	54.57	54.51	54.53	---	---	54.55
25	54.81	54.88	54.79	54.64	54.79	54.55	54.40	54.46	54.46	---	54.54	54.60
EOM	54.83	54.77	54.63	54.76	54.57	54.54	54.61	54.54	---	---	54.61	54.54
MAX	54.99	54.96	54.91	54.89	54.79	54.70	54.73	54.60	---	---	---	54.63
MIN	54.64	54.66	54.48	54.48	54.45	54.41	54.38	54.42	---	---	---	54.51



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.

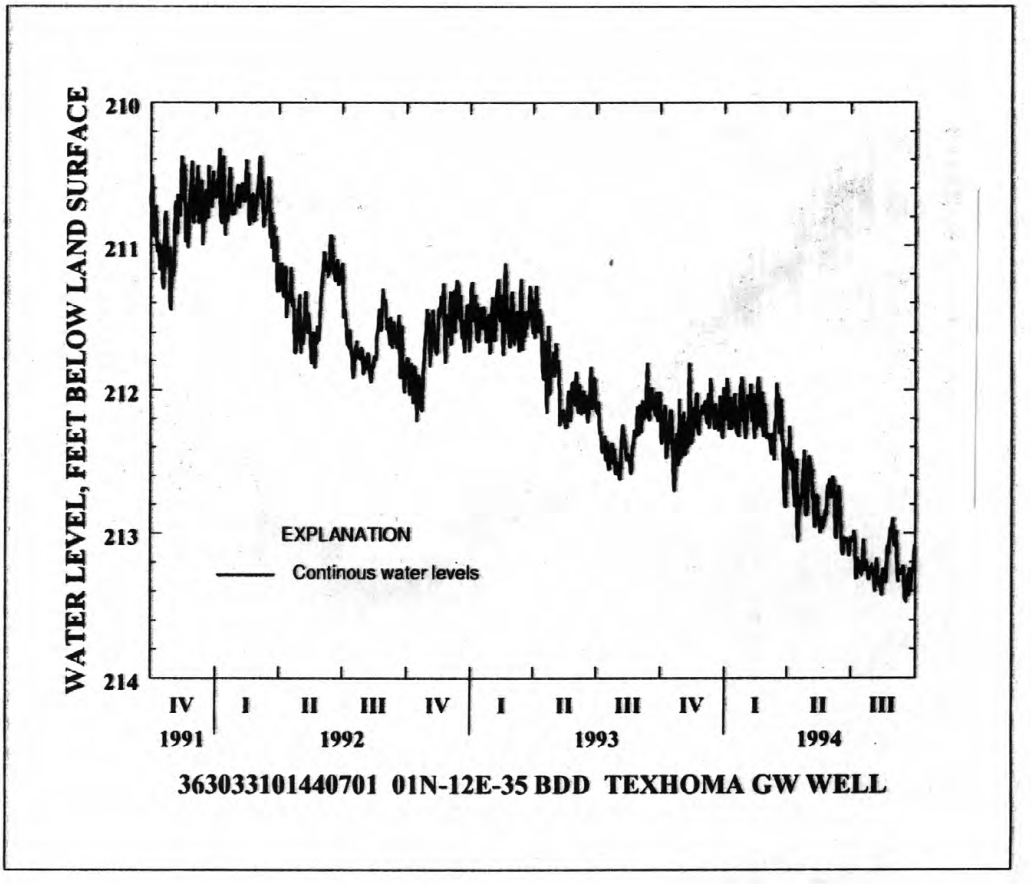
REMARKS.--Digital recorder installed Mar. 17, 1980, mean-daily water levels published thereafter.

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, 213.51 ft below land-surface datum, Sept. 16, 17, 1994.

DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET), WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	212.18	212.45	212.07	211.92	212.10	212.31	212.40	212.58	212.60	213.02	213.41	213.16
10	212.43	212.36	212.27	212.13	212.16	212.45	212.66	212.96	213.04	213.30	213.35	213.25
15	212.13	212.38	212.13	212.21	212.28	212.23	212.87	212.92	212.75	213.27	213.42	213.27
20	212.63	212.25	212.19	212.30	212.19	212.07	212.81	212.89	213.14	213.15	213.35	213.32
25	212.30	212.32	212.27	212.02	212.24	212.36	212.42	212.84	213.03	213.23	213.07	213.41
EOM	212.33	212.10	211.98	212.34	212.09	212.55	212.79	212.66	213.07	213.23	213.01	213.08
MAX	212.71	212.46	212.34	212.34	212.34	212.82	213.06	212.99	213.16	213.33	213.43	213.46
MIN	212.03	211.81	211.92	211.91	211.91	211.95	212.25	212.46	212.60	212.98	212.89	212.99



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.

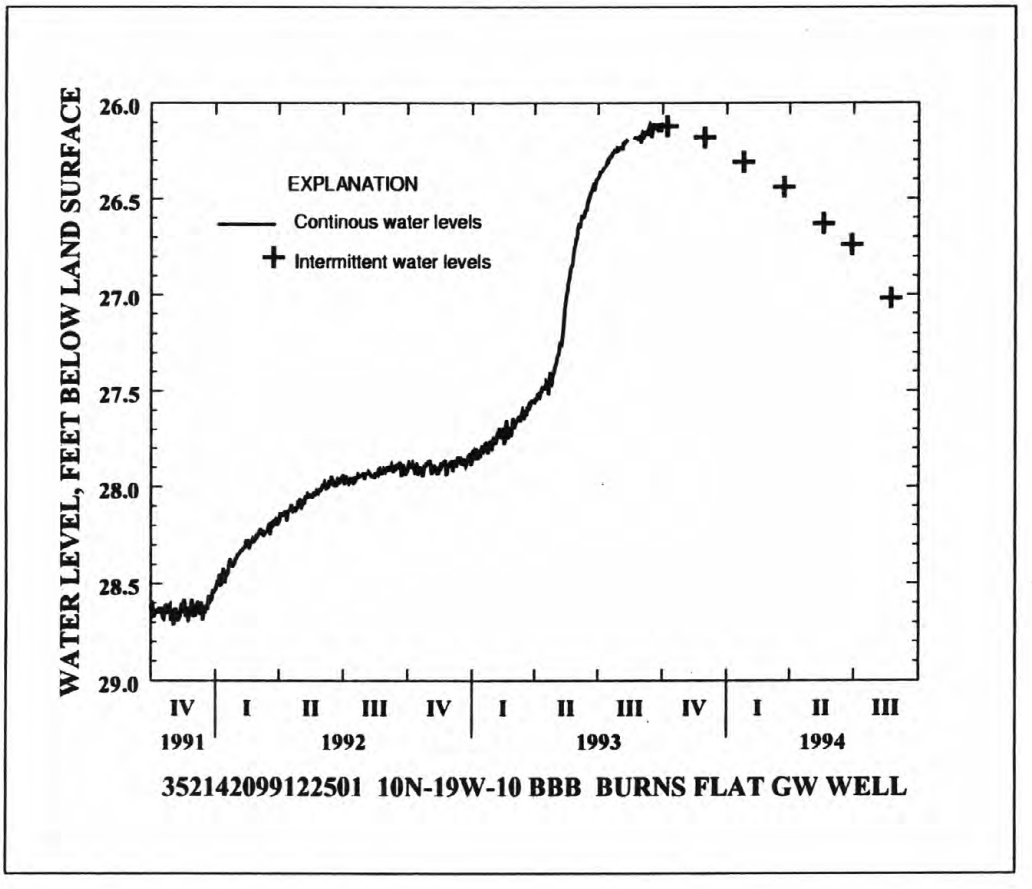
REMARKS.--Digital recorder installed May 20, 1981, mean daily-water levels published until September 1993.

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 1993 TO SEPTEMBER 1994

DATE	WATER LEVEL	DATE	WATER LEVEL
Oct. 7, 1993	26.12	May 19, 1994	26.63
Nov. 30, 1993	26.18	June 28, 1994	26.74
Jan. 25, 1994	26.31	Aug. 23, 1994	27.02
Mar. 23, 1994	26.44		



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.

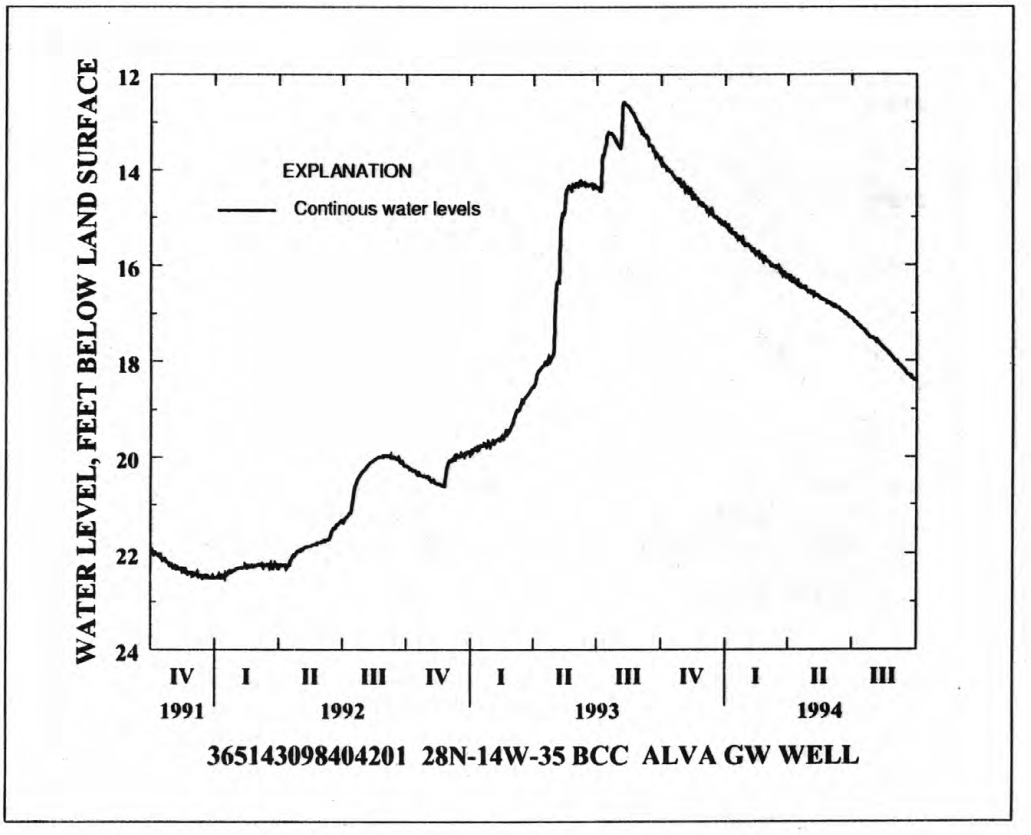
REMARKS.--Digital recorder installed July 30, 1980, mean-daily water levels published thereafter.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	13.92	14.44	14.82	15.14	15.62	15.94	16.30	16.57	16.82	17.17	17.59	18.06
10	14.00	14.46	14.93	15.31	15.68	16.02	16.35	16.63	16.89	17.24	17.65	18.14
15	14.05	14.58	14.97	15.38	15.77	16.07	16.42	16.67	16.93	17.32	17.72	18.22
20	14.18	14.60	15.04	15.48	15.84	16.11	16.44	16.70	16.99	17.40	17.81	18.28
25	14.21	14.71	15.10	15.49	15.91	16.17	16.44	16.73	17.03	17.46	17.88	18.36
EOM	14.31	14.74	15.12	15.60	15.88	16.21	16.56	16.80	17.09	17.52	18.00	18.43
MAX	14.34	14.75	15.18	15.60	15.91	16.25	16.56	16.80	17.09	17.52	18.00	18.43
MIN	13.81	14.30	14.76	15.14	15.57	15.92	16.21	16.54	16.80	17.10	17.53	18.01



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.

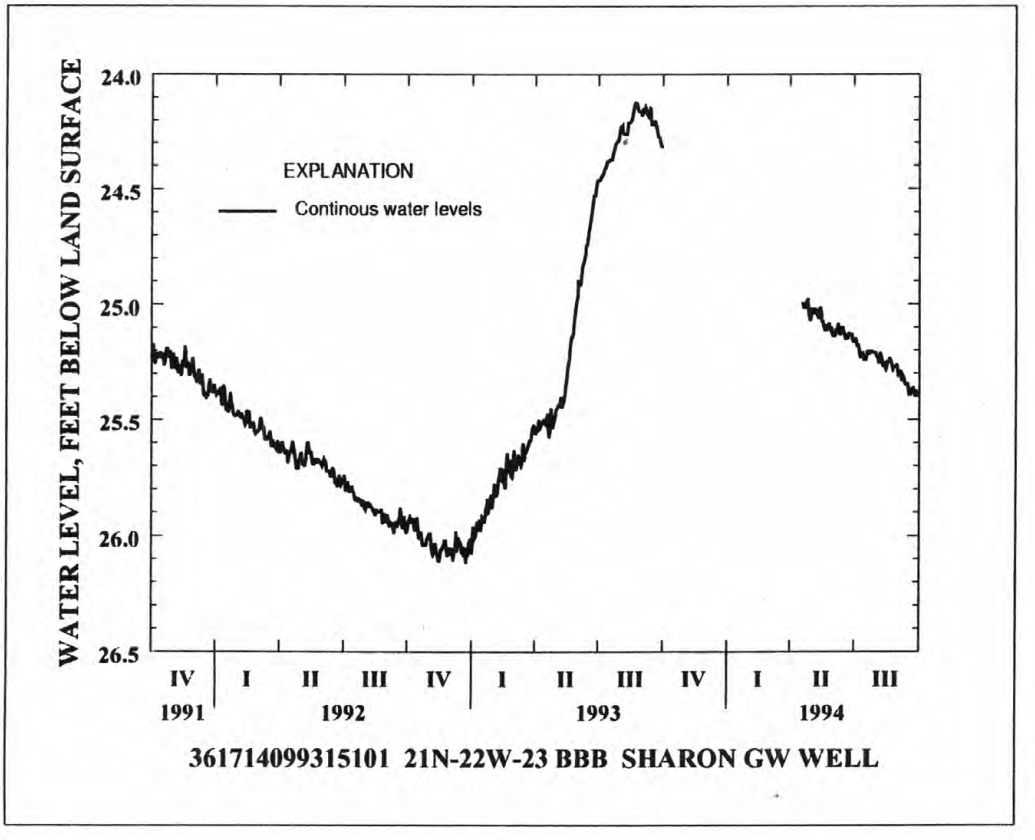
REMARKS.--Digital recorder installed Sept. 30, 1982, mean-daily water levels published thereafter, except Oct. 5, 1993, to Apr. 17, 1994, when bimonthly measurements were made.

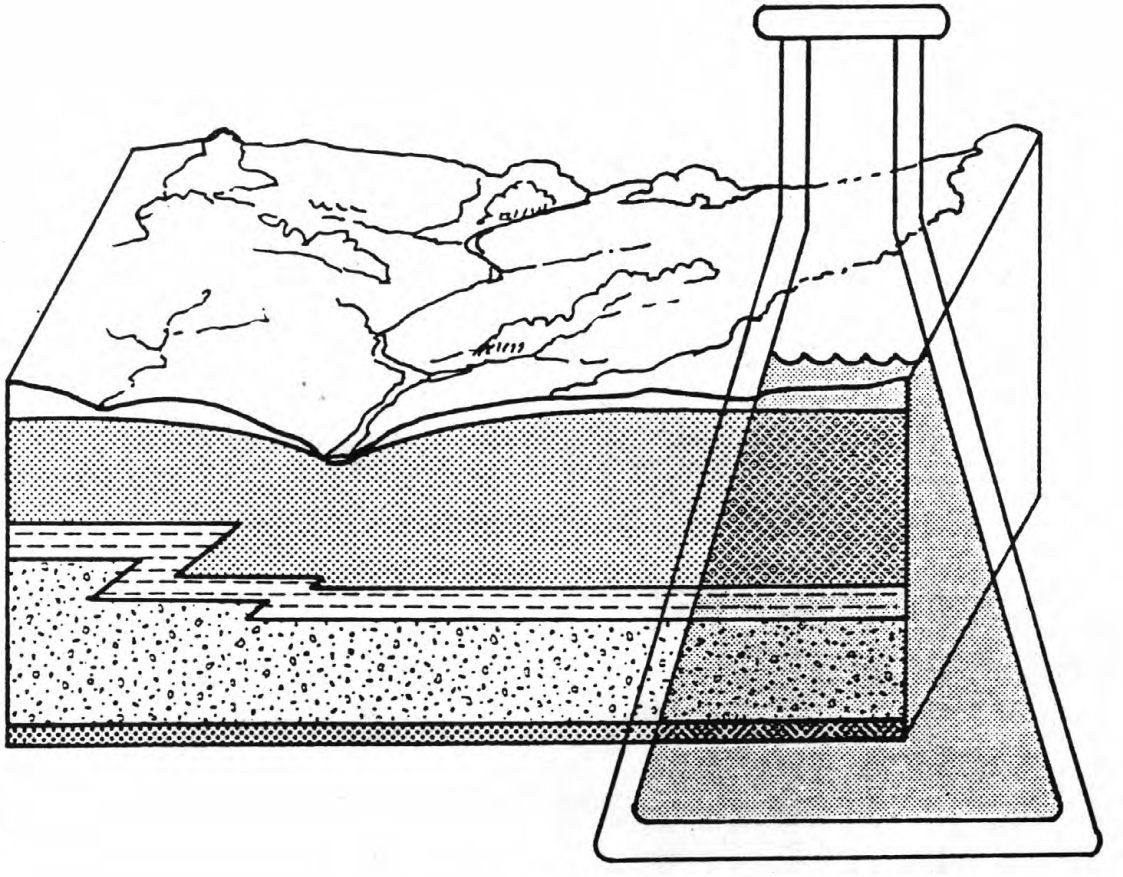
PERIOD OF RECORD.--1957 to 1963, 1965 to current year.

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 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	---	---	25.04	25.11	25.18	25.26	25.29
10	---	---	---	---	---	---	---	25.05	25.13	25.23	25.26	25.34
15	---	---	---	---	---	---	---	25.05	25.10	25.24	25.28	25.34
20	---	---	---	---	---	---	25.01	25.09	25.15	25.20	25.23	25.38
25	---	---	---	---	---	---	24.98	25.09	25.13	25.21	25.28	25.40
EOM	---	---	---	---	---	---	25.06	25.13	25.16	25.21	25.28	25.38
MAX	---	---	---	---	---	---	---	25.13	25.16	25.24	25.28	25.40
MIN	---	---	---	---	---	---	---	25.01	25.08	25.15	25.21	25.29





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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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