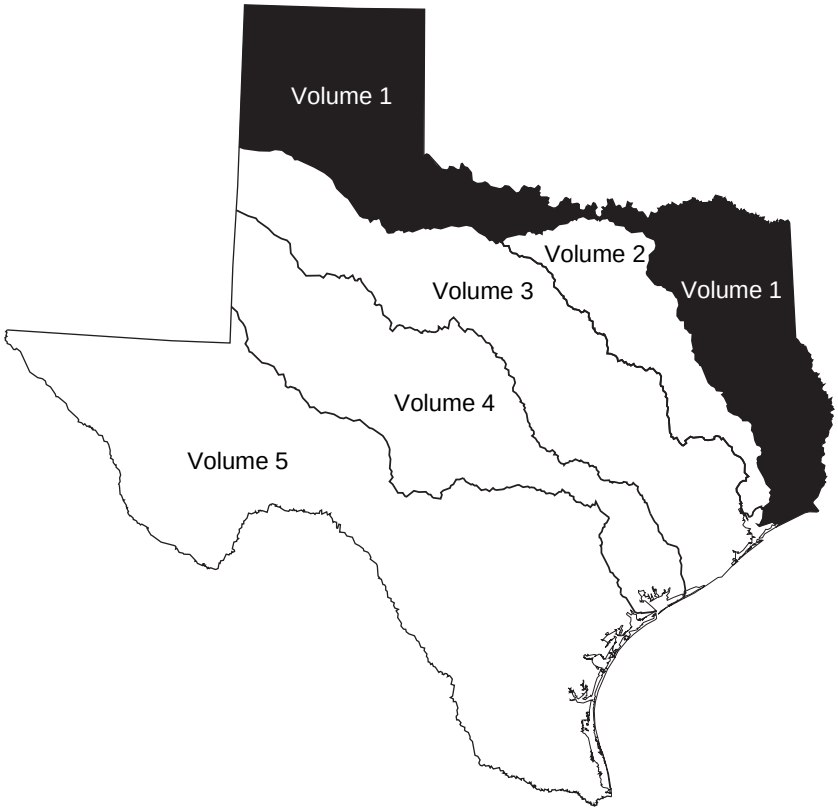
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data
Texas
Water Year 2000

Volume 1. Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, and Intervening Coastal Basins

By S.C. Gandara, W.J. Gibbons, and D.L. Barbie

Water-Data Report TX-00-01



**Prepared in cooperation with the
State of Texas and with other agencies**

UNITED STATES DEPARTMENT OF THE INTERIOR

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PREFACE

This edition of the annual hydrologic data report of Texas is one of a series of annual reports that document hydrologic data collected from the U.S. Geological Survey's collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and quality of water provide the hydrologic information needed by Federal, State, local agencies, and the private sector for developing and managing land and water resources in Texas which are contained in 6 volumes:

Volume 1.	Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, and Intervening Coastal Basins
Volume 2.	Trinity River Basin
Volume 3.	San Jacinto River Basin, Brazos River Basin, San Bernard River Basin, and Intervening Coastal Basins
Volume 4.	Colorado River Basin, Lavaca River Basin and Intervening Coastal Basins
Volume 5.	Guadalupe River Basin, Nueces River Basin, Rio Grande Basin, and Intervening Coastal Basins
Volume 6.	Ground-Water Data

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. In addition to the authors, who had the primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to U.S. Geological Survey policy and established guidelines, most of the data were collected, computed, and processed from Subdistrict and Field Offices. The following supervised the collection, processing, and tabulation of the data:

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13. ABSTRACT *(Maximum 200 words)*

Water-resources data for the 2000 water year for Texas are presented in six volumes, and consist of records of stage, discharge, and water quality of streams and canals; stage, contents, and water-quality of lakes and reservoirs; and water levels and water quality of ground-water wells. Volume 1 contains records for water discharge at 68 gaging stations; stage only at 3 gaging stations; stage and contents at 37 lakes and reservoirs; water quality at 39 gaging stations; and data for 9 partial-record stations comprised of 6 flood-hydrograph and 3 low-flow stations. Also included are lists of discontinued surface-water discharge or stage-only stations and discontinued surface-water-quality stations. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating Federal, State, and local agencies in Texas. Records for a few pertinent stations in the bordering States also are included.

14. SUBJECT TERMS

*Texas, *hydrologic data, *surface water, *water quality, flow rate, gaging stations, lakes, reservoirs, chemical analyses, sediments, water temperature, sampling sites.

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

[Type of data collected: (d) discharge; (c) chemical; (b) biological; (t) water temperature; (s) sediment; (e) elevation, gage heights, or contents.]

	Station number	Page
LOWER MISSISSIPPI RIVER BASIN		
ARKANSAS RIVER BASIN		
Arkansas River:		
Canadian River near Amarillo (d) (c) (t)	07227500	28
Lake Meredith near Sanford (e)	07227900	36
Canadian River near Canadian (d)	07228000	38
Palo Duro Creek near Spearman (d)	07233500	40
Palo Duro Reservoir near Spearman (e)	07233550	44
North Canadian River:		
Wolf Creek at Lipscomb (d)	07235000	46
RED RIVER BASIN		
Prairie Dog Town Fork Red River near Wayside (d)	07297910	50
MacKenzie Reservoir near Silverton (e)	07298100	52
Prairie Dog Town Fork Red River near Childress (d)	07299540	54
Groesbeck Creek at State Highway 6 near Quanah (d)	07299670	56
Salt Fork Red River:		
Greenbelt Lake near Clarendon (e)	07299840	58
Lelia Lake Creek below Bell Creek near Hedley (d) (c) (t)	07299890	60
Salt Fork Red River near Wellington (d) (c) (b)	07300000	66
Salt Fork Red River at Mangum, OK (d)	07300500	70
North Fork Red River:		
McClellan Creek near McLean (d)	07301200	72
North Fork Red River near Shamrock (d) (c) (b)	07301300	74
Sweetwater Creek near Kelton (d)	07301410	76
Red River:		
Pease River near Childress (d)	07307800	80
Pease River near Vernon (d)	07308200	82
Red River near Burkburnett (d) (c) (t)	07308500	84
North Wichita River near Paducah (d) (c) (t)	07311600	94
Middle Wichita River near Guthrie (d) (c) (t)	07311630	104
North Wichita River near Truscott (d) (c) (t) (b)	07311700	114
South Wichita River at low-flow dam near Guthrie (d) (c) (t)	07311782	124
South Wichita River below low-flow dam near Guthrie (d) (c) (t)	07311783	134
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Wichita River near Seymour (d) (c) (t)	07311900	148
Lake Kemp near Mabelle (e)	07312000	158
Wichita River near Mabelle (d) (c) (t)	07312100	160
South Side Canal near Dundee (d)	07312110	170
Wichita River at State Highway 25 near Kamay (d) (c) (t)	07312130	172
Beaver Creek:		
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Wichita River at Wichita Falls (d) (c) (t)	07312500	188
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Lake Kickapoo near Archer City (e)	07314000	202
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Lake Arrowhead near Henrietta (e)	07314800	206
Little Wichita River above Henrietta (d)	07314900	208
East Fork Little Wichita River near Henrietta (d)	07315200	210
Red River near Terral, OK (d) (c)	07315500	212
Lake Nocona near Nocona (e)	07315600	216
Moss Lake near Gainesville (e)	07315950	218
Red River near Gainesville (d)	07316000	220
Lake Texoma near Denison (e)	07331500	222
Red River at Denison Dam near Denison (d) (c) (t)	07331600	226
Shawnee Creek:		
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	Station number	Page
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RED RIVER BASIN--Continued		
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Timber Creek:		
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Sanders Creek:		
Pat Mayse Lake near Chicota (e)	07335390	236
Red River at Arthur City (d)	07335500	238
Pine Creek:		
Lake Crook near Paris (e)	07335600	240
Red River at Index, AR (d) (c) (b) (t) (s)	07337000	244
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South Sulphur River at Commerce (d)	07342465	248
South Sulphur River near Commerce (c) (t) (b)	07342470	250
Middle Sulphur River at Commerce (d) (c) (t) (b)	07342480	252
Cooper Lake near Cooper (e) (c) (t) (b)	07342495	256
South Sulphur River near Cooper (d) (c) (t)	07342500	268
North Sulphur River near Cooper (d)	07343000	272
Sulphur River below Talco (d) (c) (t)	07343210	274
White Oak Creek:		
Lake Sulphur Springs near Sulphur Springs (e)	07343460	278
White Oak Creek near Talco (d)	07343500	282
Wright Patman Lake near Texarkana (e)	07344200	284
Big Cypress Creek:		
Lake Cypress Springs near Mount Vernon (e)	07344484	286
Brushy Creek at Scroggins (d)	07344486	288
Monticello Reservoir near Mount Pleasant (e)	07344488	290
Lake Bob Sandlin near Mount Pleasant (e)	07344489	292
Big Cypress Creek near Pittsburg (d) (c) (t)	07344500	294
Lake O' the Pines near Jefferson (e) (c) (t) (b)	07345900	298
Big Cypress Creek near Jefferson (d) (c) (t)	07346000	314
Black Cypress Bayou at Jefferson (d)	07346045	318
Little Cypress Creek near Ore City (d)	07346050	320
Little Cypress Creek near Jefferson (d)	07346070	322
Caddo Lake near Mooringsport, LA (e)	07346310	324
WESTERN GULF OF MEXICO BASINS		
SABINE RIVER BASIN		
Sabine River:		
Cowleech Fork Sabine River at Greenville (d)	08017200	328
South Fork Sabine River near Quinlan (d)	08017300	330
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	Station number	Page
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Sabine River near Bon Wier (d) (c) (t)	08028500	374
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NECHES RIVER BASIN		
Neches River:		
Flat Creek:		
Lake Athens near Athens (e)	08031290	384
Lake Palestine near Frankston (e)	08031400	388
Neches River near Neches (d) (c) (t)	08032000	392
Talls Creek:		
Gum Creek:		
Lake Jacksonville near Jacksonville (e)	08032200	396
Neches River near Diboll (d)	08033000	400
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Angelina River:		
Mud Creek:		
Lake Tyler near Whitehouse (e)	08034000	406
Angelina River near Alto (d)	08036500	410
Bayou Loco:		
Lake Nacogdoches near Nacogdoches (e)	08036700	412
Attoyac Bayou near Chireno (d)	08038000	414
Ayish Bayou near San Augustine (d)	08039100	416
Sam Rayburn Reservoir near Jasper (e)	08039300	418
B.A. Steinhagen Lake at Town Bluff (e)	08040000	420
Neches River near Town Bluff (d)	08040600	422
Neches River at Evadale (d) (c) (t)	08041000	424
Village Creek near Kountze (d)	08041500	428
Pine Island Bayou near Sour Lake (d)	08041700	430
TAYLOR BAYOU BASIN		
Taylor Bayou near LaBelle (e)	08042000	434
Hillebrandt Bayou near Lovell Lake (e)	08042500	436

The following continuous-record surface-water discharge or stage-only stations (gaging stations) in Texas have been discontinued. Daily streamflow or stage records were collected and published for the period of record, expressed in water years, shown for each station. Those stations with an asterisk (*) after the station number are currently operated as partial-record stations. Discontinued project stations with less than 3 years of record have not been included. Information regarding these stations may be obtained from the District Office at the address given on the title page of this report.

[Letters after station name designate the type of data collected: (d) discharge, (e) elevation (stage only).]

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Punta De Agua Creek near Channing (d)	07227448	3,568	1968-73
East Chyenne Creek Tributary near Channing (e)	07227460	0.86	1965-74
Canadian River at Tascosa (d)	07227470	18,536	1969-77
Tecovas Creek Tributary near Bushland (e)	07227480	2.5	1966-74
Dixon Creek near Borger (d)	07227920	134	1974-89
Palo Duro Creek near Canyon (e)	07229700	982	1942-54
White Woman Creek Tributary near Darrouzett (e)	07234150	4.03	1966-74
Tierra Blanca Creek above Buffalo Lake near Umbarger (d)	07295500	1,968	1939-54, 1967-73
Buffalo Lake near Umbarger (e)	07296000	2,075	1938-54
Tierra Blanca Creek below Buffalo Lake near Umbarger (d)	07296100	2,075	1967-73
Prairie Dog Town Fork Red River near Canyon (d)	07297500	3,369	1924-26, 1938-49
Middle Tule Draw near Tulia (e)	07297920	313	1967-74
North Tule Draw at Reservoir near Tulia (d)	07298000	189	1939-40, 1941-73
Rock Creek Tributary near Silverton (d)	07298150	13.7	1966-74
Tule Creek near Silverton (d)	07298200	1,150	1964-86
Prairie Dog Town Fork Red River near Brice (d)	07298500	6,082	1939-44, 1949-51, 1960-63
Mulberry Creek near Brice (d)	07299000	534	1949-51
Prairie Dog Town Fork Red River near Lakeview (d)	07299200	6,792	1963-80
Little Red River near Turkey (d)	07299300	139	1968-81
Prairie Dog Town Fork Red River near Estelline (d)	07299500	7,293	1924-25, 1938-47
Prairie Dog Town Fork Red River below Mountain Creek near Estelline (e)	07299505	7,341	1974-77
Prairie Dog Town Fork Red River above Jonah Creek near Estelline (e)	07299510	7,533	1974-77
Jonah Creek at Weir near Estelline (d)	07299512	65.50	1974-82
Jonah Creek below Weir near Estelline (d)	07299514	66.60	1974-76
Jonah Creek at mouth near Estelline (d)	07299516	76	1974-76
Salt Creek near Estelline (d)	07299530	142	1974-79
Buck Creek near Wellington (e)	07299550	210	1951-64
Red River near Quanah (d)	07299570	8,321	1960-82
North Groesbeck Creek Tributary near Kirkland (d)	07299575	0.16	1966-74
Wanders Creek at Odell (e)	07299750	199	1949-50, 1952-89
Salt Fork Red River near Clarendon (d)	07299850	457	1960-64
Lelia Lake Creek near Hedley (e)	07299900	86	1951-70
Salt Fork Red River near Hedley (e)	07299930	744	1951, 1956-62
Oklahoma Draw Tributary near Hedley (e)	07299940	1.1	1965-74
Sweetwater Creek near Wheeler (e)	07301400	164	1951-64
Doodlebug Creek near Wheeler (e)	07301405	0.19	1967-73
Elm Creek near Shamrock (e)	07303300	N/A	1947-89
Quitaque Creek near Quitaque (d)	07307500	293	1945-59
North Pease River near Childress (d)	07307600	1,434	1973-79
North Pease River near Kirkland (e)	07307660	N/A	1973-79
Roaring Springs near Roaring Springs (e)	07307700	N/A	1937, 1943-95
Cottonwood Creek Tributary near Afton (e)	07307720	0.68	1967-74
Middle Pease River near Paducah (d)	07307750	1,086	1973-79
Middle Pease River near Paducah (d)	07307760	1,123	1980-82

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Middle Pease River near Kirkland (e)	07307780	1,250	1973-79
Canal Creek near Crowell (e)	07307950	49.0	1968-70, 1978-79
Pease River near Crowell (d)	07308000	3,037	1924-47
Plum Creek near Vernon (e)	07308220	4.99	1967-74
China Creek near Electra (e)	07308400	37	1967-76
North Fork Wichita River near Crowell (d)	07311622	591	1971-76
Middle Fork Wichita River near Truscott (d)	07311648	161	1971-76
South Fork Wichita River near Guthrie (d)	07311780	239	1952-54, 1956-57 1971-76
South Fork Wichita River at Ross Ranch near Benjamin (d)	07311790	499	1971-79
Beaver Creek near Electra (d)	07312200*	652	1960-99
Beaver Creek Tributary near Crowell (e)	07312140	3.43	1966-74
Wolf Creek near Iowa Park (e)	07312300	8.5	1966-74
North Fork Little Wichita River Tributary near Archer City (e)	07314200	0.10	1966-74
Little Wichita River near Henrietta (d)	07315000	1,037	1953-79
Little Wichita River near Ringgold (d)	07315400	1,350	1959-65
Farmers Creek near Saint Jo (e)	07315550	0.82	1966-74
Mineral Creek near Sadler (d)	07316200	26	1968-77
Sandy Creek near Sadler (e)	07316230	24	1968-74
Lake Texoma near Denison (e)	07331500	39,719	1943-93
Red River at Denison Dam near Denison (d)	07331600	39,720	1924-89
Bois D'Arc Creek near Randolph (d)	07332600	72	1963-85
Cooper Creek near Bonham (e)	07332602	6.21	1966-74
Pat Mayse Lake near Chicota (d)	07335390	175	1968-96
Sanders Creek near Chicota (d)	07335400	175	1968-86
Little Pine Creek near Kanawha (d)	07336750	75.40	1969-80
Pecan Bayou near Clarksville (d)	07336800	100	1962-77
Red River near DeKalb (d)	07336820	47,348	1967-98
McKinney Bayou near Leary (e)	07336940	3.33	1966-73
Barkman Creek near Leary (e)	07336950	31.5	1958-64
Nelson Branch near Leonard (e)	07342450	0.22	1966-74
South Sulphur River near Commerce (d)	07342470	189	1980-91
Cuthand Creek near Bogata (d)	07343300	69	1964-74
Dial Branch near Bagwell (e)	07343350	1.00	1966-74
White Oak Creek near Mt. Vernon (e)	07343480	434	1966, 1969-75
White Oak Creek below Talco (d)	07343800	579	1938-50
Buck Creek near Cookville (e)	07343900	0.78	1966-74
Sulphur River near Darden (d)	07344000	2,774	1924-56
Sulphur River near Texarkana (d)	07344210	3,443	1980-85
Big Cypress Creek near Winnsboro (d)	07344482	27.2	1974-92
Dragoo Creek near Mt. Pleasant (e)	07344490	4.27	1967-74
Williamson Creek near Pittsburg (e)	07344600	7.11	1967-74
Boggy Creek near Daingerfield (d)	07345000	72	1943-77
Ellison Creek Reservoir near Lone Star (e)	07345500	37	1943-62, 1974-89
Cypress Creek Tributary near Jefferson (e)	07346010	0.51	1966-74
Taylor Branch near Smithland (e)	07346072	0.73	1966-74
Big Cypress Creek near Karnack (e)	07346085	2,174	1980-85
Frazier Creek near Linden (d)	07346140	48.0	1965-91
Sabine River near Emory (d)	08017500	888	1952-73
Burnett Branch near Canton (e)	08017700	0.33	1966-74
Grand Saline Creek near Grand Saline (d)	08018200	91.4	1968-73
Burke Creek near Yantis (d)	08018730	33.10	1979-89
Dry Creek near Quitman (e)	08018950	63.6	1968-75
Lake Winnsboro near Winnsboro (d)	08019300	27.1	1962-86
Big Sandy Creek near Hawkins (e)	08019430	196	1980-82
Prairie Creek near Gladewater (d)	08020200	48.90	1968-77

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Sabine River near Longview (d)	08020500	2,947	1904-07, 1924-33
Rabbit Creek at Kilgore (d)	08020700	75.80	1964-77
Grace Creek Tributary at Longview (e)	08020800	5.05	1967-74
Mill Creek near Henderson (d)	08020960	20.30	1979-81
Mill Creek near Longview (d)	08020980	47.90	1979-81
Tiawichi Creek near Longview (d)	08020990	62.70	1978-81
Cherokee Bayou near Elderville (d)	08021000	120	1940-49
Lake Cherokee near Longview (e)	08021500	158	1951-83
Sabine River near Tatum (d)	08022000	3,493	1939-78,
" " " " (e)			1979-82
Redmon Branch near Hallesville (e)	08022010	0.46	1966-74
Eight Mile Creek near Tatum (e)	08022050	106	1962-71
Martin Creek near Tatum (d)	08022070	148	1974-96
Martin Creek near Beckville (e)	08022080	192	1962-71
Murvaul Bayou near Gary (d)	08022300	134	1958-83
Socagee Creek near Carthage (d)	08022400	82.60	1962-73
Tenaha Creek near Shelbyville (d)	08023200	97.80	1952-81
Dorsey Branch near Milam (e)	08024290	0.70	1967-74
Patroon Bayou near Milam (e)	08024300	130	1952-54, 1959-63
Sabine River near Milam (d)	08024400	6,508	1924-25, 1939-68
Palo Gaucho Bayou near Hemphill (d)	08024500	123	1952-65
Housen Bayou near Yellowpine (e)	08025250	92.1	1952-54, 1957, 1959-63
Sandy Creek near Yellowpine (e)	08025300	135	1952-54, 1957, 1959-63
Mill Creek near Burkeville (d)	08025307	17.6	1974-79
Little Cow Creek below McGraw Creek near Burkeville (e)	08026500	112	1952-58
Moore Branch near Newton (e)	08028505	3.77	1967-74
Nichols Creek near Buna (e)	08029750	54.4	1959-64
Cypress Creek near Buna (d)	08030000	69.20	1952-83
Adams Bayou Tributary near Deweyville (e)	08030700	12.4	1966-74
Cow Bayou near Mauriceville (d)	08031000	83.30	1952-86
Bethlehem Branch near Van (e)	08031100	1.09	1966-74
Kickapoo Creek near Brownsboro (d)	08031200	232	1962-89
Neches River near Reese (d)	08031500	851	1924-27
Hurricane Creek Tributary near Palestine (e)	08032100	0.39	1966-74
One Arm Creek near Maydelle (e)	08032250	6.01	1967-74
Squirrel Creek near Elkhart (e)	08032300	1.57	1967-74
Neches River near Alto (d)	08032500	1,945	1944-79
Piney Creek Tributary near Pennington (e)	08033250	1.17	1967-74
Piney Creek near Groveton (d)	08033300	79	1962-89
Shawnee Creek Tributary near Huntington (e)	08033450	0.52	1966-74
Greenwood Creek Tributary near Colmesneil (e)	08033480	0.15	1966-74
Bowles Creek near Selman City (e)	08033600	14.5	1968-85
Striker Creek near Summerfield (d)	08033700	146	1941-49
Striker Creek Reservoir near New Salem (e)	08033800	148	1941-49
East Fork Angelina River near Cushing (d)	08033900	158	1964-89
Mud Creek near Jacksonville (d)	08034500	376	1939-79
Mud Creek at Ponta (d)	08035000	475	1924-27
Angelina River near Lufkin (d)	08037000	1,600	1924-34, 1939-79
Bayou Lanana at Nacogdoches (d)	08037050	31.3	1965-86, 1988-93
Gingham Branch near Mt. Enterprise (e)	08037300	0.90	1967-74
Arenoso Creek near San Augustine (d)	08037500	75.30	1938-40
Angelina River near Zavalla (d)	08038500	2,892	1952-65

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Ayish Bayou at San Augustine (d)	08039000	15.80	1924-25
Angelina River at Horger (d)	08039500	3,486	1928-51, 1967-73
Little Sandy Creek Tributary near Jasper (e)	08039900	0.46	1967-74
Drakes Branch near Spurger (e)	08041400	5.03	1967-74
Hillebrandt Bayou near Lovell Lake (d)	08042500	128	1954-84
West Fork Double Bayou near Anahuac (e)	08042550	4.43	1967-74
North Creek SWS No. 28-A near Jermyn (e)	08042650	6.82	1972-80
North Creek near Jacksboro (d)	08042700	21.60	1956-80
Beans Creek at Wizard Wells (e)	08042900	29.60	1993-95
West Fork Trinity River at Bridgeport (d)	08043100	1,113	1984-89
West Fork Trinity River at Bridgeport (d)	08043500	1,147	1908-30
Big Sandy Creek near Bridgeport (d)	08044000	333	1937-95
Garrett Creek near Paradise (e)	08044135	52.5	1992-95
Salt Creek near Paradise (e)	08044140	52.7	1992-95
Walker Creek near Boyd (e)	08044200	2.95	1965-74
West Fork Trinity River at Lake Worth, Fort Worth (d)	08045500	2,069	1924-34
Clear Fork Trinity River near Aledo (d)	08046000	251	1947-75
Marine Creek at Fort Worth (d)	08048500	16.80	1950-58
Sycamore Creek at I.H. 35W, Fort Worth (d)	08048520	17.70	1970-76
Sycamore Creek Trib. above Seminary South, Fort Worth (d)	08048530	0.97	1970-76
Sycamore Creek Trib. at I.H. 35W, Fort Worth (d)	08048540	1.35	1970-76
Dry Branch at Fain Street at Fort Worth (d)	08048600	2.15	1969-76
Big Fossil Creek at Haltom City (d)	08048800*	52.8	1959-73
Little Fossil Creek at I.H. 820, Fort Worth (e)	08048820	5.64	1969-73
Little Fossil Creek at Mesquite Street, Fort Worth (d)	08048850	12.30	1969-76
Deer Creek Tributary near Crowley (e)	08048900	5.86	1967-74
Village Creek at Kennedale (d)	08048980	100	1986-89
Village Creek near Handley (d)	08049000	126	1925-30
Big Bear Creek near Grapevine (d)	08049550	29.6	1967-79
Trigg Branch at DFW Airport near Euless (d)	08049565	1.73	1983-87
Mountain Creek near Cedar Hill (d)	08049600	119	1961-84
Mountain Creek above Duncanville (e)	08049850	224	1986-87
Mountain Creek near Duncanville (e)	08049900	225	1971-90
Mountain Creek near Grand Prairie (d)	08050000	273	1925-33
Elm Fork Trinity River SWS 6-O near Muenster (e)	08050200	0.77	1957-73
Elm Fork Trinity River near Muenster (d)	08050300	46	1957-73
Elm Fork Trinity River near Sanger (d)	08050500	381	1949-85
Isle Du Bois Creek near Pilot Point (d)	08051000	266	1949-85
Elm Fork Trinity River near Pilot Point (d)	08051130	692	1985-92
Elm Fork Trinity River above Aubrey (e)	08051190	684	1981-89
Elm Fork Trinity River near Denton (d)	08052000	1,084	1924-27
Lake Dallas near Lake Dallas (e)	08052500	1,165	1929-57
Little Elm Creek SWS #10 near Gunter (e)	08052630	2.10	1966-72
Little Elm Creek near Celina (d)	08052650	46.70	1966-76
Hickory Creek at Denton (d)	08052780	129	1985-87
Indian Creek at Hebron Parkway at Carrollton (d)	08053010	15.0	1987-90
Furneaux Creek at Josey Lane at Carrollton (d)	08053030	4.10	1987-90
Hutton Branch at Broadway at Carrollton (e)	08053090	9.10	1987-90
Jones Valley Creek Tributary near Forestburg (e)	08053100	1.70	1966-74
Denton Creek near Roanoke (d)	08054000	621	1924-28, 1939-55
Gamble Branch near Argyle (e)	08054200	0.50	1965-74
Denton Creek near Grapevine (d)	08055000	705	1948-91
Joe's Creek at Royal Lane, Dallas (e)	08055580	1.94	1973-78
Joes Creek near Dallas (e)	08055600	7.4	1964-79
Bachman Branch at Dallas (d)	08055700	10	1964-79
Turtle Creek at Dallas (d)	08056500	7.98	1952-80, 1984-91
Coombs Creek at Sylvan Avenue, Dallas (e)	08057020	4.75	1965-78

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Cedar Creek at Bonnie View Road, Dallas (e)	08057050	9.42	1965-78
White Rock Creek at Keller Springs Road, Dallas (d)	08057100	29.40	1961-79
Spanky Branch at McCallum Lane at Dallas (e)	08057120	6.77	1962-78
Rush Branch at Arapaho Road, Dallas (e)	08057130	1.22	1973-78
Cottonwood Creek at Forest Lane, Dallas (e)	08057140	8.50	1962-78
Floyd Branch at Forrest Lane, Dallas (e)	08057160	4.17	1962-78
White Rock Creek at White Rock Lake, Dallas (d)	08057300	100	1963-79
Ash Creek at Highland Road, Dallas (e)	08057320	6.92	1963-78
Forney Creek at Lawnview Avenue, Dallas (e)	08057340	1.84	1963-72
White Rock Creek at Scyene Road, Dallas (d)	08057400	122	1963-79
Elm Creek at Seco Boulevard, Dallas (e)	08057415	1.25	1973-78
Fivemile Creek at Kiest Boulevard, Dallas (e)	08057418	7.65	1974-78
Fivemile Creek at US Highway 77 West, Dallas (e)	08057420	14.30	1965-78
Woody Branch at US Highway 77 West, Dallas (e)	08057425	10.30	1965-78
Fivemile Creek at Lancaster Road, Dallas (e)	08057430	37.90	1965-78
Newton Creek at Interstate Highway 635, Dallas (e)	08057135	5.91	1974-78
Trinity River below Dallas (d)	08057410	6,278	1956-58
White Branch at Interstate Highway 635, Dallas (e)	08057440	2.53	1974-78
Tenmile Creek at State Highway 342 at Lancaster (d)	08057450	52.80	1970-79
Honey Creek SWS #11 near McKinney (e)	08057500	2.14	1952-73
Honey Creek SWS #12 near McKinney (e)	08058000	1.26	1952-77
Honey Creek near McKinney (d)	08058500	39	1951-73
East Fork Trinity River near McKinney (d)	08059000	190	1949-75
Arls Branch near Westminster (e)	08059200	0.52	1965-74
Sister Grove Creek near Princeton (d)	08059500	113	1949-75
East Fork Trinity River above Pilot Grove near Lavon (d)	08060000	324	1949-53
East Fork Trinity River near Lavon (d)	08061000	773	1954-89
East Fork Trinity River near Rockwall (d)	08061500	840	1924-54
Duck Creek at Buckingham Road, Garland (e)	08061620	8.05	1969-76
Duck Creek near Garland (d)	08061700	31.6	1958-93
South Mesquite Creek at State Highway 352, Mesquite (e)	08061920	13.40	1969-76
South Mesquite Creek at Mercury Road near Mesquite (d)	08061950	23	1969-79
Cedar Creek Reservoir Spillway Outflow near Trinidad (d)	08062650	1,007	1966-82
Cedar Creek near Kemp (d)	08062800	189	1963-87
Bachelor Creek near Terrell (e)	08062850	13.0	1967-74
Kings Creek near Kaufman (d)	08062900	233	1963-87
Lacey Fork near Mabank (d)	08062980	118	1983-84
Cedar Creek near Mabank (d)	08063000	733	1939-66
South Twin Creek near Eustace (d)	08063003	27.40	1983-84
Red Oak Branch near Eustace (e)	08063005	0.90	1966-74
Cedar Creek at Trinidad (d)	08063020	1,011	1965-71
Briar Creek Tributary near Corsicana (e)	08063180	0.72	1966-74
Pin Oak Creek near Hubbard (d)	08063200	17.60	1956-72
Richland Creek near Richland (d)	08063500	734	1939-88
Alvarado Branch near Alvarado (e)	08063550	0.84	1966-74
Kings Branch near Reagor Springs (e)	08063620	0.62	1966-74
Chambers Creek near Corsicana (d)	08064500	963	1939-84
Richland Creek near Fairfield (d)	08064600	1,957	1972-83
Saline Branch Tributary near Bethel (e)	08064630	0.22	1967-74
Catfish Creek near Tennessee Colony (d)	08064800	207	1962-89
Mayes Branch near Latexo (e)	08065320	4.26	1967-74
Trinity River near Midway (d)	08065500	14,450	1939-71
Caney Creek near Madisonville (d)	08065700	112	1963-77
Nelson Creek near Riverside (e)	08065950	86.4	1949, 1965, 1970-74
Harmon Creek near Huntsville (e)	08065975	89.2	1973-81
West Carolina Creek near Oakhurst (e)	08066050	15.2	1949, 1966-73
White Rock Creek near Trinity (e)	08066100	222	1974-85
White Rock Creek near Trinity (e)	08066130	228	1966-74

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Tantaboque Creek near Trinity (e)	08066140	61.3	1966-73
Caney Creek near Groveton (e)	08066145	41.4	1966-73
Brushy Creek near Onalaska (d)	08066150	29.1	1966-70
Rocky Creek near Onalaska (e)	08066180	40.6	1966-73
Livingston Reservoir outflow weir near Goodrich (d)	08066191	16,583	1969-94
Long King Creek near Goodrich (d)	08066210	220	1972-81
Bluff Creek Tributary near Livingston (e)	08066280	0.62	1965-74
Big Creek near Shepherd(e)	08066400	38.80	1966-89
Gaylor Creek near Moss Hill (e)	08066800	32.3	1966-73
Devers Canal near Liberty (d)	08067080	N/A	1972-82
Cedar Bayou at Crosby (d)	08067500*	65.0	1972-91
Goose Creek near McNair (e)	08067520	6.7	1963-65,
Welch Branch near Huntsville (e)	08067550	2.35	1965-74
Lake Conroe near Montgomery (e)	08067580	445	1973-76
Lake Conroe at Outflow Weir near Conroe (d)	08067610	445	1974, 1977-89
Caney Creek near Dobbin (d)	08067700	40.40	1963-65
Landrum Creek Tributary near Montgomery (e)	08067750	0.13	1965-74
Lake Creek near Conroe (e)	08067900	291	1969-89
West Fork San Jacinto River near Porter (e)	08068100	970	1970-76
Mill Creek Tributary near Dobbin (e)	08068300	4.07	1967-73
Swale No. 8 at Woodlands (e)	08068438	0.55	1975-76, 1980-88
Spring Creek at Spring (d)	08068520	419	1975-95
Spring Creek near Humble (e)	08068600	435	1971-76
Cypress Creek at Sharp Road near Hockley (d)	08068700	80.7	1975-85
Cypress Creek near Cypress (e)	08068750*	138	1971-76
Little Cypress Creek near Cypress (d)	08068780*	41.0	1983-92
Cypress Creek at Grant Road near Houston (d)	08068800*	214	1983-92
Cypress Creek at Stuebner-Airline Road near Westfield (d)	08068900*	248	1982-87
Cypress Creek near Humble (e)	08069200	319	1971-76
West Fork San Jacinto River near Humble (d)	08069500	1,741	1929-54
Bear Creek near Cleveland (e)	08069850	1.46	1967-73
Caney Creek near New Caney (e)	08070600	178	1970-76
Peach Creek near New Caney (e)	08071100	155	1970-76
Tarkington Bayou near Dayton (e)	08071200	142	1964-76
Luce Bayou near Huffman (e)	08071300	226	1971-76
San Jacinto River near Huffman (d)	08071500	2,800	1937-53
Buffalo Bayou at Clodine (e)	08072400	84.2	1974-85
Langham Creek at West Little York Road, Addicks (d)	08072760*	25.0	1977-85
Bettina Street Ditch at Houston (e)	08073630	1.37	1979-85
Stony Brook Street Ditch at Houston (e)	08073750	0.50	1967-72
Bering Ditch at Woodway Drive, Houston (e)	08073800	2.77	1965-73
Cole Creek at Guhn Road at Houston (e)	08074100	7.05	1964-72
Bingle Road Storm Sewer at Houston (e)	08074145	0.21	1980-88
Cole Creek at Deihl Road at Houston (d)	08074150*	7.50	1964-86
Brickhouse Gully at Clarblak Street at Houston (e)	08074200	2.56	1965-83
Brickhouse Gully at Costa Rica Street at Houston (d)	08074250*	11.4	1964-81
Lazybrook Street Storm Sewer, Houston (e)	08074400	0.13	1978-88
Little White Oak Bayou at Houston (e)	08074550	20.9	1971-79
Buffalo Bayou at Main St., Houston (d)	08074600*	469	1962-94
Buffalo Bayou at 69th Street, Houston (e)	08074700	476	1961-86
Brays Bayou at Addicks-Clodine Rd., Houston (e)	08074750	0.87	1974-77
Brays Bayou at Alief Road, Alief (e)	08074760*	12.9	1977-85
Keegans Bayou at Keegans Road near Houston (e)	08074780*	7.47	1964-71
Keegans Bayou at Roark Road near Houston (d)	08074800*	13.0	1964-85
Bintliff Ditch at Bissonnet Street, Houston (e)	08074850	4.38	1968-82
Willow Waterhole Bayou at Landsdowne Street, Houston (e)	08074900	3.81	1965-72
Hummingbird Street Ditch at Mullins Street, Houston (e)	08074910	0.32	1979-84
Brays Bayou at Scott Street, Houston (e)	08075100	106	1971-81

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Sims Bayou at Carlsbad Street, Houston (e)	08075300	3.81	1964-72
Sims Bayou at MLK Blvd., Houston (e)	08075470	48.4	1978-89
Berry Bayou at Gilpin Street, Houston (e)	08075550	2.87	1965-84
Berry Bayou Tributary at Globe Street, Houston (e)	08075600	1.58	1965-72
Berry Bayou at Forest Oaks Street, Houston (e)	08075650*	10.7	1968-82
Berry Bayou at Galveston Road, Houston (e)	08075700	4.86	1965-72
Huntington Bayou Tributary at Cavalcade Street, Houston (e)	08075750	1.20	1965-72
Huntington Bayou at Falls Street, Houston (e)	08075760	2.75	1964-84
Halls Bayou at Deertrail Street at Houston (e)	08076200	8.69	1965-84
Carpenters Bayou at Cloverleaf (e)	08076900	25.8	1964, 1971-93
Clear Creek near Pearland (d)	08077000	38.8	1944-45, 1946-60, 1963-94
Clear Creek Tributary at Hall Road, Houston (e)	08077100	1.31	1965-86
Clear Creek at Friendswood (d)	08077540	99.6	1994-97
Cowart Creek near Friendswood (e)	08077550	18	1965-74
Clear Creek near Friendswood (e)	08077600	126	1966-94
Armand Bayou near Genoa (e)	08077620	18.2	1968, 1971-73
Highland Bayou at Hitchcock (e)	08077700	15.6	1963-82
Highland Bayou Tributary near Texas City (e)	08077750	1.97	1966-73
Highland Bayou near Texas City (e)	08077780	20.8	1965-88
Flores Bayou near Danbury (e)	08078700	23.3	1967-72
Oyster Creek near Angleton (d)	08079000	171	1945-80
North Fork Double Mountain Fork Brazos River at Lubbock (d)	08079500	5,300	1940-49,
North Fork Double Mountain Fork Brazos River above Buffalo Springs nr Lubbock (e)	08079530	29.3	1952-54, 1957, 1962, 1967-76
Buffalo Springs Lake near Lubbock (e)	08079550	236	1967-77
Barnum Springs Draw near Post (e)	08079570	4.99	1965-73
North Fork Double Mountain Fork Brazos River near Post (d)	08079575	438	1984-93
Rattlesnake Creek near Post (e)	08079580	2.75	1966-74
Double Mountain Fork Brazos River near Rotan (d)	08080000	8,536	1950-51
Guest-Flowers Draw near Aspermont (e)	08080510	3.02	1965-74
McDonald Creek near Post (d)	08080540	103	1966-78
Running Water Draw at Plainview (d)	08080700	1,291	1939-53, 1957-78
Callahan Draw near Lockney (e)	08080750	37.5	1966-77
White River near Crosbytown (e)	08080800	529	1951-64
White River below falls near Crosbytown (e)	08080900	529	1951-64
Salt Fork Brazos River at Farm Road 1081 near Clairemont (e)	08080916	1,135	1968-77
Red Mud Creek near Spur (e)	08080918	65.1	1967-74
Salt Fork Brazos River at State Highway 208 near Clairemont (e)	08080940	1,357	1968-77
Duck Creek near Girard (d)	08080950	431	1965-89
Salt Fork Brazos River at U.S. Highway 380 near Jayton (e)	08080959	1,797	1968-77
Salt Fork Brazos River near Peacock (d)	08081000	4,619	1950-51, 1965-86
Short Croton Creek at mouth near Jayton (e)	08081050	18.1	1959-82
Croton Creek below Short Croton Creek near Jayton (e)	08081100	250	1959-82
Croton Creek near Jayton (d)	08081200	290	1959-86
Salt Croton Creek at Weir D near Aspermont (e)	08081400	55.5	1957-76
Haystack Creek at Weir E near Aspermont (e)	08081450	15.1	1957-77
Salt Croton Creek near Aspermont (d)	08081500	64.30	1957-77
Stinking Creek near Aspermont (d)	08082100	88.80	1966-83
North Croton Creek near Knox City (d)	08082180	251	1965-86
Millers Creek Reservoir near Bomartin (d)	08082800	240	1975-94
North Elm Creek near Throckmorton (e)	08082900	3.58	1965-77
Elm Creek near Profitt (e)	08082950	275	1969-85
Brazos River near Graham (d)	08083000	16,830	1916-20

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Clear Fork Brazos River at Hawley (d)	08083240	1,416	1968-89
Mulberry Creek near Hawley (d)	08083245	205	1968-89
Elm Creek near Abilene (d)	08083300	133	1964-79
Little Elm Creek near Abilene (d)	08083400	39.10	1964-79
Cat Claw Creek at Abilene (d)	08083420*	13	1971-79
Elm Creek at Abilene (d)	08083430	422	1980-83
Cedar Creek at Abilene (d)	08083470	119	1971-84
Paint Creek near Haskell (d)	08085000	914	1950-51
Humphries Draw near Haskell (e)	08085300	3.51	1965-77
Clear Fork Brazos River at Crystall Falls (d)	08086000	4,323	1922-29
Hubbard Creek near Sedwick (d)	08086015	128	1964-66
Hubbard Creek at Highway 380 near Moran (e)	08086020	152	1963-76
Deep Creek near Putnam (e)	08086030	33.8	1963-66
Brushy Creek near Putnam (e)	08086040	27.6	1963-66
Mexia Creek near Putnam (e)	08086045	67.0	1963-66
Deep Creek at Moran (d)	08086050	228	1963-75
Hubbard Creek near Albany (d)	08086100	454	1962-75
Salt Prong Hubbard Creek below Lake McCarty near Albany (e)	08086110	45.5	1963-66
Salt Prong Hubbard Creek at U.S. 380 near Albany (d)	08086120	61	1964-68
Cook Creek near Albany (e)	08086130	11.3	1963-76
North Fork Hubbard Creek near Albany (d)	08086150	39.3	1963-90
Salt Prong Hubbard Creek near Albany (d)	08086200	115	1962-63
Snailum Creek near Albany (d)	08086210	22.90	1964-66
Big Sandy Creek near Eolian (e)	08086220	91.4	1963-76
Battle Creek near Putnam (e)	08086230	32.0	1963-66
Battle Creek near Moran (d)	08086235	108	1967-68
Battle Creek near Eolian (e)	08086240	137	1963-66
Pecan Creek at FM 1853 near Eolian (e)	08086250	6.95	1963-66
Pecan Creek near Eolian (d)	08086260	26.40	1967-75
Big Sandy Creek near Breckenridge (e)	08086300	288	1962-75
Hubbard Creek near Breckenridge (d)	08086500	1,089	1955-86
Clear Fork Brazos River near Crystal Falls (e)	08087000	5,658	1916-20, 1928-51
Clear Fork Brazos River near Eliasville (d)	08087300	5,697	1916-20, 1924-25, 1928-51, 1962-82
Salt Creek at Olney (d)	08088100	11.80	1958-77
Salt Creek near Newcastle (d)	08088200	120	1958-60
Briar Creek near Graham (d)	08088300	24.20	1958-89
Brazos River at Farm Road 1287 near Graham (e)	08088420	13,432	1970-77
Big Cedar Creek near Ivan (d)	08088450	97	1965-89
Brazos River at Morris Sheppard Dam near Graford (d)	08088600	14,030	1990-94
Elm Creek Tributary near Graford (e)	08089100	1.10	1965-74
Lake Palo Pinto near Santo (e)	08090300	461	1964-82
Palo Pinto Creek near Santo (d)	08090500	573	1925, 1951-76
Cidwell Branch near Granbury (e)	08090850	3.37	1966-73
Morris Branch near Bluff Dale (e)	08091200	0.06	1965-73
Panther Branch near Tolar (e)	08091700	7.82	1966-74
Lake Pat Cleburne near Cleburne (d)	08091900	100	1965-85
Nolan River at Blum (d)	08092000*	282.0	1924-87
Brazos River near Whitney (d)	08093000	17,648	1939-74
Bond Branch near Hillsboro (e)	08093200	0.36	1965-74
Hackberry Creek at Hillsboro (d)	08093250	57.9	1980-92
Hackberry Creek below Hillsboro (e)	08093260	86.8	1980-92
Aquilla Creek above Aquilla (d)	08093360*	255.0	1980-92
Cobb Creek near Abbott (d)	08093400	12.40	1967-79
Aquilla Creek at RR bridge near Aquilla (e)	08093530	345	1976-85
Aquilla Creek at Farm Road 2114 near Aquilla (e)	08093540	351	1976-85
Aquilla Creek at Farm Road and 1858 near Ross (e)	08093560	392	1976-85

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Aquilla Creek at Farm Road 933 near Ross (e)	08093580	397	1976-85
North Bosque River at Stephenville (d)	08093700	95.90	1958-79
Green Creek SWS #1 near Dublin (d)	08094000	4.19	1955-77
Green Creek near Alexander (d)	08094500	45.40	1958-73
South Bosque River near McGregor (e)	08095220	15.9	1967-73
Willow Branch at McGregor (e)	08095250	2.52	1966-73
Middle Bosque River near McGregor (d)	08095300*	182.0	1959-86
Hog Creek near Crawford (d)	08095400*	78.0	1959-86
South Bosque River near Speegleville (d)	08095500	386	1924-30
Bosque River near Waco (d)	08095600	1,656	1960-82
Box Branch at Robinson (e)	08096550	0.34	1965-73
Cow Bayou SWS No. 4 (inflow) near Bruceville (e)	08096800	5.04	1958-75
Cow Bayou at Mooreville (d)	08097000	83.50	1958-75
Brazos River near Marlin (d)	08097500	30,211	1939-51
Deer Creek at Chilton (d)	08098000	84.50	1934-36
Little Pond Creek at Burlington (d)	08098300	23	1963-82
Leon River near De Leon (d)	08099100*	479.0	1960-87
Sabana River near De Leon (d)	08099300*	264.0	1960-87
Sabana River Tributary near De Leon (e)	08099350	0.48	1966-74
Leon River near Hasse (d)	08099500	1,261	1939-91
Eidson Creek near Hamilton (e)	08100100	2.91	1965-73
Bermuda Branch near Gatesville (e)	08100400	0.50	1966-73
Hoffman Branch near Hamilton (e)	08100800	5.56	1966-74
Cowhouse Creek near Killeen (d)	08101500	667	1925, 1939-42
Nolan Creek at Belton (d)	08102600	112	1974-82
School Branch near Lampasas (e)	08102900	0.90	1966-73
Fleece Branch near Lampasas (e)	08103450	1.08	1965-74
Lampasas River at Youngsport (d)	08104000	1,240	1924-80
Lampasas River near Belton (d)	08104100*	1,321	1963-89
Salado Creek above Salado (e)	08104290*	134	1985-88
Salado Creek below Salado Springs (d)	08104310*	136	1985-87
N. Fork San Gabriel River upstream from State Highway 418 at Georgetown (e)	08104795*	271	1985-88
North Fork San Gabriel River at Georgetown (d)	08104800	268	1964-68
South Fork San Gabriel River near Bertram (e)	08104850	8.9	1967-74
San Gabriel River at Georgetown (d)	08105000*	405	1924-25, 1934-73, 1984-87
Berry Creek at State Hwy. 971 near Georgetown (d)	08105200*	117	1985-87
San Gabriel River near Weir (d)	08105300*	563	1977-90
San Gabriel River near Circleville (d)	08105400	599	1924-34, 1967-77
Avery Branch near Taylor (e)	08105900	3.52	1966-73
Brushy Creek at Coupland (d)	08106000	205.0	1924-26
Brushy Creek near Rockdale (d)	08106300	505	1967-80
San Gabriel River near Rockdale (d)	08106310	1,359	1975-92
Big Elm Creek near Temple (d)	08107000	74.70	1934-36
Big Elm Creek near Buckholts (d)	08107500	171	1934-36
North Elm Creek near Ben Arnold (d)	08108000	32.20	1935-36
North Elm Creek near Cameron (d)	08108200	44.80	1963-73
Little Branch near Bryan (e)	08108800	0.14	1966-73
Brazos River near Bryan (d)	08109000	39,515	1899-1903, 1918-92
Brazos River near College Station (d)	08109500	30,033	1899-1902, 1918-25
Yegua Creek near Somerville (d)	08110000	1,009	1924-92
Brazos River at Washington (e)	08110200	41,192	1966-95
Plummers Creek at Mexia (e)	08110350	4.42	1965-73
Navasota River near Groesbeck (d)	08110400	311	1965-79
Navasota River near Bryan (d)	08111000	1,454	1951-94, 1994-97
Navasota River near College Station (d)	08111010	1,809	1977-85

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Burton Creek at Villa Maria Road, Bryan (d)	08111025	1.33	1968-70
Hudson Creek near Bryan (d)	08111050	1.94	1968-70
Winkleman Creek near Brenham (e)	08111100	0.75	1965-73
Piney Creek near Bellville (e)	08111600	30.7	1948, 1955, 1958, 1964-89
West Fork Mill Creek near Industry (e)	08111650	15.3	1964-89
Mill Creek near Bellville (d)	08111700	376	1963-93
Brazos River near San Felipe (d)	08112000	35,100	1939-57
Brazos River near Wallis (e)	08112200	44,700	1974-75
Brazos River Authority Canal A near Fulshear (d)	08112500	N/A	1932-54, 1958-73
Richmond Irrigation Co. Canal near Richmond (d)	08113500	N/A	1932-54, 1956-78
Brazos River near Juliff (d)	08114500	45,084	1949-69
Seabourne Creek near Rosenberg (e)	08114900	5.78	1968-74
Fairchild Creek near Needville (d)	08115500	26.20	1947-55
Big Creek near Guy (d)	08116000	116	1947-50
Dry Creek near Rosenberg (d)	08116400	8.65	1959-79
Dry Creek near Richmond (d)	08116500	12.20	1947-50, 1957-58
San Bernard River near West Columbia (e)	08117700	766	1949, 1971-77
Mound Creek Tributary at Guy (e)	08117800	1.48	1966-73
Big Boggy Creek near Wadsworth (d)	08117900	10.30	1970-77
Bull Creek near Ira (d)	08118500	26.30	1948-54, 1959-62
Colorado River below Bull Creek near Ira (e)	08118600	3,524	1975-78
Bluff Creek near Ira (d)	08119000	42.60	1948-65
Bluff Creek at mouth near Ira (e)	08119100	44.1	1975-78
Colorado River near Ira (d)	08119500	3,483	1948-52, 1959-89
Deep Creek near Dunn (d)	08120500	198	1953-86
Morgan Creek near Westbrook (d)	08121500	273	1954-63
Graze Creek near Westbrook (d)	08122000	21.70	1954-59
Morgan Creek near Colorado City (d)	08122500	313	1947-49
Champlin Creek near Colorado City (d)	08123500	198	1948-59
Sulphur Springs Draw near Wellman (e)	08123620	41.80	1966-74
Beals Creek above Big Spring (d)	08123650	9,319	1959-79
Beals Creek at Big Spring (d)	08123700	9,341	1957-59
Beals Creek near Coahoma (d)	08123720	9,383	1983-88
Coahoma Draw Tributary near Big Spring (e)	08123750	2.38	1966-74
Bull Creek Tributary near Forsan (e)	08123760	0.4	1966-74
Colorado River near Silver (d)	08123900	14,997	1957-70
Bitter Creek near Silver (e)	08123920	4.3	1967-74
Salt Creek Tributary near Hylton (e)	08125450	0.25	1966-74
Oak Creek Reservoir near Blackwell (e)	08125500	238	1953-83
Fish Creek Tributary near Hylton (e)	08126300	0.25	1966-71
Colorado River at Ballinger (d)	08126500	16,413	1907-79
Dry Creek near Christoval (e)	08127100	0.79	1965-73
South Concho Irrigation Co. Canal at Christoval (d)	08127500	N/A	1940-83
South Concho River at Christoval (d)	08128000*	412.6	1931-95
Middle Concho River above Tankersley (d)	08128400*	2,084	1962-95
Middle Concho River near Tankersley (d)	08128500	2,653	1930-61
Spring Creek above Tankersley (d)	08129300*	424.7	1961-95
Dove Creek Springs near Knickerbocker (d)	08129500*	N/A	1944-58
Dove Creek at Knickerbocker (d)	08130500*	226.43	1961-95
Spring Creek near Tankersley (d)	08131000	699	1930-60

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
South Concho River above Pecan Creek near San Angelo (e)	08131300	470	1963-84
Pecan Creek near San Angelo (d)	08131400	81.10	1961-86
Tom Green Co. WCID No. 1 Canal near San Angelo (d)	08131600	N/A	1963-81
South Concho River at San Angelo (d)	08132500	3,866	1932-53
Quarry Creek near Sterling City (e)	08133300	3.25	1965-73
North Concho River at Sterling City (d)	08133500*	588.0	1939-87
Broome Creek near Broome (e)	08133800	0.29	1965-73
Nolke Station Creek near San Angelo (e)	08134300	0.59	1965-73
Gravel Pit Creek near San Angelo (e)	08134400	0.19	1965-74
North Concho River at San Angelo (d)	08135000	1,525	1916-31, 1947-90
Puddle Creek near Veribest (e)	08136200	12.0	1966-73
Frog Pond Creek near Eden (e)	08136300	1.96	1967-73
Mukewater Creek SWS No. 10A near Trickham (e)	08136900	15.3	1965-72
Mukewater Creek SWS No. 9 near Trickham (e)	08137000	4.02	1961-72
Mukewater Creek at Trickham (d)	08137500	70	1951-73
Deep Creek SWS No. 3 near Placid (e)	08139000	3.42	1954-60
Deep Creek near Mercury (d)	08139500	43.90	1954-73
Deep Creek SWS No. 8 near Mercury (e)	08140000	5.14	1952-71
Dry Prong Deep Creek near Mercury (d)	08140500	8.31	1951-71
Lake Clyde near Clyde (e)	08140600	36.9	1970-85
Pecan Bayou near Cross Cut (d)	08140700	532	1968-79
Jim Ned Creek near Coleman (d)	08140800	333	1965-80
McCall Branch near Coleman (e)	08141100	2.17	1966-73
Hords Creek near Valera (d)	08141500	54.20	1947-91
Hords Creek at Coleman (d)	08142000	107	1941-70
Brown County WID No. 1 Canal near Brownwood (d)	08142500	N/A	1950-83
Pecan Bayou at Brownwood (d)	08143500	1,660	1917-18, 1924-83
Brown Creek Tributary near Goldthwaite (e)	08143700	2.48	1966-73
Noyes Canal at Menard (d)	08144000	N/A	1924-83
Brady Creek near Eden (d)	08144800	101	1962-85
Brady Creek at Brady (d)	08145000	588	1939-86
Brady Creek Tributary near Brady (e)	08145100	4.05	1967-73
Lake Buchanan near Burnet (e)	08148000	31,910	1937-90
North Llano River near Junction (d)	08148500	914	1915-77
Llano River Tributary near London (e)	08150200	0.58	1966-73
Stone Creek Tributary near Art (e)	08150900	0.40	1966-73
Llano River near Castell (d)	08151000	3,747	1924-39
Johnson Creek near Valley Spring (e)	08151300	5.66	1967-73
Sandy Creek near Kingsland (d)	08152000	327	1967-93
Little Flatrock Creek near Marble Falls (e)	08152700	3.20	1966-74
Spring Creek near Fredricksburg (e)	08152800	15.20	1967-73
Pedernales River at Stonewall (d)	08153000	647	1924-34
Cane Branch at Stonewall (e)	08153100	1.37	1965-71
Pedernales River near Spicewood (d)	08154000	1,294	1924-39
Lake Travis near Austin (d)	08154500	38,755	1940-90
Colorado River below Mansfield Dam, Austin (d)	08154510	38,755	1975-90
West Bull Creek at Loop 360 near Austin (e)	08154750	6.77	1976-82
Bull Creek at FM 2222, Austin (e)	08154760	30.4	1975-78
Bee Creek at West Lake Drive near Austin (e)	08154950	3.28	1980-82
Barton Creek near Camp Craft Road near Austin (d)	08155260	109	1982-89
Skunk Hollow Creek below Pond 1 at Austin (e)	08155400	0.12	1982-84
West Bouldin Creek at Riverside Drive, Austin (e)	08155550	3.12	1976-82
Shoal Creek at Steck Avenue, Austin (e)	08156650	2.79	1975-82
Shoal Creek at Northwest Park at Austin (d)	08156700	6.52	1975-84
Shoal Creek at White Rick Drive, Austin (e)	08156750	12.30	1975-82
Waller Creek at 38th Street, Austin (d)	08157000	2.31	1955-80
Waller Creek at 23rd Street, Austin (d)	08157500	4.13	1955-80
Walnut Creek at Farm-Market 1325 near Austin (e)	08158100	12.60	1975-88
Walnut Creek at Dessau Road, Austin (e)	08158200	26.20	1975-88

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Ferguson Branch at Springdale Road, Austin (e)	08158300	1.63	1978-82
Little Walnut Creek at Georgian Drive, Austin (e)	08158380	5.22	1975-88
Little Walnut Creek at IH 35, Austin (e)	08158400	5.57	1975-82
Little Walnut Creek at Manor Road, Austin (e)	08158500	12.1	1975-82
Walnut Creek at Southern Pacific Railroad bridge, Austin (e)	08158640	53.5	1975-86
Onion Creek at Buda (e)	08158800	166	1961-78,
" " " (d)			1979-83,
			1992-95
Bear Creek at Farm-Market Road 1626 near Manchaca (e)	08158820	24.0	1979-83
Little Bear Creek at Farm-Market Road 1626 near Manchaca (d)	08158825	21.0	1979
Slaughter Creek at FM 2304 near Austin (e)	08158860	23.1	1978-83
Boggy Creek (South) at Circle S Road, Austin (e)	08158880	3.58	1976-88
Fox Branch near Oak Hill (e)	08158900	0.12	1965-73
Williamson Creek at Oak Hill (d)	08158920	6.30	1978-93
Williamson Creek at Jimmy Clay Road, Austin (d)	08158970	27.60	1975-85
Onion Creek below Del Valle (e)	08159100	339	1962-75
Wilbarger Creek near Pflugerville (d)	08159150	4.6	1963-80
Big Sandy Creek near McDade (d)	08159165	38.70	1979-85
Big Sandy Creek near Elgin (d)	08159170	63.80	1979-85
Dogwood Creek near McDade (e)	08159180	0.53	1980-85
Dogwood Creek at Highway 95 near McDade (e)	08159185	5.03	1980-85
Reeds Creek near Bastrop (e)	08159450	5.22	1967-73
Dry Creek at Buescher Lake near Smithville (d)	08160000	1.48	1940-66
Colorado River at La Grange (d)	08160500	40,430	1939-55
Colorado River above Columbus (d)	08160700	41,403	1983-85
Dry Branch Tributary near Altair (e)	08161580	0.68	1966-73
Little Robin Slough near Matagorda (e)	08162530	3.4	1969
Cashs Creek near Blessing (e)	08162650	14.8	1969-77
East Carancahua Creek near Blessing (e)	08162700	81.2	1968,
			1970-83
West Carancahua Creek near Laward (e)	08162800	57.1	1970-76
Navidad River near Ganado (d)	08164500	826	1939-80
Guadalupe River above Kerrville (e)	08166150	488	1976-79
Turtle Creek Tributary near Kerrville (e)	08166300	0.46	1966-74
Guadalupe River near Comfort (d)	08166500	762	1918-32
Rebecca Creek near Spring Branch (d)	08167600	10.90	1960-79
Blieders Creek at New Braunfels (e)	08168600	16.0	1962-89
Panther Canyon at New Braunfels (e)	08168700	0.73	1962-89
Trough Creek near New Braunfels (e)	08168720	0.48	1966-74
W.P. Dry Comal Creek Tributary near New Braunfels (e)	08168750	0.32	1966-74
Dry Comal Creek at New Braunfels (e)	08168800	N/A	1962-74
Guadalupe River at New Braunfels (d)	08169500*	1,652	1915-27
Walnut Branch near Seguin (e)	08169750	5.46	1967-74
East Pecan Branch near Gonzales (e)	08169850	0.24	1965-74
San Marcos River at San Marcos (d)	08169950	83.7	1915-21
West Elm Creek near Niederwald (e)	08172100	0.44	1965-74
Plum Creek near Lockhart (d)	08172500	184	1925-30
Plum Creek near Luling (d)	08173000	309	1930-93
San Marcos River at Ottine (d)	08173500	1,249	1915-43
Peach Creek below Dilworth (d)	08174600	460	1959-79
Guadalupe River below Cuero (d)	08176000	4,923	1903-07,
			1916-19,
			1921-36
Irish Creek near Cuero (e)	08176200	15.5	1967-74
Three Mile Creek near Cuero (e)	08176600	0.48	1966-74
Coleto Creek Reservoir inflow (Guadalupe diversion) near Schroeder (d)	08176990	357	1980-94
Coleto Creek near Schroeder (d)	08177000	369	1930-34,
			1953-79
Olmos Creek Tributary at FM 1535 at Savano Park (e)	08177600	0.33	1969-81
Olmos Creek at Dresden Drive, San Antonio (d)	08177700*	21.2	1968-81

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Olmos Reservoir at San Antonio (e)	08177800	32.4	1968-71, 1976-89. 1992-95
San Antonio River at Woodlawn Avenue, San Antonio (e)	08177860	36.4	1989-95
San Antonio River at Dolorosa, San Antonio (d)	08177920	N/A	1980-86
San Antonio River at San Antonio (d)	08178000	41.8	1895-1906, 1915-29, 1939-97
Alazan Creek at St. Cloud Street, San Antonio (e)	08178300	3.26	1969-79
San Pedro Creek at Furnish St., San Antonio (d)	08178500*	2.60	1916-29
Harlandale Creek at W. Harding Street, San Antonio (e)	08178555	2.43	1977-81
Panther Springs Creek at FM 2696 near San Antonio (e)	08178600	9.54	1969-77
Lorence Creek at Thousand Oaks Blvd., San Antonio (e)	08178620	4.05	1980-84
West Elm Creek at San Antonio (e)	08178640	2.45	1976-88
East Elm Creek at San Antonio (e)	08178645	2.33	1976-81
Salado Creek Tributary at Bitters Road, San Antonio (e)	08178690	0.26	1969-81
Salado Creek at Rittman Road, San Antonio (e)	08178720	137.1	1968-81
Salado Creek Tributary at Bee Street, San Antonio (e)	08178736	0.45	1970-77
Salado Creek at E. Houston Street, San Antonio (e)	08178740	181	1968-81
Salado Creek at U.S. Highway 87, San Antonio (e)	08178760	186	1968-81
Salado Creek at Southcross Blvd., San Antonio (e)	08178780	188	1968-81
Bandera Creek Tributary near Bandera (e)	08178900	0.27	1966-74
Medina River near Pipe Creek (d)	08179000	474	1923-35, 1953-82
Red Bluff Creek near Pipe Creek (d)	08179100	56.30	1956-81
Medina River Tributary near Pipe Creek (e)	08179200	0.30	1966-74
Medina Lake near San Antonio (e)	08179500	634	1913-94
Medina Canal near Riomedina (e)	08180000	N/A	1922-34, 1957-93
Medina River near Riomedina (d)	08180500	650	1922-34, 1953-73
Medio Creek at Pearsall Road, San Antonio (e)	08180750	47.9	1987-95
Leon Creek Tributary at FM 1604, San Antonio (e)	08181000	5.57	1968-80
French Creek Tributary near Helotes (e)	08181200	1.08	1966-74
Ranch Creek near Helotes (d)	08181410		1978
Leon Creek Tributary at Kelly Air Force Base (d)	08181450	1.19	1969-79
Calaveras Creek SWS No. 6 (inflow) near Elmendorf (e)	08182400	7.01	1957-77
Calaveras Creek near Elmendorf (d)	08182500	77.20	1954-71
San Antonio River at Calaveras (d)	08183000	1,786	1918-25
Cibolo Creek near Boerne (d)	08183900	68.4	1963-95
Cibolo Creek near Bulverde (d)	08184000	198	1946-66
Cibolo Creek above Bracken (d)	08184500	250	1946-51
Cibolo Creek at Sutherland Springs (d)	08185500	665	1924-29
Ecleto Creek near Runge (d)	08186500	239	1962-89
Escondido Creek SWS No. 1 (inflow) near Kenedy (e)	08187000	3.29	1955-73
Escondido Creek at Kenedy (d)	08187500	72.40	1954-73
Escondido Creek SWS No. 11 (inflow) near Kenedy (e)	08187900	8.45	1959-77
Dry Escondido Creek near Kenedy (d)	08188000	9.43	1954-59
Baugh Creek at Goliad (e)	08188400	3.02	1966-74
Guadalupe-Blanco River Authority Calhoun Canal-Flume No. 2 near Long Mott (d)	08188750	N/A	1972-86
Guadalupe River at State Highway 35 near Tivoli (e)	08188810	10,280	1975-82
Medio Creek near Beeville (d)	08189300	204	1962-77
Olmos Creek Tributary near Skidmore (e)	08189600	0.58	1966-73
Chiltipin Creek at Sinton (d)	08189800	128	1970-91
Nueces River near Uvalde (d)	08191500	1,930	1928-39
Nueces River near Cinonia (d)	08192500	2,150	1915-25
Plant Creek near Tilden (e)	08194550	0.36	1965-74
Nueces River at Simmons (d)	08194600	8,561	1965-77
Frio River at Knippa (d)	08195700	N/A	1953

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Dry Frio River at Knippa (d)	08196500	179	1953
East Elm Creek near Sabinal (e)	08198900	10.6	1967-74
Frio River near Frio Town (d)	08199700	1,460	1924-27
Hondo Creek near Hondo (d)	08200500	132	1953-64
Bone Creek near Hondo (e)	08200900	0.19	1965-74
Seco Creek near Utopia (d)	08202000	53.20	1952-61
Seco Creek Reservoir inflow near Utopia (d)	08202450	59.5	1991-98
Seco Creek near D'Hanis (d)	08202500	87.40	1952-64
Parkers Creek Reservoir (d)	08202800	10.0	1991-99
Leona River Tributary near Uvalde (e)	08203500	1.21	1966-74
Leona River Spring Flow near Uvalde (d)	08204000*	1.21	1939-77
Leona River near Divot (d)	08204500	565	1924-29
Frio River at Calliham (d)	08207000	5,491	1925-26, 1932-81
Rutledge Hollow Creek near Poteet (e)	08207200	9.33	1966-74
Atascosa River near McCoy (d)	08207500	530	1951-57
Lucas Creek near Pleasanton (e)	08207700	32.80	1966-73
Ramirena Creek near George West (d)	08210300	84.40	1968-72
Lagarto Creek near George West (d)	08210400	155	1972-89
Nueces River below Mathis (d)	08211100	16,726	1966-67
Pintas Creek Tributary near Banquete (e)	08211550	3.28	1966-74
Hamon Creek near Freer (e)	08211600	0.73	1965-73
San Diego Creek at Alice (d)	08211800	319	1964-89
Lake Alice at Alice (e)	08211850	150	1965-86
San Fernando Creek near Alice (d)	08212000	518	1962-63
North Las Animas Creek Tributary near Freer (e)	08212320	0.07	1969-74
Rio Grande at Vinton Bridge near Anthony (d)	08363840	28,680	1969-74
Northgate Reservoir at El Paso (e)	08365540	6.89	1973-75
Range Reservoir at El Paso (e)	08365545	11.89	1973-75
Franklin Canal at El Paso (d)	08365550	N/A	1969-72
McKelligon Canyon at El Paso (d)	08365600	2.30	1958-77
Government Ditch at El Paso (d)	08365800	6.40	1958-77
Rio Grande at Jaurez, MX (d)	08366000	29,350	1938-56
Riverside Canal near Socorro (d)	08366400	37,830	1969-72
Rio Grande at Island Station near El Paso (d)	08366500	29,743	1938-60
Rio Grande at Tornillo Branch near Fabens (d)	08367000	N/A	1924-38
Tornillo Drain at mouth near Tornillo (d)	08368000	N/A	1969-72
Tornillo Canal near Tornillo (d)	08368300	N/A	1969-72
Hudspeth Feeder Canal near Tornillo (d)	08368900	N/A	1969-72
Rio Grande at County Line Station near El Paso (d)	08369500	30,610	1938-60
Camo Rice Arroyo Tributary near Fort Hancock (e)	08370200	2.35	1966-74
Wild Horse Creek Tributary near Van Horn (e)	08370800	0.74	1966-73
Cibolo Creek near Presidio (d)	08373200	276	1971-77
Rio Grande above Presidio (lower Station) (d)	08373500	N/A	1901-13, 1924-54
Sanderson Canyon at Sanderson (d)	08376300	195	1968-80
Rio Grande at Langtry (d)	08377500	84,795	1900-14, 1920, 1924-60
Rio Grande Tributary near Langtry (e)	08377600	0.32	1966-74
Delaware River Tributary near Orla (e)	08407800	1.6	1966-74
Pecos River near Angeles (d)	08409500	20,540	1914-37
Salt Screwbean Draw near Orla (d)	08411500	464	1939-41, 1944-57
Pecos River near Mentone (d)	08414000	21,650	1922-26, 1969-73
Reeves County WID No. 2 Canal near Mentone (d)	08414500	N/A	1922-25, 1939-57, 1964-90
Ward County WID No. 3 Canal near Barstow (d)	08415000	N/A	1939-57, 1964-90
Pecos River above Barstow (d)	08416500	21,800	1916-21

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Ward County Irrigation District No. 1 Canal near Barstow (d)	08418000	N/A	1922-25, 1939-57, 1964-90
Pecos River at Pecos (d)	08420500	22,100	1898-1907, 1914-15, 1922-26, 1939-55
Madera Canyon near Toyahvale (d)	08424500	53.80	1932-49
Phantom Lake Spring near Toyahvale (d)	08425500*	N/A	1932-34, 1942-66
Giffin Springs at Toyahvale (d)	08427000*	N/A	1932-33
San Solomon Springs at Toyahvale (d)	08427500	N/A	1932-34, 1941-65
West Sandia Spring at Balmorhea (d)	08429000	N/A	1932-33
East Sandia Spring at Balmorhea (d)	08430000	N/A	1932-33
Toyah Creek near Pecos (d)	08431000	1,024	1940-41, 1944-45
Salt Draw near Pecos (d)	08431500	1,882	1939-41, 1944-45
Limpia Creek above Fort Davis (d)	08431700	52.40	1966-86
Limpia Creek below Fort Davis (d)	08431800	227	1962-77
Limpia Creek near Fort Davis (d)	08432000	303	1925-32
Barrilla Draw near Saragosa (d)	08433000	612	1925-26, 1932, 1976-83
Toyah Creek below Toyah Lake near Pecos (d)	08434000	3,709	1939-51
Grandfalls-Big Valley Canal near Barstow (d)	08435000	N/A	1922-26, 1939-57, 1964-76
Pecos River below Barstow (d)	08435500	25,980	1939-41
Toronto Creek near Alpine (d)	08435600	27.90	1971-76
Alpine Creek at Alpine (d)	08435620	18.10	1971-76
Moss Creek near Alpine (d)	08435660	11.30	1971-76
Sunny Glen Canyon near Alpine (d)	08435700	29.70	1968-77
Coyanosa Draw near Fort Stockton (d)	08435800	1,182	1964-77
Pecos County WID No. 2 (Upper Div.) Canal near Grandfalls (d)	08436500	N/A	1922-25, 1939-57, 1964-90
Courtney Creek Tributary near Fort Stockton (e)	08436800	0.44	1966-74
Pecos County WID No. 2 Canal near Imperial (d)	08437500	N/A	1940-57, 1964-90
Lake Leon Tributary near Fort Stockton (e)	08437550	1.59	1966-74
Pecos County WID No. 3 Canal near Imperial (d)	08437600	N/A	1940-57, 1964-90
Monument Draw Tributary at Pyote (e)	08437650	178	1966-74
Ward County WID No. 2 Canal near Grand Falls (d)	08437700	N/A	1939-57, 1964-90
Pecos River near Grand Falls (d)	08438100	27,810	1916-26
Pecos River below Grand Falls (d)	08441500	27,820	1921-26, 1939-56
Three Mile Mesa Creek near Fort Stockton (e)	08444400	1.04	1966-74
Comanche Springs at Fort Stockton (d)	08444500	N/A	1936-64
Pecos River near Sheffield (d)	08447000	31,600	1922-25, 1940-49
Independence Creek near Sheffield (d)	08447020	763	1974-85
Howards Creek Tributary near Ozona (e)	08447200	7.53	1967-73
Pecos River near Shumla (d)	08447400	35,162	1955-60
Pecos River near Comstock (d)	08447500	35,298	1900-54
Goodenough Springs near Comstock (e)	08448500	N/A	1929-60
Sonora Field Creek at Sonora (e)	08448800	2.60	1965-71
Devils River near Juno (d)	08449000	2,730	1925-49, 1964-73

Station name	Station number	Drainage area (mi^2)	Period of record (water years)
Devils River near Comstock (d)	08449300	3,903	1955-58
Rough Canyon Tributary near Del Rio (e)	08449470	7.90	1967-73
Devils River near Del Rio (d)	08449500	4,185	1900-14, 1924-57
Evans Creek Tributary near Del Rio (e)	08449600	0.39	1966-73
Devils River near mouth, Del Rio (d)	08450500	4,305	1954-60
Rio Grande near Del Rio (d)	08452500	123,303	1900-15, 1920, 1924-54
San Felipe Creek near Del Rio (e)	08453000	46.0	1931-60
Zorro Creek near Del Rio (e)	08453100	10.0	1966-74
East Perdido Creek near Brackettville (e)	08454900	3.39	1965-74
Pinto Creek near Del Rio (d)	08455000	249	1929-69, 1971-72
Rio Grande at San Antonio Crossing (d)	08458700	129,226	1952-60
Arroyo San Bartolo at Zapata (e)	08459600	0.61	1966-74
Rio Grande near Zapata (d)	08460500	163,344	1932-53
International Falcon Reservoir near Falcon Heights (d)	08461200	N/A	1953-60
Rio Grande at Roma (d)	08462500	166,464	1900-13, 1923-54
Rio Grande near Rio Grande City (d)	08465500	180,941	1932-54
Rio Grande Tributary near Rio Grande City (e)	08466100	1.20	1966-74
Rio Grande Tributary near Sullivan City (e)	08466200	0.40	1966-74
North Floodway South of McAllen (d)	08468000	N/A	1928-60
South Floodway South of McAllen (d)	08470000	N/A	1929-60
Rio Grande at Hildalgo (d)	08471500	176,100	1928-32, 1935, 1939, 1941-51
Rio Grande near Progreso Bridge (d)	08473300	176,228	1953-60
Rio Grande near San Beniot (d)	08473700	176,304	1953-60
Rio Grande at Matamoros, MX (d)	08474500	182,211	1900-13, 1923-54
Rio Grande near Brownsville (d)	08475000	176,333	1935-50

The following stations were discontinued as continuous-record surface-water-quality stations prior to the 2000 water year. Daily records of specific conductance, temperature, sediment, color, pH, dissolved oxygen, or chloride were collected and published for the record shown for each station.

[SC, specific conductance; T, temperature; S, sediment; C, color; pH, pH; DO, dissolved oxygen; Cl, chloride.]

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Canadian River at Tascosa	07227470	19,200	SC, T, Cl	1948-53,
		18,536	SC, T, pH, Cl	1969-77
Canadian River near Canadian	07228000	22,866	SC, T	1974-81
Prairie Dog Town Fork Red River near Wayside	07297910	4,221	SC, T	1969-81
Tule Creek near Silverton	07298200	1,150	SC, T, pH, Cl	1968-69
Prairie Dog Town Fork Red River near Brice	07298500	6,082	SC, pH, Cl, S	1949-51,
			T	1950-51
Mulberry Creek near Brice	07299000	534	SC, pH, Cl, S	1949-51
Prairie Dog Town Fork Red River near Lakeview	07299200	6,792	SC, T	1968-80,
			S	1979-80
Little Red River near Turkey	07299300	139	SC, T	1968-81,
			S	1979-81
Jonah Creek at Weir near Estelline	07299512	65.50	SC	1974-82
Jonah Creek below Weir near Estelline	07299514	66.60	SC	1974-76
Salt Creek near Estelline	07299530	142	SC	1974-79
Prairie Dog Town Fork Red River near Childress	07299540	7,725	SC, T	1968-82,
				1994-97
Salt Fork Red River near Hedley	07299930	868	SC, T, pH, Cl	1956-61
Salt Fork Red River near Wellington	07300000	1,222	SC, T, pH, Cl	1952-54,
			SC, T	1968-91
North Pease River near Childress	07307600	1,434	SC, T	1973-79
Middle Pease River near Paducah	07307750	1,086	SC	1973-79,
			T	1973-79,
			S	1994-97
Middle Pease River near Paducah	07307760	1,128	SC	1980-82,
			T	1980
Pease River near Childress	07307800	2,754	SC, T	1968-82,
				1994-97
Pease River near Crowell	07308000	3,037	SC	1942-43
Pease River near Vernon	07308200	3,488	SC,T	1999
Red River near Burkburnett	07308500	20,570	SC, T	1968-81
North Fork Wichita River near Paducah	07311600	540	SC, T	1968-76
North Fork Wichita River near Crowell	07311622	591	SC	1971-76
Middle Fork Wichita River near Truscott	07311648	161	SC	1970-76
Truscott Brine Lake near Truscott	07311669	26.2	SC, T	1985-90
North Fork Wichita River near Truscott	07311700	937	SC, T	1969-92
South Fork Wichita River near Guthrie	07311780	239	SC	1970-76
South Wichita River below Low-Flow Dam near Guthrie	07311783	223	SC, T	1987-89
South Fork Wichita River at Ross Ranch near Guthrie	07311790	499	SC	1971-79,
			Cl	1988-97,
			S	1978-79
Wichita River near Seymour	07311900	1,874	SC, T	1968-79
Beaver Creek near Electra	07312200	652	SC,T	1969-70
				1996-99
Little Wichita River near Archer City	07314500	481	SC	1953-55,
			T	1953-54
Little Wichita River near Henrietta	07314900	1,037	SC, DO	1999
Little Wichita River near Henrietta	07315000	1,037	SC, T, pH, Cl	1953-56,
			S, T	1959-66,
East Fork Little Wichita River near Henrietta	07315200	178	T	1954
Little Wichita River near Ringgold	07315400	1,350	SC, pH, Cl	1959-62

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Red River near Gainesville	07316000	30,872	SC, Cl	1944-46,
			SC, T, pH, Cl	1953-63,
			SC, T	1967-89,
Red River at Denison Dam near Denison	07331600	39,720	SC	1944-89,
			T	1945-89
Little Pine Creek near Kanawha	07336750	75.40	T	1980
Red River near De Kalb	07336820	47,348	SC, T	1968-91
South Sulphur River near Cooper	07342500	527	SC, T, pH, Cl	1959-66,
				1968-72,
			SC, T	1973-89
Sulphur River near Talco	07343200	1,365	SC, T, pH, Cl	1966-72,
			SC, T	1973-91
White Oak Creek near Talco	07343500	494	SC, T, pH, Cl	1966-72,
			SC, T	1973-91
Sulphur River near Darden	07344000	2,774	SC, T, pH, Cl	1947-50
Big Cypress Creek near Pittsburg	07344500	366	SC, T, pH, Cl	1968-72,
			SC, T	1973-89
Little Cypress Creek near Jefferson	07346070	675	SC, T, pH, Cl	1968-72,
			SC, T	1973-91
Sabine River near Emory	08017500	888	SC, T, pH, Cl	1952-54
Grand Saline Creek near Grand Saline	08018200	91.40	SC, T, pH, Cl	1968-73
Sabine River near Mineola	08018500	1,357	SC, T, pH, Cl	1968-72,
			SC, T	1973-92
Lake Fork Creek near Quitman	08019000	585	SC, T, pH, Cl	1968-72,
			SC, T	1973-89
Big Sandy Creek near Big Sandy	08019500	231	SC, T, S	1985-86
Sabine River near Beckville	08022040	3,589	SC, T	1952-98
Sabine River below Toledo Bend near Burkeville	08026000	7,482	SC, T	1969-86,
			C	1969-75
Sabine River near Bon Wier	08028500	8,229	SC, T, C	1969-84
Sabine River near Ruliff	08030500	9,329	SC	1945,
				1947-98
			T	1947-98
			pH, DO	1968-75,
			C	1970-76,
			Cl	1968
Cow Bayou near Mauriceville	08031000	83.30	SC, T, pH, Cl	1952-54,
			SC, T	1954-56
Neches River near Neches	08032000	1,145	SC, T	1974-91
Neches River near Alto	08032500	1,945	SC, T	1950-69
Neches River near Diboll	08033000	2,724	SC, T	1970-81
Neches River near Rockland	08033500	3,636	SC	1941-42,
				1946-47
Angelina River near Lufkin	08037000	1,600	SC, T, pH, Cl	1955-78,
			SC, T	1955-
Attoyac Bayou near Chireno	08038000	503	SC, T	1984-99
Sam Rayburn Reservoir near Jasper	08039300	3,449	SC, T	1964-84,
				1993-99
Angelina River below Sam Rayburn Dam near Jasper	08039400	3,449	SC, T	1964-79
Angelina River at SH 63 near Ebenezer	08039500	3,435	SC, T	1994-99
Village Creek near Kountze	08041500	860	SC, T	1968-70
Pine Island Bayou near Sour Lake	08041700	336	SC, T, pH, Cl	1968-72,
			SC, T	1973-89
Big Sandy Creek near Bridgeport	08044000	333	SC, T, S	1968-77,
Lake Worth above Fort Worth	08045400	2,064	pH, Cl	
Clear Fork Trinity River at Fort Worth	08047500	518	SC, pH, Cl	1949-52,
			T	1948-62

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Village Creek at Everman	08048970	84.5	SC, pH, T, DO	1990
Elm Fork Trinity River SWS # 6-0 near Muenster	08050200	0.77	S	1957-66
Elm Fork Trinity River near Muenster	08050300	46	SC	1967-68,
			T	1957-58,
				1966-68,
			S	1957-68
Clear Creek near Sanger	08051500	295	SC, T, S	1968-77
Little Elm Creek near Celina	08052650	46.70	SC	1967-75,
			T, S	1966-75
Little Elm Creek near Aubrey	08052700	75.50	SC	1967-75,
			T, S	1966-75
Elm Fork Trinity River near Lewisville	08053000	1,673	SC	1982-86,
			T	1976-86
Lavon Lake near Lavon	08060500	770	SC,T,CL	1969-74,
				1975,82,
				1995-99
Duck Creek near Garland	08061700	31.6	SC, pH, T, DO	1988-89
East Fork Trinity River above Seagoville	08061970	1,183	SC, T, pH, DO	1987-93
East Fork Trinity River at Seagoville	08061980	1,224	SC, pH, T, DO	1987-96
Cedar Creek near Mabank	08063000	733	SC, T, pH, Cl	1956-57
Pin Oak Creek near Hubbard	08063200	17.60	SC	1967-72,
			T	1957-60,
				1965-72,
			S	1957-60,
				1962-72
Richland Creek near Richland	08063500	734	SC, T, pH, Cl	1968-69,
			SC, T	1983-89
Chambers Creek near Corsicana	08064500	963	SC, T, pH, Cl	1961-70
Richland Creek near Fairfield	08064600	1,957	SC, T, pH, Cl	1956-66,
				1972,
			SC, T	1973-83
Trinity River near Oakwood	08065000	12,833	SC, T, pH, Cl	1948-54,
			SC, T, S	1977-81
Bedias Creek near Madisonville	08065800	321	SC, T	1985-87,
			S	1986
Long King Creek at Livingston	08066200	141	SC, T, pH, Cl	1963-72
Trinity River near Goodrich	08066250	16,844	SC, T	1970-73
Trinity River near Moss Bluff	08067100	17,738	SC, pH, Cl	1950-65
Old River near Cove	08067200	19.0	SC, pH, Cl	1950-65,
			T	1965
Trinity River at Anahuac	08067300	17,912	SC, pH, Cl	1950-65
West Fork San Jacinto River near Conroe	08068000	828	SC, T	1962-90,
			DO	1979-81
Panther Branch near Spring	08068450	34.50	S	1975-76
West Fork San Jacinto River near Humble	08069500	1,741	SC, Cl	1945-46
East Fork San Jacinto River near New Caney	08070200	388	SC,T	1984-99
San Jacinto River near Huffman	08071500	2,800	SC	1945-54,
			T	1949-54
Buffalo Bayou at West Belt Drive at Houston	08073600	307	SC, T	1979-81
Whiteoak Bayou at Main Street, Houston	08074598	127	SC, T, DO	1992-97
Buffalo Bayou at Main Street, Houston	08074600	469	SC, T, DO	1986-92
Sims Bayou at Houston	08075500	63.0	SC, T, DO	1994-97
Chocolate Bayou near Alvin	08078000	87.70	SC, T	1978-81
North Fork Double Mountain Fork Brazos River near Post	08079575	438	SC, T	1984-93
Double Mountain Fork Brazos River near Rotan	08080000	8,536	SC, T	1950-51
Double Mountain Fork Brazos River near Aspermont	08080500	8,796	SC, T, S	1949-51
			SC, T	1957-95

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
McDonald Creek near Post	08080540	103	SC, T	1964-78
Salt Fork Brazos River near Peacock	08081000	4,619	SC, T	1950-51, 1965-86
Croton Creek near Jayton	08081200	290	SC, T	1961-80
Salt Croton Creek near Aspermont	08081500	64.30	SC T	1969-77, 1972-73
Salt Fork Brazos River near Aspermont	08082000	5,130	SC, T, pH, Cl SC, T	1949-51, 1957-82
Stinking Creek near Aspermont	08082100	88.80	T SC, T	1950, 1966-69
North Croton Creek near Knox City	08082180	251	SC, T	1966-86
Brazos River at Seymour	08082500	15,538	SC, T	1960-95
Clear Fork Brazos River at Hawley	08083240	1,416	SC, T	1968-79, 1982-84
Clear Fork Brazos River at Nugent	08084000	2,199	SC, T, pH, Cl	1948-53
California Creek near Stamford	08084800	478	SC, T	1963-79
Paint Creek near Haskell	08085000	914	SC, T	1950-5
Clear Fork Brazos River at Fort Griffin	08085500	3,988	SC, T, S SC, T	1950-51, 1968-79, 1982-84
Hubbard Creek near Sedwick	08086015	128	SC, T	1964-66
Deep Creek at Moran	08086050	228	SC, T	1963-75
Hubbard Creek near Albany	08086100	454	SC, T	1962-75
Salt Prong Hubbard Creek at U.S. Highway 380 near Albany	08086120	61	SC, T	1964-68
North Fork Hubbard Creek near Albany	08086150	39.30	SC, T	1964-90
Salt Prong Hubbard Creek near Albany	08086200	115	SC, T	1962-63
Snailum Creek near Albany	08086210	22.90	SC, T	1964-66
Battle Creek near Moran	08086235	108	SC, T	1967-68
Pecan Creek near Eolian	08086260	26.40	SC, T	1967-75
Big Sandy Creek near Breckenridge	08086300	288	SC, T	1962-77
Hubbard Creek near Breckenridge	08086500	1,089	SC, T	1955-75
Clear Fork Brazos River at Eliasville	08087300	5,697	SC, T	1962-82
Brazos River near South Bend	08088000	22,673	SC, Cl SC, T	1942-48, 1978-81
Salt Creek at Olney	08088100	11.80	SC, T	1958-60
Salt Creek near Newcastle	08088200	120	SC, T	1958-60
Brazos River at Morris Sheppard Dam near Graford	08088600	23,596	SC T	1942-91, 1950-55, 1966-91
Brazos River near Dennis	08090800	25,237	SC, T	1971-95
Brazos River at Whitney Dam near Whitney	08092600	27,189	SC, T	1947-97
Aquilla Creek above Aquilla	08093360	255	SC, T	1980-83
Aquilla Creek near Aquilla	08093500	308	SC, T	1966, 1968-82
Brazos River near Highbank	08098290	30,436	T	1968-84
Leon River near Eastland	08098500	235	SC, T	1950-53
Leon River near Hasse	08099500	1,261	SC, T	1980-82, 1990-97
Leon River near Belton	08102500	3,542	T	1957-72
South Fork Rocky Creek near Briggs	08103900	33.30	S	1963-65
Lampasas River at Youngsport	08104000	1,240	SC, T	1961-64
Little River near Little River	08104500	5,228	SC, T	1965-73, 1980-82
Little River near Cameron	08106500	7,065	SC, T	1959-97
San Gabriel River near Weir	08105300	563	T	1977-82
San Gabriel River at Laneport	08105700	738	T	1977-82
Brazos River at State Highway 21 near Bryan	08108700	39,049	SC, T	1961-65
Brazos River near Bryan	08109000	39,515	SC, T	1966

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Brazos River near College Station	08109500	39,599	SC, T	1961-84
Yegua Creek near Somerville	08110000	1,009	SC, T	1961-67
Navasota River above Groesbeck	08110325	239	SC, T	1968-89
Navasota River near Groesbeck	08110400	311	SC, T	1968-78
Navasota River near Easterly	08110500	968	SC	1942-43,
				1947
Navasota River near Bryan	08111000	1,454	SC, T	1959-81,
			S	1976-81
Brazos River near Richmond	08114000	45,007	S	1966-86,
			SC	1942-95,
			T	1951-95
Brazos River near Rosharon	08116650	45,399	SC, T	1969-80
Brazos River at Harris Reservoir near Angleton	08116700	44,000	SC	1962-77,
			T	1967-77
Brazos River at Brazoria Reservoir near Brazoria	08117200	44,000	SC	1962-77,
			T	1967-77
San Bernard River near Boling	08117500	727	SC, T	1978-81
Colorado River above Bull Creek near Knapp	08118200	N/A	SC, T, Cl	1950-52
Bull Creek near Ira	08118500	26.30	SC, T, pH, Cl	1950-51
Bluff Creek near Ira	08119000	42.60	SC, T, pH, Cl	1950
Colorado River near Ira	08119500	3,483	SC, T	1950-52,
				1959-70,
				1975-82,
			Cl	1951-52
Deep Creek near Dunn	08120500	198	SC, T	1953-54
Colorado River near Cuthbert	08120700	3,912	SC	1965-99
			T	1965-80,
				1983-99
Morgan Creek near Westbrook	08121500	273	T	1954-55
Graze Creek near Westbrook	08122000	21.70	T	1954-55
Morgan Creek near Colorado City	08122500	313	T	1947-49
Lake Colorado City near Colorado City	08123000	340	T	1954-55
Beals Creek above Big Spring	08123650	9,319	SC, T	1973-78
Beals Creek near Big Spring	08123700	9,341	SC, T	1956-57
Beals Creek near Coahoma	08123720	9,383	SC, T	1983-88
Colorado River near Silver	08123900	14,997	SC, T	1957-68
Colorado River at Robert Lee	08124000	15,307	SC, T, pH, Cl	1948-51,
			S	1949-51
Oak Creek near Blackwell	08126000	209	SC, T	1950
Colorado River at Ballinger	08126500	16,413	SC, T	1961-79,
			S	1978-79
Elm Creek at Ballinger	08127000	450	SC, T	1968-91
Concho River at Paint Rock	08136500	6,574	SC, T	1946-50,
				1967-90,
			S	1978-81
Pecan Bayou at Brownwood	08143500	1,660	SC, T	1948-49
Pecan Bayou near Mullin	08143600	2,073	SC, T	1968-91
San Saba River near San Saba	08145500	N/A	SC, T	1962-65
San Saba River at San Saba	08146000	3,046	SC	1962-69,
			T	1963-70
Colorado River near San Saba	08147000	37,217	SC, T	1947-92,
			S	1951-62
Llano River at Llano	08151500	4,197	SC, T	1979-81
Lake Austin at Austin	08154900	38,240	SC, T	1965-80
Barton Creek below Barton Springs at Austin	08155505	125	SC, T,	1965,
				1975-83,
				1989-91,
				1994-97

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Waller Creek at 23rd Street at Austin	08157500	4.13	T	1955-60
Colorado River at Austin	08158000	39,009	SC, T	1948-91
Colorado River above Columbus	08160700	41,403	SC, T	1983-86
Colorado River at Columbus	08161000	41,640	SC	1967-73,
			T	1957-59,
				1961-68
			S	1957-73
Colorado River at Wharton	08162000	42,003	SC	1945-92,
			T	1946-48,
Lavaca River near Edna	08164000	817	SC, T	1978-81
Navidad River near Ganado	08164500	826	SC, T	1960-80
Guadalupe River near Spring Branch	08167500	1,315	SC	1942-45
Guadalupe River at Sattler	08167800	1,436	T	1984-87
Blanco River at Wimberley	08171000	355	T	1977-78
Plum Creek near Luling	08173000	309	SC, T	1968-86
Guadalupe River at Victoria	08176500	5,198	SC	1946-81,
			T	1951-81
Coleto Creek Reservoir (Condenser No. 1) near Fannin	08177360	414	T	1980-94
Coleto Creek Reservoir (outflow) near Victoria	08177410	494	T	1980-94
San Antonio River at San Antonio	08178000	41.8	SC, T	1991-92,
				1996-97
Medina River at La Coste	08180640	805	SC, pH, T, DO	1987-95
Medio Creek at Pearsall Rd. at San Antonio	08180750	47.9	SC, pH, T, DO	1987-95
San Antonio River near Falls City	08183500	2,113	SC, pH, T, DO	1987-96
Cibolo Creek near Falls City	08186000	827	SC, T	1969-91
Escondido Creek SWS #1 near Kenedy	08187000	3.29	S	1955-65
Guadalupe River at Tivoli	08188800	10,128	SC, T	1966-82
Mission River at Refugio	08189500	690	SC, T	1961-81
Nueces River at Cotulla	08194000	5,171	SC	1942
Nueces River near Tilden	08194500	8,093	SC, T, S	1950
Frio River at Calliham	08207000	5,491	SC, T	1968-81
Nueces River near Three Rivers	08210000	15,427	SC	1945-47,
			SC, T, pH, Cl, S	1951-52,
			SC, T	1975-81
Nueces River at Bluntzer	08211000	16,772	SC, T	1948-91
Los Olmos Creek near Falfurrias	08212400	480	SC, T	1975-81
Rio Grande at Fort Quitman	08370500	31,944	SC, T	1975-78.
Rio Grande at Foster Ranch near Langtry	08377200	80,742	SC, T	1975-81
Pecos River below Red Bluff Dam near Orla	08410100	20,720	SC	1937-69,
			T	1953-69
Salt Draw near Orla	08411500	464	SC, T	1943-48
Pecos River near Mentone	08414000	21,650	SC	1939
Pecos River at Pecos	08420500	22,100	SC	1939-41
Toyah Creek near Pecos	08431000	1,024	SC	1940,
				1944
Salt Draw near Pecos	08431500	1,882	SC	1940,
				1944
Toyah Creek below Toyah Lake near Pecos	08434000	3,709	SC	1940-50,
			Cl	1940
Pecos River below Grand Falls	08441500	27,820	SC	1939-42,
				1947-56
Pecos River near Girvin	08446500	29,560	SC	1940-41,
				1947,
				1954-82
			T	1954-59,
				1964-82
Pecos River near Sheffield	08447000	31,600	SC	1940-41,
				1947

Station name	Station number	Drainage area (mi^2)	Type of record	Period of record (water years)
Pecos River near Langtry	08447410	35,179	SC, T	1971-76, 1981-85
Devils River at Pafford Crossing near Comstock	08449400	3,961	SC, T	1978-85
Rio Grande at Laredo	08459000	132,578	SC	1975-86,
			T	1974-76
Rio Grande at Roma	08462500	166,464	SC	1942-43
Rio Grande at Mission Pumping Plant	08468000	171,800	SC	1945-50
Rio Grande at Cameron Co. WID #2 near San Benito	08473800	N/A	SC	1942-43
Rio Grande at Los Fresnos Pumping Plant near Brownsville	08474130	N/A	SC	1945-46
Rio Grande near Brownsville	08475000	176,333	SC	1943-44,
			SC, T	1967-83
			S	1966-83

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WATER RESOURCES DATA—TEXAS, 2000

VOLUME 1

ARKANSAS RIVER BASIN, RED RIVER BASIN, SABINE RIVER BASIN, NECHES RIVER BASIN, AND INTERVENING COASTAL BASINS

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with Federal, State, and City agencies, obtains a large amount of data pertaining to the water resources of Texas each water year. Such 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 U.S. Geological Survey, the data are published annually in six volumes of this report series entitled "Water Resources Data - Texas."

This report series includes records of stage, discharge, and water quality of streams and canals; stage, contents, and water quality of lakes and reservoirs, and water levels and water quality of ground water wells. Volume 1 contains records for water discharge at 68 gaging stations; stage only at 3 gaging stations; stage and contents at 37 lakes and reservoirs; and water quality at 39 gaging stations. Also included are data for 9 partial-record stations comprised of 6 flood-hydrograph and 3 low-flow stations. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating Federal, State, and City agencies in Texas.

This series of annual reports for Texas 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 was changed to its present format, with data on quantities and quality of surface water contained in each of three volumes, and expanding to five volumes beginning with the 1999 water year. Ground-water levels and water quality have been published in a separate volume beginning with the 1991 water year.

Prior to introduction of this series and for several water years concurrent with it, water resources data for Texas 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 7 and 8." 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," and water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." 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 U.S. Geological Survey, Books and Open-File Reports, Federal Center, Bldg. 41, Box 25425 Denver, CO 80225.

Publications similar to this report are published annually by the U.S. Geological Survey for all States. These official U.S. Geological 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 TX-00-1." For archiving and general distribution, the reports for the 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or may be purchased on microfiche from the National Technical Information Service, U.S. Department of Commerce, Springfield, VA 22161, (703) 605-6000.

Additional information, including the current prices, for ordering specific reports may be obtained from the Texas District Chief at the address given on the back of the title page or by telephone (512) 927-3500.

COOPERATION

Federal agencies that assisted the U.S. Geological Survey in the collection of data in this report in the form of funds or services in water year 2000 are:

- Corps of Engineers, U.S. Army.
- International Boundary and Water Commission United States and Mexico, U.S. Section.
- National Park Service
- U.S. Bureau of Reclamation.

Organizations that assisted in the collection of data in this report through joint funding agreements through the Texas Water Development Board or through direct joint funding agreements with the U.S. Geological Survey are:

Texas Water Development Board, G.E. Kretzschmar, Executive Administrator; the cities of Abilene, Arlington, Austin, Corpus Christi, Fort Worth, Gainesville, Garland, Georgetown, Graham, Houston, Lubbock, Nacogdoches, San Angelo, and Wichita Falls; Bexar, Medina, and Atascosa Counties Water Improvement District No. 1; Barton Springs/Edwards Aquifer Conservation District; Brazos River Authority; Canadian Municipal Water Authority; Coastal Water Authority; Colorado River Municipal Water District; Dallas Public Works Department; Dallas Water Utilities; Edwards Underground Aquifer Authority; Fort Bend Subsidence District; Franklin County Water District; Galveston County; Greenbelt Municipal and Industrial Water Authority; Guadalupe-Blanco River Authority; Harris-Galveston Coastal Subsidence District; Harris County Office of Emergency Management; Harris County Flood Control District: Houston-Galveston Area Council; Lavaca-Navidad River Authority; Lower Colorado River Authority; Lower Neches Valley Authority; North Central Texas Municipal Water Authority; Northeast Texas Municipal Water District; North Texas Municipal Water District; Orange County; Pecos River Commission; Red Bluff Water Power Control District; Red River Authority of Texas; Sabine River Authority of Texas; Sabine River Compact Administration; San Antonio City Public Service Board; San Antonio River Authority; San Antonio Water System; San Jacinto River Authority; Somervell County Water District; Tarrant Regional Water District; Texas Soil & Water Conservation Board; Texas State Department of Highways & Public Transportations; Texas Natural Resources Conservation Commission; Titus County Fresh Water Supply District No. 1; Trinity River Authority; Upper Colorado River Authority; Upper Guadalupe River Authority; Upper Neches River Municipal Water Authority; West Central Texas Municipal Water District; and Wichita County Water Improvement District No. 2.

HYDROLOGIC CONDITIONS

Large variations in precipitation, runoff, and streamflow characterize the usual hydrologic conditions in Texas. In the eastern part of the State, streams typically are deep with wide alluvial flood plains, and streamflow is perennial. In the western part of the State, most streams flow through arroyos, and streamflow usually is ephemeral.
Streamflow across the State averaged normal during water year 2000.

Conservation storage in 77 selected reservoirs throughout the State, with a combined conservation capacity of 34,481,000 acre-feet, decreased from 76 percent at the end of September 1999 to 73 percent at the end of September 2000. Records from these reservoirs indicate that storage decreased in 70, increased in 5, and remained the same in 2.

The area for which water resources data are presented in volume 1 includes the Arkansas River Basin, Red River Basin, Sabine River Basin, Neches River Basin, and Intervening Coastal Basins. The area described in volume 1 and the location of selected streamflow and water-quality stations in the area are shown in figure 1.

Streamflow

In the area covered in volume 1, streamflow averaged normal during water year 2000. Streamflow for water year 2000 and for the period of record at four selected stations (fig. 1) for which data are included in volume 1 is presented in table 1.

At the four long-term hydrologic index stations in the State, monthly mean streamflow during water year 2000 averaged below normal. Monthly mean discharges for water year 2000 and the median of the long-term monthly means for water years 1961–90 for the four long-term hydrologic index stations in the State are shown in figure 2. Streamflow at the hydrologic index station Neches River near Rockland was below normal during November through April and normal for the remaining 6 months. The station North Bosque River near Clifton had above normal streamflow during June, normal streamflow during November and December, and below normal streamflow for the remaining 9 months. The station North Concho River near Carlsbad had above normal streamflow for March, below normal streamflow for May, and normal streamflow for the remaining 10 months. Streamflow for the station Guadalupe River near Spring Branch was below normal for each month of water year 2000.

Conservation storage in 22 selected reservoirs in this area of the State, with a total combined conservation capacity of 14,654,000 acre-feet, decreased from 83 percent of capacity at the end of September 1999 to 81 percent of capacity at the end of September 2000. Records from these reservoirs indicate

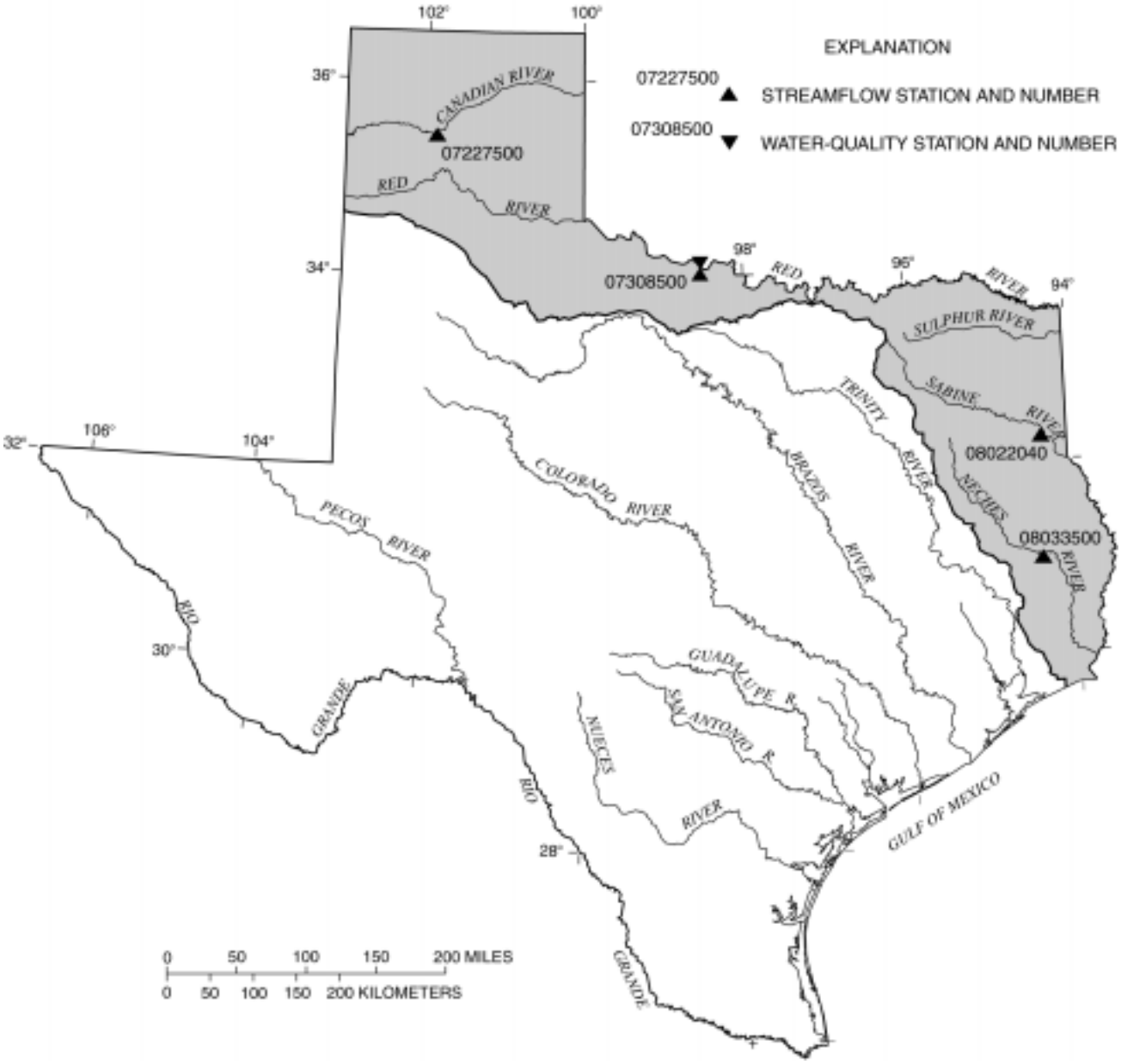
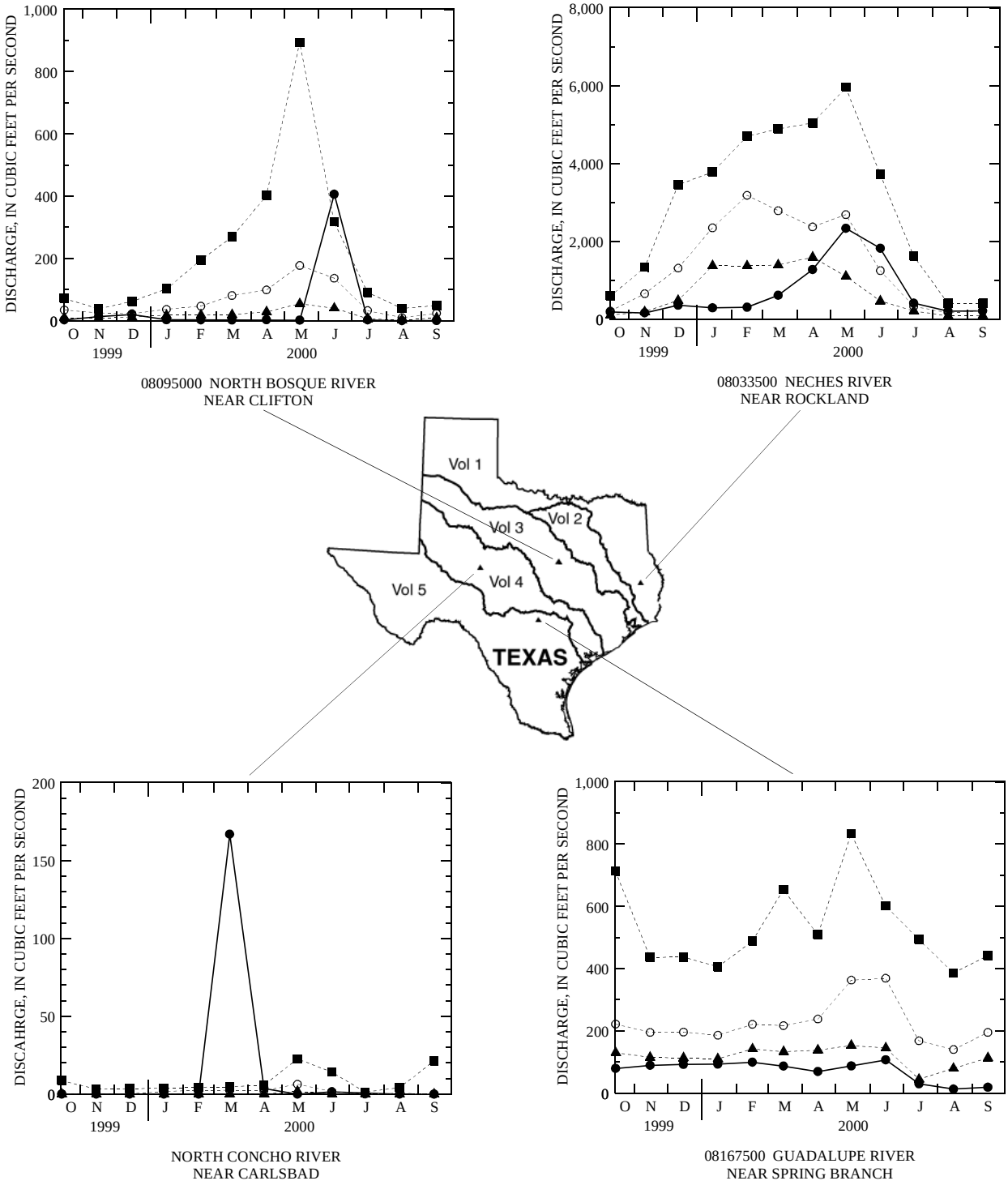


Figure 1. Area of Texas covered by volume 1 (shaded) and location of selected streamflow and water-quality stations in volume 1.



EXPLANATION

—●— **MONTHLY MEAN DISCHARGE FOR 2000 WATER YEAR**

– – –o– – – **MEDIAN OF MONTHLY MEAN DISCHARGE FOR 1961–90 WATER YEARS**

– – –▲– – – **25 PERCENT QUARTILE**

– – –■– – – **75 PERCENT QUARTILE**

Figure 2. Monthly mean discharges at four long-term hydrologic index stations during 2000 water year and median of the monthly mean discharges for 1961–90 water years.

that storage increased in 1, decreased in 20, and remained the same in 1 during the water year.

Water Quality

Dissolved-solids concentrations in most streams in the State are inversely related to streamflow discharges. During years when precipitation and runoff are less than normal, streamflow commonly is more mineralized than during years when precipitation and runoff are normal or greater than normal. However, for streams in which discharge is controlled by reservoirs, the dissolved-solids concentrations may remain relatively constant despite substantial fluctuations in precipitation and runoff.

Records of discharge-weighted-average concentrations of dissolved solids for water year 2000 are compared with those for water years 1996-2000 for selected long-term daily or continuous-record water-quality stations (fig. 1) in the Red River Basin. Results are shown in table 2.

Table 1. Streamflow at four selected stations

Station no. and name	Discharge during 2000 water year (cubic feet per second)			Discharge during period of record (cubic feet per second)		
	Maximum instantaneous	Minimum daily mean	Mean	Maximum instantaneous	Minimum daily mean	Mean
Arkansas River Basin						
07227500 Canadian River near Amarillo, TX	5,460	0	120	135,000	0	278 (1939-2000)
Red River Basin						
07308500 Red River near Burkburnett, TX	22,800	30	639	174,000	0	1,260 (1960-2000)
Sabine River Basin						
08022040 Sabine River near Beckville, TX	11,400	65	1,235	49,400	2.4	2,539 (1961-2000)
Neches River Basin						
08033500 Neches River near Rockland, TX	4,680	86	706	42,300	18	2,343 (1962-2000)

1/ Hydrologic index station.

Table 2. Comparison of records of discharge-weighted-average concentrations of dissolved solids for the 2000 and 1996-2000 water years

Station no. and name	Mean discharge (cubic feet per second)		Discharge-weighted-average concentration of dissolved solids (milligrams per liter)	
	2000	1996-2000	2000	1996-2000
Red River Basin				
07308500 Red River near Burkburnett, TX	639	1,764	2,990	2,642

SPECIAL NETWORKS AND PROGRAMS

Hydrologic Benchmark Network is a network of 50 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 human activities.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 40 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of the constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and remobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

Additional information about the NASQAN program is available through the world wide web at:

http://water.usgs.gov/nasqan/

The National Atmospheric Deposition Program/National Trends Network (NAPD/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of over 200 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO_2 emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO_2 and NOx scheduled to begin in 2000.

Data from the network, as well as information about individual sites, are available through the world wide web at:

http://nadp.sws.uiuc.edu

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, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Assessment activities are being conducted in 59 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.

Communication and coordination between USGS personnel and other local, State, and federal interests are critical components of the NAWQA Program. Each study unit has a local liaison committee consisting of representatives from key federal, State, and local water resources agencies, Indian nations, and universities in the study unit. Liaison committees typically meet semiannually to discuss their information needs, monitoring plans and progress, desired information products, and opportunities to collaborate efforts among the agencies. There are currently two NAWQA Programs operating in Texas; the Trinity NAWQA and the South Central Texas NAWQA.

Additional information about the NAWQA Program is available through the world wide web at:

http://water.usgs.gov/nawqa/nawqa_home.html
http://tx.usgs.gov/trin
http://tx.usgs.gov/sctx

Radiochemical Program 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 records published in this report are for the 2000 water year that began October 1, 1999, and ended September 30, 2000. 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, and water-quality data for surface water. 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 well 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.

Downstream Order Numbering

Since October 1, 1950, the order of listing hydrologic-station records in U.S. Geological Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a mainstream station are listed before that station. A station on a tributary that enters between two mainstream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary with respect to the stream to which it is immediately tributary is indicated by an indention in the "List of Stations" in the front of this report. Each indention represents one rank. This downstream order and system of indention shows 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 8-digit number for each station, such as 08057000, which appears just to the left of the station name, includes the 2-digit Part number "08" plus the 6-digit downstream-order number "057000." The Part number designates the major river basin; for example, Part "08" is the Western Gulf of Mexico basin.

Records of Stage and Water Discharge

Records of stage and streamflow may be complete or partial. Complete records of discharge are those obtained using a stage-recording device through which either instantaneous or daily mean discharges 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 for any time, or period of time. They may be obtained using a stage-recording device, but need not be. Because daily-mean discharges and reservoir contents commonly are published for such stations, they are referred to as "daily stations."

By contrast, partial records are obtained through discrete measurements 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 "Flood-hydrograph partial records, "Crest-stage partial records," or "Low-flow partial records." Records of miscellaneous discharge measurements or of measurements from special studies, such as low-flow channel gain and loss studies, may be considered as partial records, but they are presented separately in this report. Instantaneous peak discharges are presented for all but the low-flow partial-record stations.

Data Collection and Computation

The data obtained at a complete record gaging station on a stream or canal consist of records of stage (that is recorded every 5, 15, 30, or 60 minutes), measurements of discharge throughout a range of stages, and notations regarding factors that may affect the relation between stage and discharge. These data, together with supplemental information such as weather records, are used to compute daily mean 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 relation between stage and lake content. These data are used with stage-area and stage-capacity curves or tables to compute lake storage.

Records of stage are obtained with recorders at selected time intervals. Measurements of discharge are made with current meters and indirect procedures using methods adopted by the U.S. 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, TWRI, Chapter A6.

In computing discharge records, results of individual measurements are plotted against the corresponding stages, and stage-discharge relation curves then are constructed. From these curves, rating tables indicating the discharge for any stage within the range of the measurements are prepared. If it is necessary to define extremes of discharge outside the range of the current-meter measurements, the curves can be 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. Stage-discharge ratings at gaging stations are described in TWRI, Book 3, Chapter A10.

Instantaneous discharges are computed by applying each individual recorded stage (gage height) to the stage-discharge table. The daily mean discharge is computed as the mean of the instantaneous discharges. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the 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 rating 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 the 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 backwater from reservoirs, tributary streams, bays, or other sources. This necessitates the use of the slope method in which the slope (fall) in a reach of the stream is a factor in computing discharge. The slope 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 relation 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 are determined. If the stage-content relation changes because of deposition of sediment in a lake or reservoir, periodic resurveys may be necessary to redefine the relation. Even when this is done, the contents computed may increase in error as the lapsed time since the last survey increases. Discharges over lake or reservoir spillways are computed from stage-discharge relations much as other stream discharges are computed.

For some streamflow 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 stage sensor or recorder fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods, the daily mean 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. Information explaining how estimated daily discharge values are identified in station records is included in the next two sections, "Data Presentation" (REMARKS paragraph) and "Identifying Estimated Daily Discharge."

Data Presentation

Streamflow data in this report are presented in a format that is considerably different from the format in data reports prior to the 1991 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 pilot program to reformat the annual water-data report to meet current user needs and data preferences.

The records published for each continuous-record surface-water discharge station (gaging station) now consists of four 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; and 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.

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 only a few 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 which the revisions apply to. 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, 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 record 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 Daily Discharge.") If a remarks statement is used to identify estimated record, the paragraph will begin with this information presented as the first entry. The paragraph is also used to present information relative to the accuracy of the records, to special methods of computation, to conditions that affect natural flow at the station 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 U.S. 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 manuscripts 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 offices whose addresses are given on the back of the title page of this report 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.

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 EXTREMES 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 for stream-gaging stations gives mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be 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 are omitted if there is extensive regulation or diversion or if the drainage area includes large noncontributing areas. In the yearly summary below the monthly summary, the figures shown are the appropriate discharges for the calendar and water years. At some stations monthly and (or) yearly observed discharges are adjusted for reservoir storage or diversion, or diversions or reservoir contents are given.

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 daily 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, expressed as “FOR WATER YEARS ____- ____, BY WATER YEAR (WY),” will list the first and last water years of the range 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 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. However, data for partial water years, if any, will only be used in the statistical calculations, if appropriate. For example, 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 column heading. When this occurs, it should be noted in the REMARKS paragraph or in footnotes. Selected streamflow duration curve statistics and runoff data are also given. Runoff data is 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 footnotes.

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 analyses 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.

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 average 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 of the runoff for a given time period were uniformly distributed on it.

10 PERCENT EXCEEDS.--The discharge that has been exceeded 10 percent of the time for the designated period.

50 PERCENT EXCEEDS.--The discharge that has been exceeded 50 percent of the time for the designated period.

90 PERCENT EXCEEDS.--The discharge that has been exceeded 90 percent of the time for the designated period.

Data collected at partial-record stations follow the information for continuous-record sites. Data for partial-record discharge stations are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations, and the second is a table of annual maximum stage and discharge at crest-stage partial-record stations. 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 measurements at miscellaneous sites.

Identifying Estimated Daily Discharge

Estimated daily discharge values published in the water-discharge tables of annual State data reports are identified either by flagging individual daily values with the letter symbol “e” and printing a table footnote, “e Estimated,” or by listing the dates of the estimated record in the REMARKS paragraph of the station description.

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 their true values; “good,” within 10 percent; and “fair,” within 15 percent.

Records that do not meet the criteria mentioned are rated “poor.” Different accuracies may be attributed to different parts of a given record.

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

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

Other Records Available

Information used in the preparation of the records in this publication, such as discharge-measurement notes, gage-height records, temperature measurements, and rating tables, is on file in the Texas District. Also, most of the daily mean discharges are in computer-readable form and have been analyzed statistically. Information on the availability of the unpublished information or on the results of statistical analyses of the published records may be obtained from the offices whose addresses are given on the back of the title page of this report.

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 one 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 obtained by data logger. 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.

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. Records of surface-water quality at some National Water Quality Accounting (NAWQA) Sites include data collected by different government agencies as identified in the water-quality data tables under AGENCY COLLECTING SAMPLE (CODE NUMBER). Values for this code are given below:

1028 - U.S. Geological Survey
84823 - International Boundary & Water Commission

Procedures for on site measurements and for collecting, treating, and shipping samples are given in publications on "Techniques of Water-Resources Investigations," Book 1, Chap. D2; Book 3, Chap. C2; Book 5, Chap. A1, A3, and A4. All of these references are listed under "PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS" which appears at the end of the introductory text. Detailed information on collecting, treating, and shipping samples may be obtained from the Texas Office of the Central Region Office.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load. All samples obtained for the National Stream Quality Accounting Network (NASQAN) (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. Information on the method used to collect the sample at National Stream Quality Accounting Network sites is given in the water-quality data tables under SAMPLING METHOD. Values for this code are given below:

10 - Equal Width Increment (EWI)
20 - Equal Discharge Increment (EDI)
25 - Timed Sampling Interval
30 - Single Vertical
40 - Multiple Verticals
50 - Point Sample
60 - Weighted Bottle
70 - Grab Sample (DIP)
90 - Discharge Integrated, Centroid
120 - Velocity Integrated
8010 - Other

Detailed information on sampling methods may be found in the following publications: OFR-90-127 "Guidelines for Collection and Analysis of Water-Quality Samples from Streams in Texas", OFR-94-455 "Field Guide for Collecting and Processing Stream-Water Samples for the National Water-Quality Assessment Program", and OFR-94-539 "U.S. Geological Survey protocol for the collection and processing of surface-water samples for the subsequent determination of inorganic constituents in filtered water". Specific questions pertaining to water-quality sample collection may be directed to the District

Water-Quality Specialist in Austin, Texas, or the Regional Water-Quality Specialist in Denver, Colorado.

Additional information about the NASQAN program is available through the world wide web at:

http://water.usgs.gov/public/nasqan/

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.

For chemical-quality stations equipped with water-quality monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly readings beginning at 0100 hours and ending at 2400 hours for the day of record.

Water Temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at the 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.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published. Water temperatures measured at the time of water-discharge measurements are on file in the Texas District Office.

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.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided-day method (time-discharge-weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided-day method. For periods when no samples were collected, daily discharges of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

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

In addition to the records of suspended-sediment discharge, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included for some stations.

Laboratory Measurements

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

Historical and current (2000) dissolved trace-element concentrations are reported herein for water that was collected, processed, and analyzed by using either ultraclean or other than ultraclean techniques. If ultraclean techniques were used, then those concentrations are reported in nanograms per liter. If other than ultraclean techniques were used, then those concentrations are reported in micrograms per liter and could reflect contamination introduced during some phase of the procedure.

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, radio-chemical data, and so forth, obtained at a frequency less than daily are presented first. Tables of “daily values” of specific conductance, pH, water temperature, dissolved oxygen, and suspended sediment then follow in sequence.

In the descriptive headings, if the location is identical to that of the discharge gaging station, neither the LOCATION nor the DRAINAGE AREA statements are repeated. The following information, as appropriate, is provided with each continuous-record station. Comments that follow clarify information presented under the various headings of the station description.

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. These 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 U.S. 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 insure 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 or 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 (non-ideal colony count).
L	Biological organism count less than 0.5 percent (Organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.
V	Analyte was detected in both the environmental sample and the associated blanks.
M	Presence of material verified but not qualtified.

Dissolved Trace-Element Concentrations

NOTE: Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (mg/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 to 100's of nanograms per liter (ng/L). Data above the mg/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 some stations in water year 1994.

Change in National Trends Network Procedures

NOTE: Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (303-491-5643).

Water-Quality Control Data

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this District are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank - a blank solution that is subjected to all aspects of sample collection, field processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution that is put in the same type of bottle used for an environmental sample, and kept with the set of sample bottles before and after sample collection.

Equipment blank - a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to field blank but normally done in the more controlled conditions of the office).

Sampler blank - a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank - a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution that is treated with the sample preservatives used for an environmental sample.

Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Sequential sample - a type of replicate sample in which the samples collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with necessary telemetry and historic daily-mean and peak-flow discharge

data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at

http://tx.usgs.gov

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape, 3-1/2 inch floppy disk or CD-ROM. 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 District Offices (See address on the back of the title page.)

DEFINITION 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.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point. This term designates titration of an "unfiltered" sample (formerly reported as alkalinity).

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 325,851 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter.

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

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Alkalinity is the capacity of solutes in an aqueous system to neutralize acid. This term designates titration of a "filtered" sample.

Bacteria are microscopic unicellular organisms, typically spherical, rod-like, 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. This group includes coliforms that inhabit the intestine of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-sha-ped bacteria which ferment lactose with gas formation within 48 hours at 35 ºC. 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 ºC ± 1.0 ºC 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 ºC ± 0.2 ºC 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 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 that are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms that produce red or pink colonies within 48 hours at +35 ºC ± 1.0 ºC 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.

Benthic organisms (invertebrates) are the group of animals inhabiting the bottom of an aquatic invironment. They include a number of types of organisms, such as bacteria, fungi, insect larvae and nymphs, snails, clams, and crayfish. They are useful as indicators of water quality.

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 or volume of habitat.

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

Dry mass refers to the mass of residue present after drying in an oven at 105 ºC 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 ash mass and represents the actual mass of the living matter. Organic mass is expressed in the same units as for ash mass 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 plankton cells or natural units counted using a microscope and grid or counting cell. Results are generally reported as cells or units per milliliter.

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 BOD 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 chloroplatinate 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 or to prevent the intrusion of salt water.

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 foot per second per day [$(ft^3/s)/d$] is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

Cubic feet per second per square mile [$(ft^3/s)/mi^2$] 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 µm 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 0.4926 to reflect the change.

Drainage area of a site on 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 specified.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system with a common outley for it's surface runoff, 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.

Extractable organic halides (EOX) are organic compounds which contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried stream bottom sediments. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of th stream bottom sediments.

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.

Supplementary gage is a gage used to obtain additional data. A supplementary gage may be used in place of the principal gage if the latter is isolated or cut

off from the channel, or registers only above (or below) a certain gage height. One or more supplementary gages may be used on bypass channels or overflow channels, or on streams that flow in several channels, each of which is rated independently.

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

High tide is the maximum height reached by each rising tide.

Hydrologic unit is a geographic area representing part or 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 8-digit number.

Low tide is the minimum height reached by each falling tide.

Mean high tide is the average of all high tides over a specified period.

Mean low tide is the average of all low tides over a specified period.

Mean water level is the average of all tides over a specified period.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

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.

Microsiemens per centimeter (µS/cm, US/CM) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

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. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. MPN is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic-invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

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 area habitat, usually square meter (m^2), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

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

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

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent. The codes used in NWIS 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	0.004	-	0.062	Sedimentation
Sand	0.062	-	2.0	Sedimentation/sieve
Gravel	2.0	-	64.0	Sieve

The partial size distributions 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 (1×10^{-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. Concentrations are expressed as a number of cells per milliliter (cells/mL of sample).

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 known 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, zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

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 released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg C/(m^2/time)] for periphyton and macrophytes and [mg C/(m^3/time)] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon-14). The carbon-14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg 0/(m^2/time)] for periphyton and macrophytes and [mg 0/(m^3/time)] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Radiochemical program 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.

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 would be required of all laboratories performing such analyses because different 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 was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports and refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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). The entire sample is used for the analysis.

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

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

Suspended-sediment load is a general term that refers to material in suspension. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with either discharge or concentration.

Suspended total residue at 105 ^oC concentration is the concentration of suspended sediment in the sampled zone expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). A small aliquot of the sample is used for the analysis.

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 cross 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. The term needs to be qualified, such as "annual suspended-sediment load" or "sand-size suspended-sediment load," and so on. It is not synonymous with total-sediment discharge.

Sodium-absorption-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 ^oC. 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 55 to 75 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 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 imersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates

are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hard-board) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest USGS 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.

Synoptic Studies Short-term investigations of specific water-quality conditions during selected seasonal or hydrologic peri ods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchal 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

Thermograph is an instrument that continuously records variations of temperature on a chart. The more general term "temperature recorder" is used in the table headings and refers to any instrument that records temperature whether on a chart, a tape, or any other medium.

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 rate representing a mass of 1 ton of a constituent in streamflow passing a cross section in 1 day. It is equivalent to 2,000 poinds per day, or 0.9072 metric tons per day.

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 determined 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 soluble 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.

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.

Volatile Organic Compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are man-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxid and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 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 September 30, 1990, is called the "1990 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 reference to previously published reports.

PUBLICATIONS OF TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

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

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

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

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.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

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.

Section E. Subsurface Geophysical Methods

2-E1. ***Application of borehole geophysics to water-resources investigations***, by W.S. Keys and L.M. MacCary: USGS--TWRI 11.0

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

Section F. Drilling and Sampling Methods

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

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

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

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

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

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

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

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

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

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

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

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

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

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

3-A13. ***Computations 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, N. Yotsukura, G.W. Parker, and L.L. DeLong: USGS--TWRI Book 3, Chapter A18. 1989. 52 pages.

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

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

3-A21. ***Stream-gaging cableways***, by C. Russell Wagner: USGS--TWRI Book 3, Chapter A21. 1995. 56 pages.

Section B. Ground-Water Techniques

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 programmed text for self instruction***, by G.D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

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

3-B4. ***Regression modeling of ground-water flow***, by Richard L. Cooley and Richard 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.

Section C. Sedimentation and Erosion Techniques

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.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

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.

Section B. Surface Water

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

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

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

Section D. Interrelated Phases of the Hydrologic Cycle

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.

Book 5. Laboratory Analysis

Section A. Water Analysis

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

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

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.

Section A. Sediment Analysis

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

Book 6. Modeling Techniques

Section A. Ground Water

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.

6-A6. ***A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction***, by Eric D. Swain and Eliezer J. Wexler. 1995. 125 pages.

Book 7. Automated Data Processing and Computations

Section C. Computer Programs

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

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

7-C3. ***A model for simulation of flow in singular and interconnected channels***, by R.W. Schaffrannek, R.A. Baltzer, and D.E. Goldberg: USGS--TWRI Book 7, Chapter C3. 1983. 110 pages.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

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.

Section B. Instruments for Measurement of Discharge

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.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

9-A1. ***National Field Manual for the Collection of Water-Quality Data: Preparations for Water Sampling,*** by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A1. 1998. 47 pages.

9-A2. ***National Field Manual for the Collection of Water-Quality Data: Selection of Equipment for Water Sampling,*** edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A2. 1998. 94 pages.

9-A3. ***National Field Manual for the Collection of Water-Quality Data: Cleaning of Equipment for Water Sampling,*** edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A3. 1998. 75 pages.

9-A5. ***National Field Manual for the Collection of Water-Quality Data: Processing of Water Samples,*** edited by F.D. Wilde, D.B. Radtke, Jacob Gibs, and R.T. Iwatsubo: USGS--TWRI Book 9, Chapter A5. 1999. 149 pages.

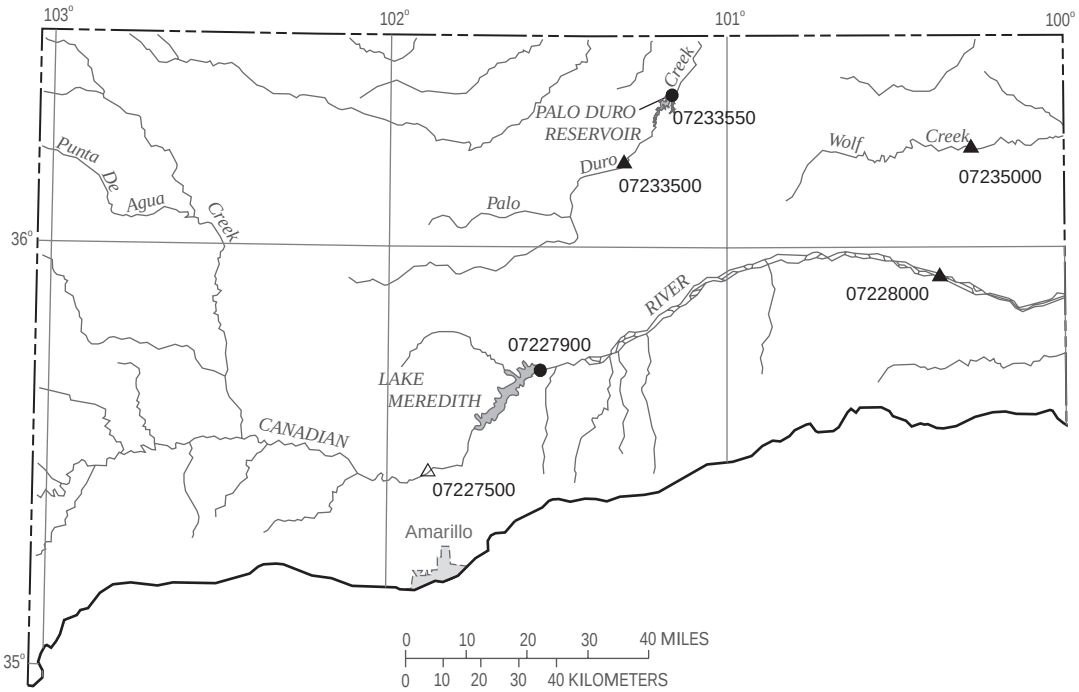
9-A6. ***National Field Manual for the Collection of Water-Quality Data: Field Measurements***, edited by F.D. Wilde and D.B. Radtke: USGS--TWRI Book 9, Chapter A6. 1998. Variously paginated.

9-A7. ***National Field Manual for the Collection of Water-Quality Data: Biological Indicators***, edited by D.N. Myers and F.D. Wilde: USGS--TWRI Book 9, Chapter A7. 1997. 49 pages.

9-A7. ***National Field Manual for the Collection of Water-Quality Data: Five-Day Biochemical Oxygen Demand,*** by G.C. Delzer and S.W. McKenzie: USGS-TWRI Book 9, Chapter A7.2. 1999. 28 pages.

9-A8. ***National Field Manual for the Collection of Water-Quality Data: Bottom Material Samples***, by D.B. Radtke: USGS--TWRI Book 9, Chapter A8. 1998. 48 pages.

9-A9. ***National Field Manual for the Collection of Water-Quality Data: Saafety in Field Activities***, by S.L. Lane and R.G. Fay: USGS--TWRI Book 9, Chapter A9. 1998. 60 pages.



EXPLANATION

07235000	▲	**Surface-water continuous station and number**
07227500	△	**Surface-water continuous/water-quality station and number**
07233550	●	**Reservoir station and number**

Figure 3.--Map showing location of gaging stations in the Arkansas River Basin

07227500 Canadian River near Amarillo, TX 28
07227900 Lake Meredith near Sanford, TX 36
07228000 Canadian River near Canadian, TX 38
07233500 Palo Duro Creek near Spearman, TX 40
07233550 Palo Duro Reservoir near Spearman, TX 44
07235000 Wolf Creek at Lipscomb, TX 46

07227500 CANADIAN RIVER NEAR AMARILLO, TX

LOCATION.--Lat 35°28′13", long 101°52′45", Potter County, Hydrologic Unit 11090105, on left bank at downstream side of southbound lane of bridge on U.S. Highways 87 and 287, 1,500 ft downstream from Pitcher Creek, 1.4 mi downstream from East Amarillo Creek, 1.7 mi downstream from Panhandle and Santa Fe Railway Co. bridge, 19 mi north of Amarillo, and 537.7 mi upstream from mouth.

DRAINAGE AREA.--19,445 mi^2, of which 4,069 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jan 1924 to Dec 1925 (period no longer used in computation of average annual discharge), Jan 1938 to current year. Monthly discharge only for some periods, published in WSP 1311.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,989.16 ft above sea level. Jan 16, 1924, to Dec 31, 1925, and Apr 3 to Jun 1, 1938, nonrecording gage at site of old bridge 20 ft upstream at same datum. Jun 2 to Dec 5, 1938, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since installation of gage, at least 10% of contributing drainage area has been regulated by Conchas and Ute Reservoirs in New Mexico, storage 439,000 acre-feet. Conchas and Bell Ranch Canals divert water from Conchas Reservoir upstream for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of about 24 ft; a higher stage probably occurred during a flood in Oct 1904, but stage is unknown; information by local resident.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	43	9.9	23	27	25	573	720	28	26	186	47	.00
2	31	9.8	21	26	23	711	839	28	129	110	21	.00
3	28	9.5	19	24	22	890	573	e28	52	112	19	.00
4	26	9.9	30	21	22	669	595	e26	32	99	15	.00
5	23	13	36	22	21	601	620	25	19	101	12	.00
6	21	15	31	22	20	600	e479	23	14	91	8.0	.00
7	25	16	26	23	20	601	e440	20	13	139	e7.4	.00
8	38	15	29	22	32	675	e449	18	10	110	e5.8	.00
9	29	15	37	29	121	629	326	17	8.4	71	e5.5	.00
10	24	14	32	27	144	598	240	15	17	59	e4.5	.00
11	19	14	33	26	182	657	182	12	25	47	e3.6	.00
12	17	e17	30	24	227	656	149	10	18	134	e2.8	.00
13	17	e17	32	23	284	668	128	9.2	13	128	e1.9	.00
14	19	e18	33	23	329	677	111	7.7	11	207	e1.0	.00
15	15	18	e28	22	372	648	99	6.8	8.1	145	e.60	.00
16	14	19	e26	21	371	657	90	5.6	5.9	73	e.45	.00
17	14	19	e25	22	372	659	82	4.7	5.5	48	e.10	.00
18	14	17	e23	23	448	533	73	e4.1	5.8	e42	.00	.00
19	13	16	e24	23	483	265	66	e3.6	6.1	e56	.00	.00
20	13	15	e25	23	513	180	61	e3.0	5.1	29	.00	.00
21	13	15	30	21	513	162	63	e2.4	3.7	15	.00	.00
22	14	15	35	21	516	263	63	e2.3	3.8	25	.00	.00
23	14	15	31	21	524	1690	58	2.3	11	135	.00	.00
24	14	15	36	24	539	989	51	2.1	19	178	.00	.00
25	13	22	32	23	465	700	46	2.6	5.7	300	.00	.00
26	13	23	32	20	263	527	41	192	5.4	254	.00	.00
27	12	23	29	19	369	460	36	93	8.5	215	.00	.00
28	11	23	30	21	530	464	32	111	1470	219	.00	.00
29	10	22	29	22	563	480	29	65	631	190	.00	.00
30	10	21	29	27	---	457	28	44	202	95	.00	.00
31	10	---	28	24	---	496	---	31	---	61	.00	---
TOTAL	577	491.1	904	716	8313	18835	6769	842.4	2784.0	3674	155.65	0.00
MEAN	18.6	16.4	29.2	23.1	287	608	226	27.2	92.8	119	5.02	.000
MAX	43	23	37	29	563	1690	839	192	1470	300	47	.00
MIN	10	9.5	19	19	20	162	28	2.1	3.7	15	.00	.00
AC-FT	1140	974	1790	1420	16490	37360	13430	1670	5520	7290	309	.00

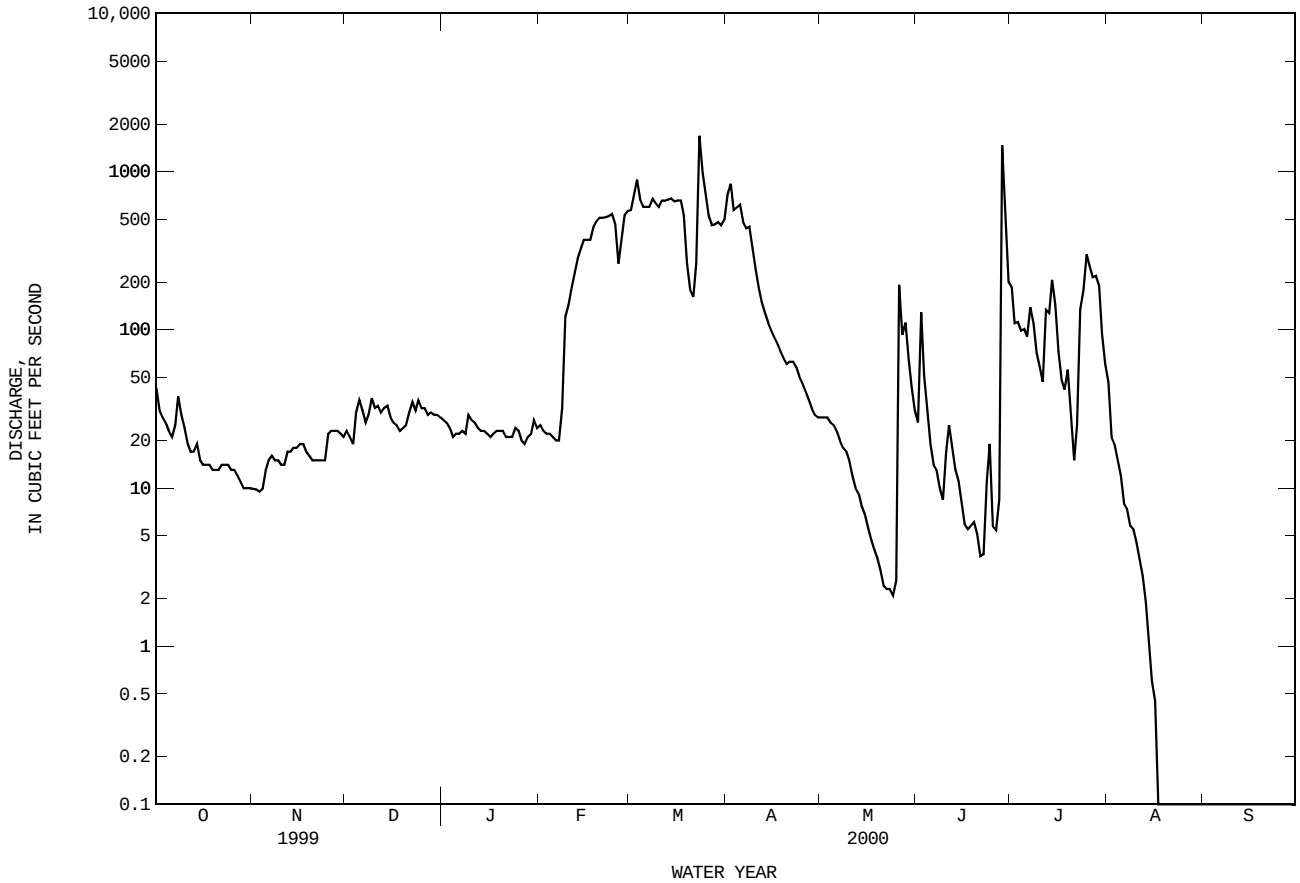
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)

MEAN	307	78.9	50.6	55.9	50.0	52.4	179	438	505	561	526	518
MAX	5663	812	458	519	287	608	5988	6804	5288	4880	3007	8016
(WY)	1942	1942	1942	1943	2000	2000	1942	1941	1941	1941	1981	1941
MIN	.57	1.52	1.25	4.75	3.00	1.86	1.51	4.60	.95	.24	.11	.000
(WY)	1981	1978	1984	1978	1939	1940	1978	1945	1990	1998	1983	2000

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000	
ANNUAL TOTAL	103659.2		44061.15			
ANNUAL MEAN	284		120		278	
HIGHEST ANNUAL MEAN					2351	1941
LOWEST ANNUAL MEAN					37.7	1984
HIGHEST DAILY MEAN	4100	May 27	1690	Mar 23	79600	Sep 23 1941
LOWEST DAILY MEAN	1.9	Mar 5	.00	Aug 18	.00	Aug 7 1940
ANNUAL SEVEN-DAY MINIMUM	2.3	Mar 1	.00	Aug 18	.00	Sep 3 1983
INSTANTANEOUS PEAK FLOW			5460	Mar 23	135000	Jul 25 1941
INSTANTANEOUS PEAK STAGE			5.19	Mar 23	15.70	Jul 25 1941
INSTANTANEOUS LOW FLOW					.00	Oct 1 1977
ANNUAL RUNOFF (AC-FT)	205600		87400		201500	
10 PERCENT EXCEEDS	1020		501		475	
50 PERCENT EXCEEDS	62		23		27	
90 PERCENT EXCEEDS	13		.00		4.0	

e Estimated



07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1948 to Oct 1949, Feb 1950 to Sep 1997, Oct 1998 to current year.
BIOCHEMICAL DATA: Mar 1968 to Sep 1997.
PESTICIDE DATA: Mar 1968 to Jun 1981.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1950 to current year.
WATER TEMPERATURE: Aug 1949 to current year.
SUSPENDED SEDIMENT DISCHARGE: Aug 1949 to Sep 1952.

INSTRUMENTATION.--Water-quality monitor since Oct 1995.

REMARKS.--Records fair. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1991 to 2000. The standard error of estimate for dissolved solids is 5%, chloride is 38%, sulfate is 22% and for hardness is 38%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. No flow Aug 18-Sep 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,180 microsiemens, Jun 8, 1990; minimum daily, 291 microsiemens, Jun 28,2000.
WATER TEMPERATURE: Maximum daily, 39.0°C Jul 7, 1973; minimum, -.5°C, on Jan 9-11, and 23, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 8,060 microsiemens, Jun 23; minimum, 291 microsiemens, Jun 28.
WATER TEMPERATURE: Maximum, 37.4°C, Jun 25; minimum, -.4°C, on several days.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	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)
NOV											
17...	1255	18	4320	8.4	15.5	9.8	111	580	390	130	61
JAN											
25...	1120	22	4510	8.5	2.5	12.6	102	630	440	150	65
APR											
26...	1027	42	3910	8.4	16.5	9.0	103	490	310	100	57
JUN											
14...	1350	12	2050	8.5	25.5	8.0	109	300	140	73	29
AUG											
09...	0947	5.5	3110	8.2	23.0	7.6	99	500	370	120	47

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
NOV											
17...	657	12	6.4	180	550	970	.57	14	2500	--	<.010
JAN											
25...	756	13	6.6	190	560	1100	.66	14	2750	2.27	.016
APR											
26...	593	12	7.1	180	510	850	.58	11	2240	--	<.010
JUN											
14...	318	8	6.0	160	260	410	.51	8.8	1210	.652	.011
AUG											
09...	434	8	6.7	130	490	650	.47	11	1840	--	<.010

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

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

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
NOV										
17...	<.050	<.020	--	--	.15	--	--	<.050	<.010	--
JAN										
25...	2.28	.023	--	.27	.30	--	--	.212	.210	.64
APR										
26...	.161	<.020	.41	--	.17	.25	.032	<.006	<.010	--
JUN										
14...	.663	<.020	1.6	--	.32	.99	.213	.008	<.010	--
AUG										
09...	.071	<.020	.58	--	.24	.51	.051	E.004	<.010	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	577	3730	2180	3400	800	1240	480	748	490
NOV.	1999	491.1	4610	2720	3610	1100	1400	580	771	610
DEC.	1999	904	4290	2520	6160	950	2330	540	1330	570
JAN.	2000	716	4510	2660	5150	1000	1970	570	1100	600
FEB.	2000	8313	1730	995	22330	320	7120	230	5190	220
MAR.	2000	18835	1500	862	43840	260	13450	200	10350	190
APR.	2000	6769	1900	1100	20040	360	6540	250	4620	240
MAY	2000	842.4	3620	2120	4830	790	1790	460	1050	480
JUNE	2000	2784	1280	734	5520	220	1680	170	1310	160
JULY	2000	3674	2200	1270	12640	420	4160	290	2900	280
AUG.	2000	155.65	2850	1660	697	570	239	370	157	370
SEPT	2000	0	--	--	--	--	--	--	--	--
TOTAL		44061.15	**	**	128200	**	41920	**	29530	**
WTD.AVG.		120	1860	1080	**	350	**	250	**	240

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	3410	3220	3330	4030	3820	3920	4290	4030	4170	4270	4090	4170
2	3220	3080	3140	4160	4000	4080	4680	4280	4430	4240	4100	4170
3	3280	3170	3240	4320	4160	4240	4830	4680	4770	4220	4120	4170
4	3250	3120	3180	4330	4200	4260	4750	4010	4330	4480	3590	4230
5	3450	3240	3320	4280	4200	4240	4370	3420	4070	4750	4280	4520
6	3720	3420	3560	4300	4200	4250	4150	3490	3950	4690	4310	4530
7	3830	3120	3630	4390	4260	4300	4380	4130	4290	4770	4140	4520
8	3820	3150	3540	4440	4250	4320	4410	4310	4370	4760	4370	4590
9	4350	3660	4050	4530	4290	4450	4380	4070	4210	4600	4240	4400
10	4360	3920	4160	4300	4180	4220	4620	4260	4440	5000	4340	4690
11	3920	3830	3890	4310	4220	4270	4650	4220	4420	5420	5000	5250
12	3830	3700	3760	4320	4190	4250	4950	4640	4810	5390	4530	5030
13	3810	3610	3750	4430	4220	4320	4980	4530	4750	4530	3920	4240
14	4120	3610	3800	4470	4380	4420	4760	4440	4530	4180	3860	4010
15	4670	4120	4420	4420	4250	4360	5260	4640	4960	4280	4040	4160
16	4730	4400	4620	4270	4190	4230	5260	4410	4770	4400	4200	4310
17	4400	3830	4080	4400	4200	4280	4450	4090	4340	4400	4300	4350
18	3830	3650	3800	4820	4400	4620	4090	3870	3970	4500	4350	4420
19	3870	3790	3820	4990	4810	4900	4170	4010	4100	4630	4470	4550
20	3910	3820	3860	5140	4940	5040	4230	4130	4180	4690	4520	4610
21	3940	3860	3890	5160	5100	5130	4420	4120	4290	4860	4680	4770
22	3890	3710	3800	5130	4860	5090	4400	3820	4180	4800	4450	4630
23	4190	3820	3980	5080	4990	5030	4620	4320	4460	4460	4250	4350
24	4360	4160	4240	5010	4940	4980	4490	4030	4200	4510	4160	4360
25	4360	3990	4190	5000	4580	4750	4310	4010	4160	4760	4460	4590
26	3990	3700	3780	5390	4680	5000	4030	3850	3910	4840	4760	4790
27	3820	3700	3740	5930	5380	5700	4050	3800	3940	4840	4720	4800
28	3900	3770	3830	5920	4680	5290	4030	3750	3860	4920	4720	4840
29	4090	3890	3990	4690	4370	4470	4090	3950	4010	5000	4730	4850
30	4060	3930	4020	4480	4150	4410	4140	4000	4070	4740	3610	4380
31	3930	3730	3810	---	---	---	4240	4010	4100	4850	4460	4660
MONTH	4730	3080	3810	5930	3820	4560	5260	3420	4290	5420	3590	4510

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5010	4740	4840	1560	1510	1540	1500	1380	1450	4610	4410	4510
2	5190	4830	4980	1530	1480	1500	1460	1340	1410	4670	4470	4560
3	5240	4900	5050	1550	1450	1480	1520	1440	1480	4610	4510	4570
4	5070	4940	5010	1520	1460	1490	1540	1480	1510	4650	4510	4580
5	4970	4890	4920	1550	1480	1510	---	---	e1530	4760	4570	4660
6	5040	4880	4920	1570	1480	1530	---	---	e1540	4920	4700	4790
7	4970	4870	4910	1540	1510	1530	---	---	e1550	5290	4890	5050
8	5160	4870	4960	1550	1500	1530	---	---	e1570	5270	5200	5250
9	6220	3210	4890	1560	1510	1540	---	---	e1590	5350	5200	5260
10	3210	2120	2470	1560	1510	1530	---	---	e1650	5690	5310	5470
11	2120	1870	1970	1560	1480	1520	2080	1840	1990	5900	5570	5720
12	---	---	e1810	1560	1480	1500	2230	2080	2140	5780	5420	5640
13	---	---	e1760	1530	1460	1500	2550	2230	2390	5570	5350	5440
14	1840	1720	1800	1540	1430	1510	3010	2540	2720	5640	5390	5510
15	1810	1690	1750	1530	1500	1520	3560	3010	3320	5710	5430	5550
16	1740	1600	1640	1530	1480	1510	3680	3560	3610	5870	5570	5680
17	1640	1530	1580	1530	1480	1510	3750	3550	3630	6060	5620	5810
18	---	---	e1490	1590	1480	1530	3800	3660	3720	---	---	e5750
19	---	---	e1430	1710	1560	1640	3970	3730	3820	---	---	e5740
20	---	---	e1390	1950	1710	1820	4020	3860	3920	---	---	e5710
21	---	---	e1400	2180	1920	2040	4280	3930	4110	---	---	e5670
22	---	---	e1430	2200	1620	2090	4580	4240	4350	---	---	e5650
23	1500	1430	1460	2790	839	1490	4650	4210	4480	---	---	e5500
24	1540	1460	1500	1400	857	1180	4210	3990	4080	---	---	e5360
25	1590	1490	1540	1480	1330	1400	4100	3980	4040	5220	2680	4640
26	1710	1560	1630	1480	1440	1460	3980	3910	3940	6320	1160	3290
27	1730	1690	1710	1470	1430	1460	4140	3920	4020	1940	1530	1780
28	2050	1660	1760	1480	1440	1470	4310	4090	4190	4260	1370	2300
29	1990	1560	1710	1500	1480	1490	4560	4290	4430	4260	2800	3640
30	---	---	---	1520	1460	1490	4420	4150	4300	3770	2560	3090
31	---	---	---	1530	1470	1490	---	---	---	3160	2560	2850
MONTH	---	---	2680	2790	839	1540	---	---	2950	---	---	4810

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	2960	2490	2630	2390	1110	1530	3270	2440	2950	---	---	---
2	2630	754	1640	3270	2390	3010	2480	2370	2410	---	---	---
3	2140	937	1540	2440	1290	2040	2530	2350	2430	---	---	---
4	2520	1510	2010	2200	1280	1690	2710	2470	2570	---	---	---
5	3140	2210	2550	2940	1880	2470	3010	2660	2830	---	---	---
6	3490	2260	2780	2660	1870	2220	3160	2880	3000	---	---	---
7	2260	1120	1730	2440	1780	2060	3290	2980	3090	---	---	---
8	1290	749	1050	2110	1670	1910	3240	3040	3150	---	---	---
9	2030	701	1030	2390	1880	2100	3540	2940	3220	---	---	---
10	7200	1100	3260	2440	1860	2140	5660	2210	3600	---	---	---
11	4760	2430	3070	2760	2100	2360	3840	2360	3050	---	---	---
12	2770	2130	2390	2340	1200	1800	3640	3060	3360	---	---	---
13	2530	1580	2130	3100	1200	1930	4240	3640	3990	---	---	---
14	2400	1570	1950	1890	986	1150	---	---	e4100	---	---	---
15	2310	1140	1790	1110	983	1030	---	---	e4300	---	---	---
16	1140	770	880	1170	984	1060	---	---	e4500	---	---	---
17	1320	825	1030	---	---	e1100	---	---	e4600	---	---	---
18	1420	685	1060	---	---	e1130	---	---	---	---	---	---
19	1800	787	1390	---	---	e1150	---	---	---	---	---	---
20	1170	790	945	1830	1040	1290	---	---	---	---	---	---
21	1340	891	1100	2400	1830	2080	---	---	---	---	---	---
22	1350	919	1100	2760	2080	2290	---	---	---	---	---	---
23	8060	907	1540	3010	2420	2690	---	---	---	---	---	---
24	1590	1090	1370	3010	2660	2810	---	---	---	---	---	---
25	1980	920	1480	3020	2640	2890	---	---	---	---	---	---
26	1250	876	1130	2960	2370	2790	---	---	---	---	---	---
27	3340	582	1850	2540	2220	2360	---	---	---	---	---	---
28	2700	291	1230	2660	2540	2610	---	---	---	---	---	---
29	1120	728	959	2790	2560	2670	---	---	---	---	---	---
30	1440	1060	1220	3170	2760	2940	---	---	---	---	---	---
31	---	---	---	3380	2970	3160	---	---	---	---	---	---
MONTH	8060	291	1660	---	---	2080	---	---	---	---	---	---

e Estimated

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.6	12.0	17.3	14.5	7.2	10.3	11.6	5.8	8.3	12.6	3.2	6.9
2	19.7	8.6	13.9	14.6	3.9	8.3	12.0	5.7	8.3	10.0	1.7	5.3
3	20.3	9.4	14.2	16.3	4.3	9.5	11.6	2.1	6.2	4.5	-.3	1.5
4	22.5	10.5	15.5	16.4	4.6	10.1	6.3	1.1	3.2	5.4	-.3	1.1
5	25.5	12.0	17.9	18.4	6.7	12.0	7.1	-.3	2.2	6.1	-.3	1.6
6	22.9	14.2	17.9	18.5	7.2	12.4	6.1	-.3	2.3	6.8	-.3	1.9
7	22.3	13.0	16.5	19.5	8.7	13.6	8.8	-.3	3.4	6.0	-.3	1.8
8	19.0	13.6	16.0	19.5	10.3	14.5	9.4	1.2	4.7	8.4	-.3	2.7
9	25.2	13.3	18.2	19.9	11.7	14.9	7.8	.4	3.5	8.0	-.4	2.7
10	26.0	12.5	18.5	19.2	8.4	13.3	6.7	-.1	2.9	9.3	-.3	3.5
11	24.9	12.9	18.3	19.7	9.7	14.1	7.7	.0	3.2	10.7	-.4	4.6
12	24.6	12.9	18.0	19.2	9.2	13.6	7.5	-.3	3.0	12.1	1.4	6.2
13	23.0	12.1	17.0	19.6	9.4	14.1	7.0	-.3	2.7	10.1	.6	4.7
14	23.1	11.4	16.5	17.7	9.0	13.0	3.8	-.3	1.7	8.9	-.3	3.7
15	23.9	13.1	17.2	17.6	7.4	11.9	4.6	-.4	.7	13.2	2.4	6.8
16	16.9	9.1	12.6	17.4	7.2	12.1	4.5	-.3	1.2	12.1	1.9	6.5
17	9.1	6.7	7.8	16.6	7.7	11.9	6.7	.2	3.2	9.1	3.2	5.8
18	19.2	6.9	11.8	13.0	7.6	9.7	9.7	3.8	6.0	12.1	2.9	6.8
19	18.4	8.4	12.1	15.0	4.5	8.9	9.5	2.5	5.3	13.6	4.2	8.1
20	20.6	6.4	12.8	14.2	3.6	8.5	3.6	.6	2.0	9.0	2.0	5.4
21	21.6	7.5	14.0	15.4	4.4	9.2	4.8	-.3	1.4	11.0	2.5	6.4
22	21.3	7.9	14.1	14.0	5.0	8.6	7.2	.6	3.0	12.1	3.2	7.2
23	19.8	8.1	13.6	12.2	4.4	7.5	7.3	-.3	2.6	10.9	1.7	5.7
24	20.7	8.2	13.7	10.9	2.1	5.7	8.4	-.3	3.3	7.5	1.0	4.0
25	19.6	8.4	13.4	10.9	1.0	5.4	7.9	-.3	3.7	5.6	.3	3.0
26	20.4	7.9	13.5	12.9	2.0	6.8	9.8	1.6	5.1	6.2	.2	2.5
27	19.3	9.2	13.7	14.2	4.0	8.6	9.1	.2	4.1	3.4	-.3	.9
28	19.4	8.8	13.6	13.4	3.7	8.0	10.5	.3	4.7	5.1	-.4	1.4
29	19.5	10.4	13.6	12.3	3.0	7.0	8.4	1.0	4.2	6.4	-.4	1.6
30	16.0	7.6	11.5	13.2	3.8	8.0	10.0	.6	4.6	6.6	-.4	2.1
31	17.3	6.2	11.2	---	---	---	9.6	-.3	4.2	5.6	.1	2.1
MONTH	26.0	6.2	14.7	19.9	1.0	10.4	12.0	-.4	3.7	13.6	-.4	4.0

07227500 CANADIAN RIVER NEAR AMARILLO, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.1	-.3	3.0	11.8	7.3	9.5	7.8	6.0	6.9	16.5	10.0	12.9
2	9.5	-.3	3.3	---	---	---	15.5	5.5	9.8	22.0	11.1	15.6
3	12.4	.0	5.3	11.3	5.0	7.9	12.1	7.3	9.7	28.6	11.7	19.9
4	7.5	2.0	3.8	---	---	---	16.9	6.1	11.2	29.2	15.1	21.3
5	10.9	-.4	4.3	15.4	7.8	11.3	---	---	---	30.7	18.2	23.1
6	9.5	1.0	4.6	16.8	7.8	12.3	---	---	---	31.5	17.3	23.6
7	13.8	.2	6.0	17.7	8.4	13.8	---	---	---	26.1	16.1	21.1
8	14.7	.9	7.1	14.4	5.3	9.6	---	---	---	29.6	13.9	20.3
9	11.4	5.1	7.9	15.3	7.0	10.9	---	---	---	29.3	13.2	20.1
10	12.9	4.5	8.3	11.1	7.4	9.4	---	---	---	27.8	14.9	20.5
11	9.0	4.4	6.2	14.1	4.7	9.1	14.6	10.0	11.3	26.1	13.3	19.3
12	7.4	2.7	4.9	15.3	6.7	10.6	15.9	9.7	11.9	20.6	11.5	15.7
13	8.8	4.0	6.1	14.5	7.4	10.7	23.3	9.4	15.5	26.2	8.7	16.5
14	11.2	2.9	6.8	17.5	7.5	12.3	24.2	12.5	17.7	26.0	10.7	17.4
15	12.7	5.9	9.1	18.1	10.9	13.8	20.4	12.1	15.6	31.5	14.0	21.2
16	10.7	6.0	8.6	11.1	3.9	6.4	22.8	7.6	14.4	25.4	17.0	20.8
17	12.1	5.6	8.6	13.2	4.0	7.8	22.8	11.0	16.8	22.0	14.1	18.1
18	9.8	6.2	8.1	12.2	6.2	8.7	24.5	13.2	18.2	---	---	---
19	9.7	4.1	6.9	15.3	4.1	9.4	21.4	11.4	15.5	---	---	---
20	11.3	4.9	7.9	17.7	6.2	11.0	21.5	8.6	14.4	---	---	---
21	14.5	7.7	11.0	9.3	6.1	7.2	21.3	10.5	15.5	---	---	---
22	14.3	11.2	12.6	7.9	5.6	6.7	22.4	12.4	16.3	---	---	---
23	15.3	7.9	11.4	10.8	7.5	8.6	23.5	11.0	16.7	28.8	15.7	22.7
24	12.2	7.9	10.2	16.7	7.6	11.8	24.6	13.4	18.9	30.6	17.7	23.1
25	10.6	5.7	8.1	18.7	10.6	14.4	25.7	15.0	18.6	22.9	18.0	20.2
26	11.9	2.5	6.8	19.9	12.2	15.8	28.0	16.5	21.2	25.4	15.6	20.7
27	13.1	3.8	8.3	19.7	11.9	15.6	25.3	14.9	19.4	27.2	16.1	21.3
28	10.5	7.0	8.8	18.1	11.7	14.7	26.0	12.6	18.7	28.8	17.4	22.7
29	11.9	6.1	9.1	15.4	10.2	12.6	26.9	14.4	19.8	28.7	18.2	23.0
30	---	---	---	16.7	9.1	12.8	18.9	12.3	16.1	29.9	18.2	23.3
31	---	---	---	12.4	7.1	9.5	---	---	---	28.4	18.0	22.7
MONTH	15.3	-.4	7.3	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.1	19.5	22.1	29.8	22.3	25.7	32.4	20.7	26.0	---	---	---
2	20.8	19.0	19.9	32.8	22.5	27.0	29.6	21.5	25.4	---	---	---
3	26.7	18.8	22.0	31.3	23.0	26.6	28.7	21.7	25.1	---	---	---
4	31.3	20.6	24.7	31.8	22.9	26.6	27.6	21.7	24.5	---	---	---
5	31.9	18.7	24.0	30.9	22.0	26.0	28.7	20.9	24.2	---	---	---
6	30.0	18.5	23.4	29.4	20.6	24.7	30.1	20.8	24.9	---	---	---
7	30.8	19.0	23.9	29.5	20.2	24.5	28.5	22.4	25.1	---	---	---
8	30.1	18.4	23.2	30.0	21.3	25.3	27.4	21.8	24.5	---	---	---
9	29.9	18.0	22.3	30.1	20.9	25.1	28.5	22.3	25.0	---	---	---
10	32.2	19.2	24.8	31.8	20.8	25.8	30.8	20.2	24.5	---	---	---
11	30.1	19.7	23.4	33.7	22.1	26.6	32.2	19.6	24.8	---	---	---
12	30.8	18.5	23.9	29.8	21.5	25.2	28.8	20.6	23.3	---	---	---
13	30.9	19.7	24.4	27.4	23.3	25.3	31.0	21.0	23.0	---	---	---
14	30.9	16.4	22.8	28.7	22.5	25.3	29.2	19.3	22.5	---	---	---
15	29.2	17.5	22.7	29.5	24.1	26.8	30.9	18.8	22.1	---	---	---
16	21.8	13.7	18.0	30.3	23.7	26.7	28.9	18.9	22.3	---	---	---
17	23.0	15.2	18.0	---	---	---	29.5	20.0	22.7	---	---	---
18	23.8	15.7	19.3	---	---	---	---	---	---	---	---	---
19	29.9	18.1	22.9	---	---	---	---	---	---	---	---	---
20	35.0	18.3	25.2	29.8	23.2	26.5	---	---	---	---	---	---
21	30.0	18.8	23.6	28.7	21.5	25.0	---	---	---	---	---	---
22	32.2	21.3	24.8	29.4	21.4	24.6	---	---	---	---	---	---
23	32.0	19.5	24.7	28.8	20.6	24.4	---	---	---	---	---	---
24	34.5	20.2	26.2	30.9	21.6	25.8	---	---	---	---	---	---
25	37.4	21.0	27.3	28.1	22.0	25.0	---	---	---	---	---	---
26	24.4	19.6	21.6	29.8	22.0	25.7	---	---	---	---	---	---
27	28.3	19.7	22.6	28.0	22.4	25.1	---	---	---	---	---	---
28	22.5	17.7	19.6	27.2	21.5	24.3	---	---	---	---	---	---
29	26.1	19.5	21.9	29.5	21.6	25.2	---	---	---	---	---	---
30	30.4	20.5	24.8	31.0	21.4	25.5	---	---	---	---	---	---
31	---	---	---	32.3	21.5	25.8	---	---	---	---	---	---
MONTH	37.4	13.7	22.9	---	---	---	---	---	---	---	---	---

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07227900 LAKE MEREDITH NEAR SANFORD, TX

LOCATION.--Lat 35°42′38", long 101°33′03", Hutchinson County, Hydrologic Unit 11090105, in outlet tower near right end of dam on Canadian River 1.2 mi northwest of Sanford, and 508.5 mi upstream from mouth.

DRAINAGE AREA.--20,220 mi^2, of which 4,172 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1964 to Sep 1987 and Oct 1999 to Sep 2000.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Aug 1965, nonrecording gage read daily at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are fair. The lake is formed by a rolled earthfill dam 6,410 ft long. The dam was completed and storage began in Oct 1964. The service spillway is an uncontrolled concrete drop inlet located near the left end of the dam. The spillway discharges into a 22-ft diameter conduit that is designed to discharge 19,300 ft^3/s at an elevation of 3,004.9 ft. The dam was built by the U.S. Bureau of Reclamation for the Canadian River Municipal Authority for flood control, and municipal and industrial supply for the cities of Amarillo, Borger, Brownfield, Lamesa, Levelland, Lubbock, O'Donnell, Pampa, Plainview, Slaton, and Tahoka. The area-capacity curves are based on sediment resurvey by the Texas Water Development Board. Conservation pool storage is 779,560 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	3,011.0
Design flood	3,004.9
Crest drop inlet	2,965.0
Top of conservation pool	2,935.2
Lowest gated outlet (invert)	2,850.0

COOPERATION.--Records of diversion and capacity table provided by Canadian Municipal Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 546,100 acre-ft, Apr 28, 1973, elevation, 2,914.91 ft; minimum contents after initial filling, 165,500 acre-ft, May 27, 1981, elevation, 2,876.17 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 413,500 acre-ft, Oct 1, 2, elevation, 2,907.74 ft; minimum contents, 336,200 acre-ft, Sep 30, elevation, 2,900.22 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

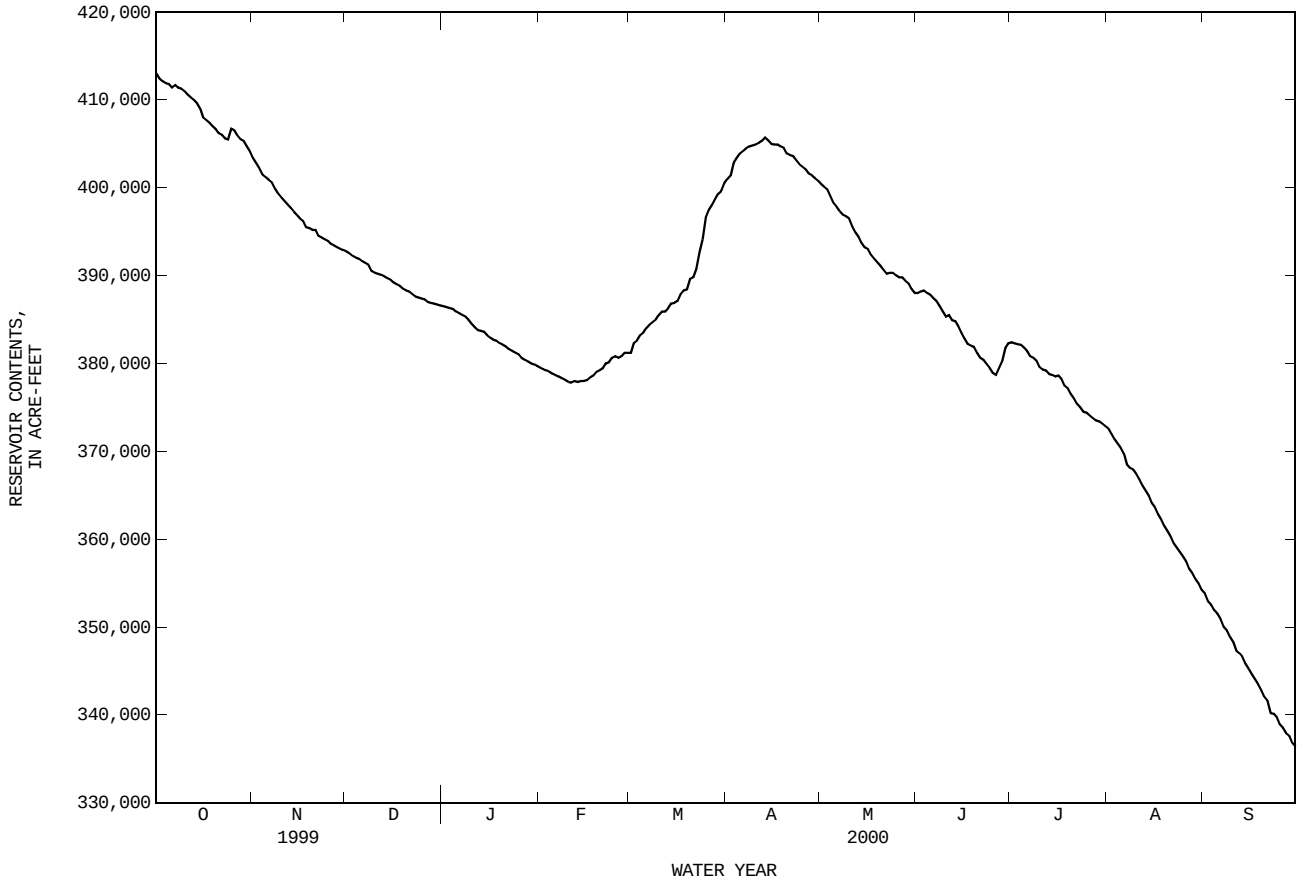
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	413000	e403400	392700	386500	e379500	381200	e401000	e400400	388000	382400	372600	353800
2	412400	e402800	e392500	386400	e379300	382300	401400	e400100	388200	382300	372000	352900
3	e412100	402200	e392200	386300	e379200	382600	402800	399800	388300	382200	371400	352500
4	411900	401500	392000	386200	e379000	383200	403400	e399000	388000	382100	370900	351900
5	411800	401200	391900	385900	e378800	383500	403900	398200	387800	381800	370400	351500
6	411400	400900	391600	385700	e378600	384000	e404200	e397800	387400	381400	369700	350900
7	411700	400600	391400	385500	e378500	384400	404500	e397300	387100	380800	368500	350000
8	411400	399900	e391200	385300	e378300	384700	404700	396900	386500	380600	368100	349600
9	411300	399300	390500	385000	378100	385000	e404800	396700	385900	380300	367900	348900
10	411000	e398900	390300	384500	377900	385500	404900	396500	385300	379600	367400	348300
11	410600	e398500	e390200	384100	377800	385900	405100	395600	385500	379300	366800	347300
12	410300	e398100	390100	383800	378000	385900	405300	394900	384900	379200	366100	347000
13	410000	e397700	e389900	383700	377900	386300	405700	394400	384800	378800	365500	346600
14	409600	e397300	389700	383600	378000	386800	405400	393700	e384200	378700	364900	345800
15	409000	396900	e389500	383200	378000	386900	405000	393200	e383500	378500	364100	345200
16	408000	396500	e389200	382900	378100	387100	404900	393000	e382800	378600	363600	344600
17	e407700	396200	e389000	382700	378400	387900	404900	392300	382200	378200	362800	344100
18	e407400	395500	e388800	382600	378600	388300	404700	391900	382000	377500	362200	343500
19	e407000	395400	e388500	382300	379000	388400	404500	e391500	381900	377200	361500	342800
20	406700	395200	388300	e382100	379200	e389600	403900	e391100	381200	376500	360900	342000
21	406200	395200	388200	e381900	379400	389800	e403700	e390600	380600	376000	360300	341600
22	406000	394500	387900	e381600	380000	390700	403600	390200	380400	375400	359500	340200
23	405600	e394300	387600	e381400	380100	392600	403100	390300	379900	375000	359000	340100
24	405500	e394100	387500	e381200	380600	394100	e402700	390300	379500	374500	358500	339700
25	406700	e393900	387400	e381000	380800	396600	402400	390000	378900	374400	358000	338900
26	406500	e393600	387300	e380600	380600	397400	e402100	389800	378700	374100	357400	338500
27	405900	e393400	387000	380400	380800	398000	401600	389800	379500	373800	356600	337900
28	405500	e393200	386900	e380200	381200	398700	401400	389400	380200	373500	356100	337600
29	405300	393000	386800	e380000	381200	399300	e401100	389100	381700	373400	355400	336800
30	e404700	e392900	386700	e379900	---	399600	e400800	388500	382300	373200	354900	336400
31	e404100	---	386600	e379700	---	400500	---	388000	---	372900	354200	---
MAX	413000	403400	392700	386500	381200	400500	405700	400400	388300	382400	372600	353800
MIN	404100	392900	386600	379700	377800	381200	400800	388000	378700	372900	354200	336400
(+)	2906.97	2905.87	2905.29	2904.60	2904.74	2906.56	2906.64	2905.39	2904.85	2903.95	2902.09	2900.24
(@)	-9400	-11200	-6300	-6900	+1500	+19300	+300	-12800	-5700	-9400	-18700	-17800
(++)	6915	6519	5364	5538	5639	6482	7161	9381	7732	9383	10468	9492

WTR YR 2000 MAX 413500 MIN 336200 (@) -77100

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use diverted by the Canadian River Municipal Water Authority.

07227900 LAKE MEREDITH NEAR SANFORD, TX--Continued



07228000 CANADIAN RIVER NEAR CANADIAN, TX

LOCATION.--Lat 35°56′06", long 100°22′13", Hemphill County, Hydrologic Unit 11090106, on downstream side of bridge on U.S. Highways 60 and 83, 600 ft downstream from Panhandle and Santa Fe Railway Co. bridge, 1.2 mi downstream from Red Deer Creek, 1.6 mi northeast of Canadian, and 433.9 mi upstream from mouth.

DRAINAGE AREA.--22,866 mi^2, of which 4,688 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Jul 1924 to Aug 1925 (gage heights only), Jan 1938 to current year. Prior to Apr 1938, monthly discharges only, published in WSP 1311.
Water-quality records.--Chemical data: Aug 1966 to Sep 1994. Biochemical data: Aug 1966 to Sep 1994. Pesticide data: Oct 1970 to Jun 1982. Specific conductance: Oct 1974 to Sep 1981. Water temperature: Oct 1974 to Sep 1981.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,301.50 ft above sea level. Jul 1, 1924, to Aug 31, 1925, and Apr 21 to Dec 15, 1938, nonrecording gage; Dec 16, 1938, to Sep 30, 1953, water-stage recorder and nonrecording gages; all at site 300 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in Jan 1938, at least 10% of contributing drainage area has been regulated by Lake Meredith (station 07227900, conservation pool storage 779,560 acre-ft) 75 mi upstream. Extreme low flow is maintained by springs that enter river about 600 ft upstream from the gage. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 20.0 ft Oct 2, 1904 from a local resident. Floods of May 2, 1914 and Oct 5, 1923, reached stages of 12 ft from information furnished by the Chief Engineer Office of the Panhandle and Sante Fe Railroad Company.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	29	43	50	59	60	176	83	41	189	9.7	e1.5
2	15	29	44	49	59	74	206	84	78	166	9.2	e1.3
3	16	30	43	50	59	77	194	80	173	110	9.0	e1.1
4	17	30	e48	50	59	75	155	71	296	82	8.6	e1.0
5	18	30	56	50	59	75	134	64	121	65	8.1	e.80
6	18	30	54	50	60	74	117	62	77	48	7.8	e.70
7	17	e31	53	50	62	77	107	59	60	38	7.9	e.60
8	19	e31	53	50	62	85	97	53	52	32	8.0	e.50
9	21	e31	54	50	62	79	90	53	46	27	7.5	e.45
10	21	32	53	51	61	76	83	53	49	24	6.9	e.64
11	21	32	51	51	61	73	82	51	106	22	6.5	e.81
12	23	33	51	51	61	70	83	48	443	24	6.1	e1.0
13	22	34	51	53	61	67	82	48	291	23	5.7	e1.3
14	23	34	52	53	61	66	81	47	212	21	5.1	e1.5
15	23	34	53	54	61	65	79	47	131	19	4.7	e1.6
16	23	34	53	54	62	68	78	47	88	18	4.4	e1.8
17	23	35	53	55	62	72	76	46	74	16	4.1	e2.0
18	24	36	52	57	62	73	75	44	70	18	4.3	e2.1
19	24	37	52	56	63	72	69	43	66	18	4.2	e2.3
20	24	37	52	55	63	e71	65	43	58	16	3.4	e2.5
21	25	38	52	55	63	e80	64	46	53	15	3.1	e2.6
22	25	39	51	55	63	e106	63	43	52	17	2.9	e2.8
23	25	39	51	54	64	264	62	40	48	15	2.7	e3.0
24	26	39	51	54	61	211	62	38	51	14	2.7	e3.1
25	26	38	50	54	77	166	92	43	48	12	2.6	e3.3
26	26	39	50	55	70	149	98	127	103	12	2.4	e3.5
27	27	39	50	56	67	167	92	331	126	11	2.2	3.6
28	27	40	51	59	64	132	80	134	312	12	2.1	3.6
29	27	40	50	59	62	116	73	67	719	12	1.9	3.8
30	28	42	50	59	---	106	77	51	231	11	e1.8	3.7
31	28	---	49	59	---	107	---	42	---	10	e1.6	---
TOTAL	698	1042	1576	1658	1810	3053	2892	2088	4275	1117	157.2	58.50
MEAN	22.5	34.7	50.8	53.5	62.4	98.5	96.4	67.4	142	36.0	5.07	1.95
MAX	28	42	56	59	77	264	206	331	719	189	9.7	3.8
MIN	15	29	43	49	59	60	62	38	41	10	1.6	.45
AC-FT	1380	2070	3130	3290	3590	6060	5740	4140	8480	2220	312	116

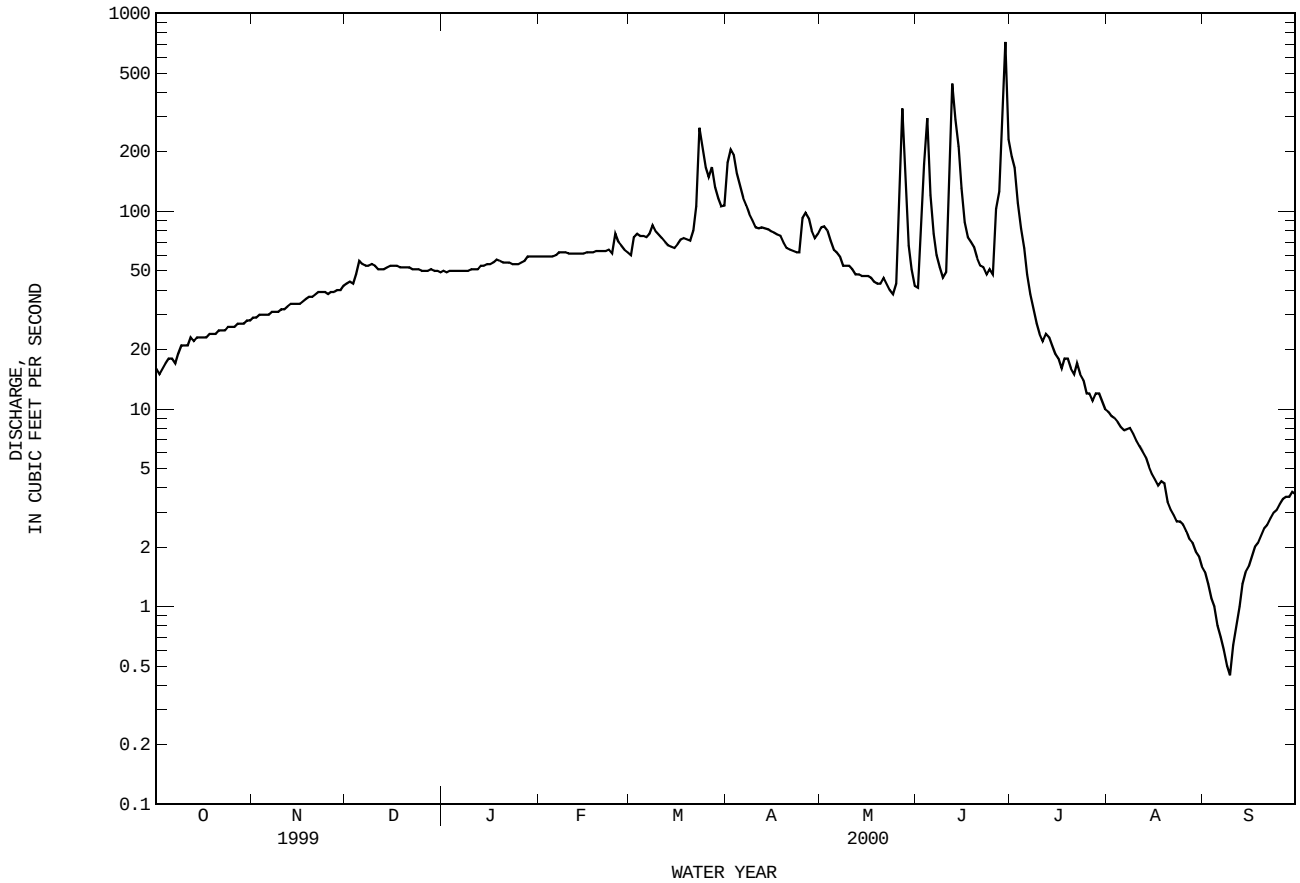
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

MEAN	369	88.2	95.4	117	105	116	210	592	613	455	319	383
MAX	10210	1397	694	541	380	592	5978	8164	8976	6118	3524	7399
(WY)	1942	1942	1960	1943	1960	1961	1942	1941	1941	1941	1941	1941
MIN	.35	1.03	1.50	1.53	28.3	1.76	1.14	.46	.34	.019	.019	.000
(WY)	1976	1946	1940	1957	1959	1946	1964	1962	1966	1970	1980	1983

07228000 CANADIAN RIVER NEAR CANADIAN, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000		
ANNUAL TOTAL	40679.6		20424.70				
ANNUAL MEAN	111		55.8		280		
HIGHEST ANNUAL MEAN					2963		1941
LOWEST ANNUAL MEAN					34.5		1964
HIGHEST DAILY MEAN	1430	May 3	719	Jun 29	60600	Sep 24	1941
LOWEST DAILY MEAN	7.6	Sep 2	.45	Sep 9	.00	Jan 4	1941
ANNUAL SEVEN-DAY MINIMUM	8.0	Sep 6	.64	Sep 5	.00	Apr 8	1941
INSTANTANEOUS PEAK FLOW			1280	Jun 29	38900	Oct 9	1968
INSTANTANEOUS PEAK STAGE			5.15	Jun 29	9.83	Apr 15	1973
INSTANTANEOUS LOW FLOW					.00	Oct 11	1965
ANNUAL RUNOFF (AC-FT)	80690		40510		202900		
10 PERCENT EXCEEDS	258		100		329		
50 PERCENT EXCEEDS	53		50		40		
90 PERCENT EXCEEDS	17		3.4		.70		

e Estimated



07233500 PALO DURO CREEK NEAR SPEARMAN, TX

LOCATION.--Lat 36°12′08", long 101°18′20", Hansford County, Hydrologic Unit 11100104, on right bank at downstream side of bridge on State Highway 15, 6 mi west of Spearman, and 18 mi upstream from Horse Creek.

DRAINAGE AREA.--1,076 mi^2.

PERIOD OF RECORD.--Aug 1945 to Sep 1979, Jun 1999 to current year.

REVISED RECORDS.--WSP 1341: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,959.63 ft above sea level. Aug 1, 1945, to May 8, 1968, water-stage recorder at present site and at datum 2.00 ft higher than current datum. May 8, 1968, to Dec 4, 1969, water-stage recorder at site 5 mi downstream at different datum. Dec 4, 1969 to Sep 30, 1979, water-stage recorder at present site and at datum 2.00 ft higher than current datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Small diversion upstream for irrigation. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1936, 22.5 ft from floodmark, discharge 34,000 ft^3/s. Flood of Jun 4, 1936, reached a stage of 21 ft from floodmark, discharge 26,100 ft^3/s from rating curve extended above 20,000 ft^3/s.

PEAK DISCHARGES FOR WATER YEAR 1999.--Peak discharges greater than base discharge of 500 ft^3/s:

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

No peak greater than base discharge.

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

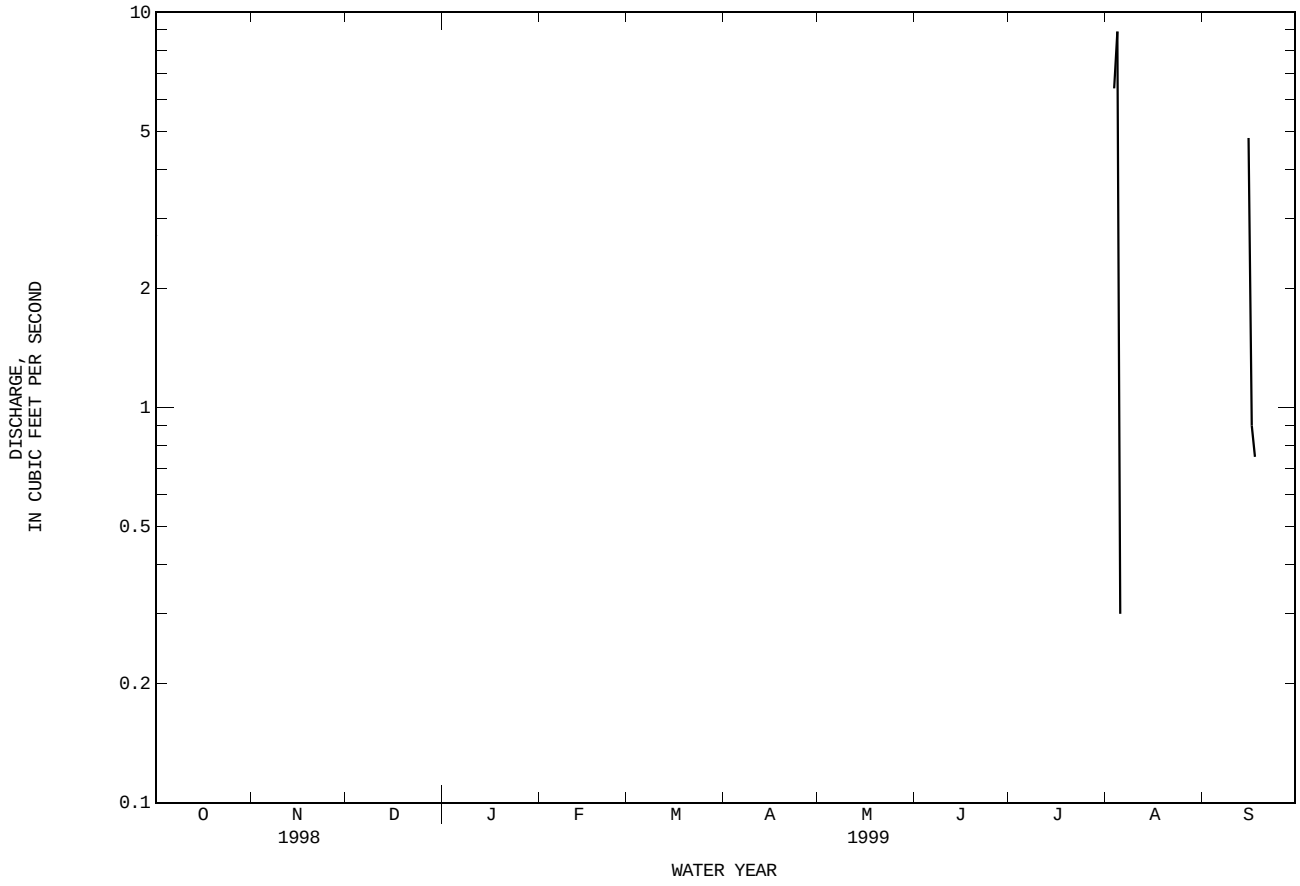
Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 26	1400	898	14.05	Jun 28	0130	560	11.46

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	.00	.00	.00
2	---	---	---	---	---	---	---	---	---	.00	.00	.00
3	---	---	---	---	---	---	---	---	---	.00	6.4	.00
4	---	---	---	---	---	---	---	---	---	.00	8.9	.00
5	---	---	---	---	---	---	---	---	---	.00	e.30	.00
6	---	---	---	---	---	---	---	---	---	.00	.00	.00
7	---	---	---	---	---	---	---	---	---	.00	.00	.00
8	---	---	---	---	---	---	---	---	---	.00	.00	.00
9	---	---	---	---	---	---	---	---	---	.00	.00	.00
10	---	---	---	---	---	---	---	---	---	.00	.00	.00
11	---	---	---	---	---	---	---	---	---	.00	.00	.00
12	---	---	---	---	---	---	---	---	---	.00	.00	.00
13	---	---	---	---	---	---	---	---	---	.00	.00	.00
14	---	---	---	---	---	---	---	---	---	.00	.00	.00
15	---	---	---	---	---	---	---	---	---	.00	.00	4.8
16	---	---	---	---	---	---	---	---	---	.00	.00	.90
17	---	---	---	---	---	---	---	---	---	.00	.00	.75
18	---	---	---	---	---	---	---	---	.00	.00	.00	.00
19	---	---	---	---	---	---	---	---	.00	.00	.00	.00
20	---	---	---	---	---	---	---	---	.00	.00	.00	.00
21	---	---	---	---	---	---	---	---	.00	.00	.00	.00
22	---	---	---	---	---	---	---	---	.00	.00	.00	.00
23	---	---	---	---	---	---	---	---	.00	.00	.00	.00
24	---	---	---	---	---	---	---	---	.00	.00	.00	.00
25	---	---	---	---	---	---	---	---	.00	.00	.00	.00
26	---	---	---	---	---	---	---	---	.00	.00	.00	.00
27	---	---	---	---	---	---	---	---	.00	.00	.00	.00
28	---	---	---	---	---	---	---	---	.00	.00	.00	.00
29	---	---	---	---	---	---	---	---	.00	.00	.00	.00
30	---	---	---	---	---	---	---	---	.00	.00	.00	.00
31	---	---	---	---	---	---	---	---	---	.00	.00	---
TOTAL	---	---	---	---	---	---	---	---	---	0.00	15.60	6.45
MEAN	---	---	---	---	---	---	---	---	---	.000	.50	.22
MAX	---	---	---	---	---	---	---	---	---	.00	8.9	4.8
MIN	---	---	---	---	---	---	---	---	---	.00	.00	.00
AC-FT	---	---	---	---	---	---	---	---	---	.00	31	13

e Estimated

07233500 PALO DURO CREEK NEAR SPEARMAN, TX--Continued



07233500 PALO DURO CREEK NEAR SPEARMAN, TX--Continued

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	50	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	e30	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	e15	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	e7.5	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	e2.0	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	e.60	.00	.00
7	.00	.00	.00	.00	.00	.02	.00	.00	.00	e.19	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	3.6	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.73	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	e.20	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	e.10	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	e.02	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	9.4	.00	.13	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	13	.00	.08	113	.00	.00	.00
26	.00	.00	.00	.00	.00	.73	.00	.00	547	.00	.00	.00
27	.00	.00	.00	.00	.00	e.30	.00	.00	187	.00	.00	.00
28	.00	.00	.00	.00	.00	e.10	.00	.00	437	.00	.00	.00
29	.00	.00	.00	.00	.00	e.02	.00	.00	290	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	106	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.00	23.57	0.00	0.21	1685.85	105.29	0.00	0.00
MEAN	.000	.000	.000	.000	.000	.76	.000	.007	56.2	3.40	.000	.000
MAX	.00	.00	.00	.00	.00	13	.00	.13	547	50	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	47	.00	.4	3340	209	.00	.00

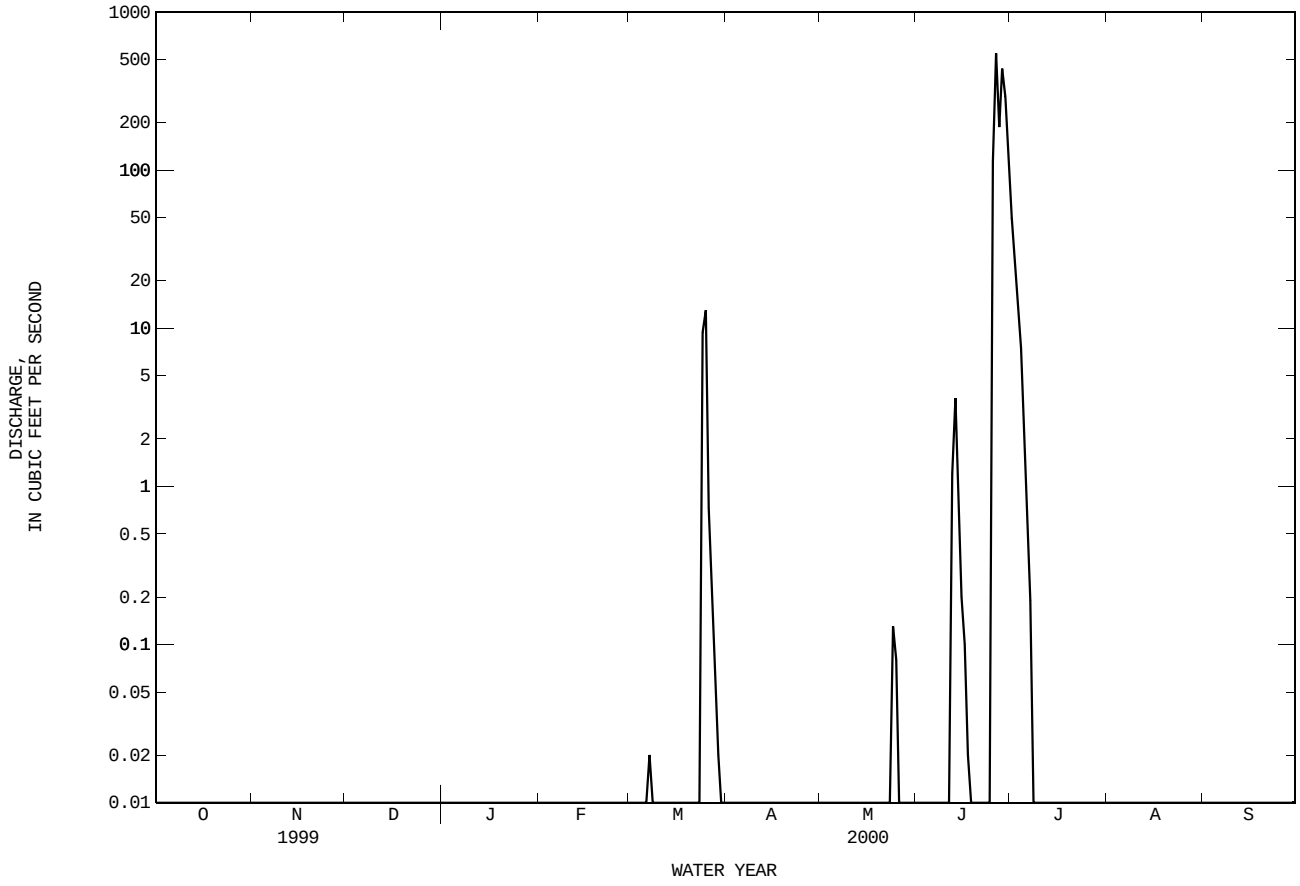
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000h, BY WATER YEAR (WY)

MEAN	38.9	7.64	1.17	.72	.71	1.90	8.86	32.7	53.8	32.6	19.0	18.0
MAX	835	213	7.99	3.00	3.47	36.6	106	349	879	188	91.8	188
(WY)	1947	1972	1960	1947	1964	1973	1955	1951	1965	1953	1950	1960
MIN	.000	.000	.000	.000	.000	.000	.000	.007	.28	.000	.000	.000
(WY)	1953	1956	1956	1965	1965	1965	1965	2000	1973	1974	1964	1947

SUMMARY STATISTICS	FOR 2000 WATER YEAR		WATER YEARS 1945 - 2000h	
ANNUAL TOTAL	1814.92			
ANNUAL MEAN	4.96		18.2	
HIGHEST ANNUAL MEAN			89.9	1965
LOWEST ANNUAL MEAN			1.50	1964
HIGHEST DAILY MEAN	547	Jun 26	11400	Oct 7 1946
LOWEST DAILY MEAN	.00	Oct 1	.00	Aug 1 1945
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 1	.00	Aug 1 1945
INSTANTANEOUS PEAK FLOW	898	Jun 26	21200	Oct 7 1946
INSTANTANEOUS PEAK STAGE	14.05	Jun 26	19.87	Oct 7 1946
ANNUAL RUNOFF (AC-FT)	3600		13210	
10 PERCENT EXCEEDS	.00		8.1	
50 PERCENT EXCEEDS	.00		.53	
90 PERCENT EXCEEDS	.00		.00	

e Estimated
h See PERIOD OF RECORD paragraph.

07233500 PALO DURO CREEK NEAR SPEARMAN, TX--Continued



07233550 PALO DURO RESERVOIR NEAR SPEARMAN, TX

LOCATION.--Lat 36°21′42", long 101°09′48", Hansford County, Hydrologic Unit 11100104, on intake tower south of dam on Palo Duro Creek, 11 mi north of Spearman.

DRAINAGE AREA.--1,415 mi^2

PERIOD OF RECORD.--Jun 1999 to current year.

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

REMARKS.--Records good except those for estimated daily contents, which are fair. The lake is formed by a rolled earthfill dam 3,800 ft long. The dam was completed Feb 11, 1991, and storage began May 22, 1991. The dam and lake are owned by the Palo Duro River Authority. The capacity curve was developed by Freese and Nichols, Inc.. Conservation pool storage is 60,900 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	2,943.0
Design flood (2-foot freeboard)	2,919.0
Crest of spillway	2,915.0
Lowest gated outlet (top of conservation pool)	2,892.0

COOPERATION.--Capacity curve provided by the Palo Duro River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 32,910 acre-ft, Jul 1, 1999, elevation, 2,877.89 ft; minimum contents, 13,320 acre-ft, Jun 21, 22, 2000.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 24,010 acre-ft, Oct 1, elevation, 2,871.74 ft; minimum contents, 13,320 acre-ft, Jun 21, 22, elevation, 2,861.94 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

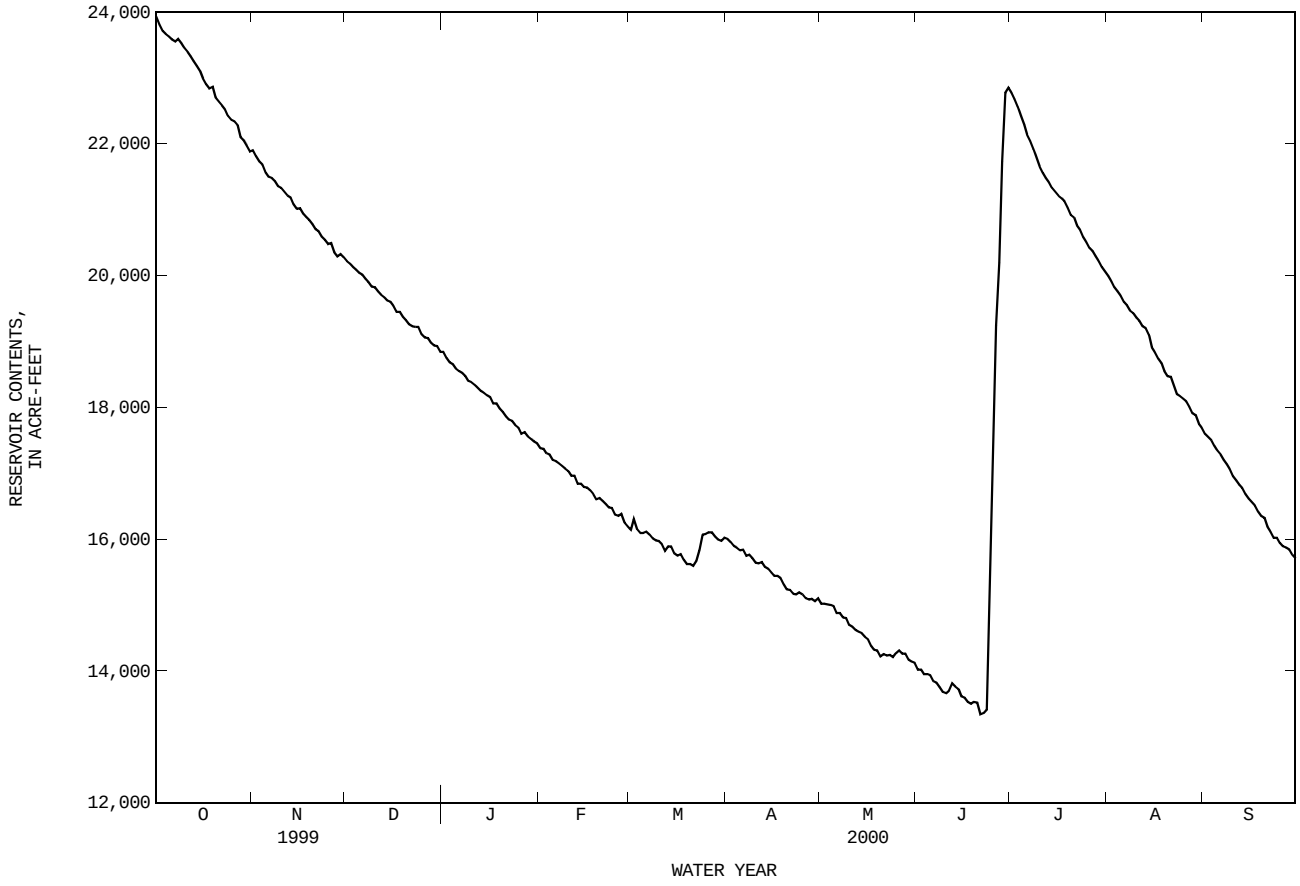
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23930	21900	e20220	18840	17380	16140	16000	15020	14020	22770	19990	17600
2	23810	21810	e20180	18750	17370	16300	15950	15020	14020	22680	19910	17550
3	23710	21730	20130	18680	17300	16150	15900	15010	13950	22560	19820	17500
4	23670	21680	20090	18650	17280	16090	15870	15000	13950	22420	19760	17420
5	23630	21560	20040	18590	17200	16090	15830	14980	13930	22290	19690	17340
6	23580	21500	20010	18550	17180	16110	15840	14880	13840	22140	19600	17280
7	23550	21480	19950	18520	e17150	16070	15750	14880	13820	22040	19550	17200
8	23590	21430	19900	18470	e17110	16010	15760	14810	13750	21920	19470	17130
9	23530	21350	19830	18400	e17070	15980	15710	14800	13680	21780	19430	17060
10	23450	21330	19820	18380	17030	15970	15640	14700	13660	21660	19360	16950
11	23390	21270	19760	e18340	16960	15920	15630	14670	13700	21560	19310	16890
12	23330	21210	19710	e18290	16960	15820	15650	14620	13810	21480	19230	16820
13	23250	21180	19670	18250	16840	15890	15580	14590	13760	21410	19200	16770
14	23180	21080	19620	e18220	16840	15890	15550	14570	13720	21330	19100	16680
15	23100	21010	19600	e18180	16790	15780	15490	14520	13610	21270	18910	16610
16	22990	21020	19540	18150	16780	15750	15440	14480	13590	21210	18830	16560
17	22900	20940	19450	18060	16740	15770	15440	14380	13530	21170	18740	16510
18	22840	20890	19450	18060	16680	15690	15410	14320	13500	21130	18670	16420
19	22860	20840	19370	17980	16600	15620	15310	14310	13530	21030	18550	16350
20	22700	20780	19320	17930	16620	15620	15240	14220	13520	20920	18470	16320
21	22640	20700	19260	17860	16580	15590	15230	14250	13340	20880	18460	16190
22	22580	20670	19230	17810	16530	15660	15170	14230	13360	20760	18320	16110
23	22520	20590	19220	17790	16480	15830	15160	14240	13410	20690	18200	16020
24	22420	20540	19220	17730	16470	16070	15190	14210	14800	20580	18170	16020
25	22360	20480	19110	17690	16370	16080	15160	14270	17650	20500	18130	15940
26	22340	20490	19060	17600	16350	16100	15100	14310	19240	20420	18090	15890
27	22280	20350	19050	17620	16380	16100	15080	14260	20190	20370	18010	15870
28	22100	20290	18980	17560	16250	16040	15090	14260	21730	20290	17910	15840
29	22050	20320	18940	17520	16190	15990	15060	14170	22770	20210	17880	15760
30	21970	e20280	18930	17480	---	15970	15100	14140	22850	20130	17750	15710
31	21880	---	18840	17450	---	16020	---	14120	---	20060	17690	---
MEAN	22970	21020	19530	18110	16810	15940	15480	14520	15140	21280	18850	16610
MAX	23930	21900	20220	18840	17380	16300	16000	15020	22850	22770	19990	17600
MIN	21880	20280	18840	17450	16190	15590	15060	14120	13340	20060	17690	15710
(+)	2870.14	2868.73	2867.44	2866.19	2865.06	2864.89	2863.88	2862.81	2870.85	2868.36	2866.41	2864.55
(@)	-2130	-1600	-1440	-1390	-1260	-170	-920	-980	+8730	-2790	-2370	-1980

WTR YR 2000 MAX 24010 MIN 13340 (@) -8300

e Estimated

(+) Gage height, in feet, at end of month.
(@) Change in contents, in acre-feet.

07233550 PALO DURO RESERVOIR NEAR SPEARMAN, TX--Continued



07235000 WOLF CREEK AT LIPSCOMB, TX

LOCATION.--Lat 36°14'19", long 100°16'31", Lipscomb County, Hydrologic Unit 11100202, on right bank at downstream side of State Highway 305, 0.3 mi north of Lipscomb, 0.6 mi downstream from Sand Creek, 2 mi upstream from Plum Creek, and 61.2 mi upstream from mouth.

DRAINAGE AREA.--697 mi^2, of which 222 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1937 to Sep 1942, Oct 1961 to current year. Prior to 1942, monthly discharges only, published in WSP 1311.

Water-quality records.--Chemical data: May 1980. Biochemical data: May 1980.

REVISED RECORDS.--WSP 1311: 1938-39, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,371.29 ft above sea level. Prior to Feb 25, 1938, nonrecording gage, Feb 25, 1938, to Sep 30, 1942, water-stage recorder at present site at datum 5.77 ft higher. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. There are small diversions upstream from station for irrigation and recreation. Since installation of the gage, at least 10% of contributing drainage area has been regulated by Lake Fryer (conservation pool storage 753 acre-ft) 30 miles upstream. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1938-42), 39.7 ft^3s, 28,760 acre-feet/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1938-42).--Maximum discharge, 20,000 ft^3/s Oct 21, 1941 (Gage-height, 11.57 ft, present datum), from rating curve extended above 14,000 ft^3/s on basis of velocity-area studies; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 15.5 ft Jun 23, 1957, present site and datum, from floodmarks. A flood in May 1955 reached a stage of 12.1 ft, present site and datum, from information by State Department of Highways and Public Transportation.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	1.8	2.8	3.1	3.7	4.0	10	5.8	4.2	7.3	2.1	.92
2	1.4	1.9	2.9	3.1	3.7	4.6	9.6	6.0	5.6	6.9	2.0	.94
3	1.5	2.0	2.9	3.2	3.6	5.1	8.7	5.9	11	6.7	1.9	.93
4	1.5	2.0	3.0	3.1	3.5	4.9	8.4	5.7	8.7	6.2	1.8	.93
5	1.5	2.0	3.5	3.1	3.5	4.5	8.0	5.7	6.9	5.7	1.8	.96
6	1.5	1.9	3.5	3.2	3.5	4.5	7.6	5.7	6.3	5.4	1.8	.96
7	1.5	2.1	3.4	3.3	3.6	4.5	7.5	5.5	6.0	5.2	1.7	.98
8	1.5	2.1	3.4	3.3	3.7	4.9	6.9	5.2	5.6	4.9	1.6	.99
9	1.6	2.1	3.1	3.3	3.5	4.8	6.9	5.3	5.4	4.4	1.6	.99
10	1.6	2.2	3.1	3.2	3.5	4.7	6.8	5.0	5.5	e4.2	1.6	1.0
11	1.6	2.2	3.0	3.2	3.6	4.7	6.6	4.9	6.7	e4.0	1.5	.97
12	1.6	2.2	3.1	3.2	4.1	4.6	6.8	4.6	7.4	e3.9	1.5	1.0
13	1.6	2.2	3.1	3.3	4.0	4.4	6.8	4.5	7.9	e3.5	1.4	1.0
14	1.6	2.2	3.1	3.3	4.0	4.4	6.8	4.4	8.7	3.3	1.3	.99
15	1.6	2.3	3.1	3.3	4.0	4.4	6.6	4.4	8.3	3.1	1.3	1.0
16	1.5	2.5	3.0	3.3	3.9	4.5	6.6	4.4	7.7	2.9	1.2	.99
17	1.6	2.7	3.0	3.3	3.9	4.7	6.5	4.4	7.6	2.9	1.3	1.0
18	1.7	2.6	3.0	3.3	3.8	4.8	6.4	4.2	7.6	2.9	1.2	.97
19	1.6	2.4	3.0	3.3	3.9	4.9	6.1	4.1	7.6	2.7	1.2	.99
20	1.7	2.6	3.0	3.3	3.8	4.8	6.0	4.1	7.5	2.7	1.1	1.0
21	1.7	2.6	3.0	3.4	3.9	4.7	6.1	4.2	7.2	2.6	1.1	1.0
22	1.6	2.6	3.0	3.4	4.0	5.4	6.0	4.1	7.2	2.6	1.0	1.0
23	1.7	2.6	3.0	3.4	4.2	15	6.1	4.0	7.1	2.6	.99	1.0
24	1.7	2.7	3.0	3.4	4.6	24	6.0	3.9	7.5	2.6	.99	1.0
25	1.7	2.7	3.1	3.5	9.1	16	6.4	4.0	8.5	2.5	1.0	.98
26	1.7	2.8	3.0	3.6	5.4	12	6.3	6.2	8.9	2.3	1.0	.99
27	1.7	2.8	3.0	3.6	4.4	9.8	6.3	6.2	8.9	2.2	1.0	1.0
28	1.8	3.0	3.0	3.7	4.1	8.6	6.1	5.7	9.6	2.3	.94	1.0
29	1.8	2.8	3.0	3.7	4.0	8.1	5.7	5.1	9.0	2.2	.92	1.0
30	1.8	2.9	3.0	3.6	---	7.4	5.7	4.7	7.8	2.3	.92	1.0
31	1.8	---	3.1	3.7	---	7.6	---	4.4	---	2.2	.91	---
TOTAL	50.2	71.5	95.2	103.7	118.5	211.3	206.3	152.3	223.9	115.2	41.67	29.48
MEAN	1.62	2.38	3.07	3.35	4.09	6.82	6.88	4.91	7.46	3.72	1.34	.98
MAX	1.8	3.0	3.5	3.7	9.1	24	10	6.2	11	7.3	2.1	1.0
MIN	1.4	1.8	2.8	3.1	3.5	4.0	5.7	3.9	4.2	2.2	.91	.92
AC-FT	100	142	189	206	235	419	409	302	444	228	83	58
CFSM	.00	.01	.01	.01	.01	.01	.01	.01	.02	.01	.00	.00
IN.	.00	.01	.01	.01	.01	.02	.02	.01	.02	.01	.00	.00

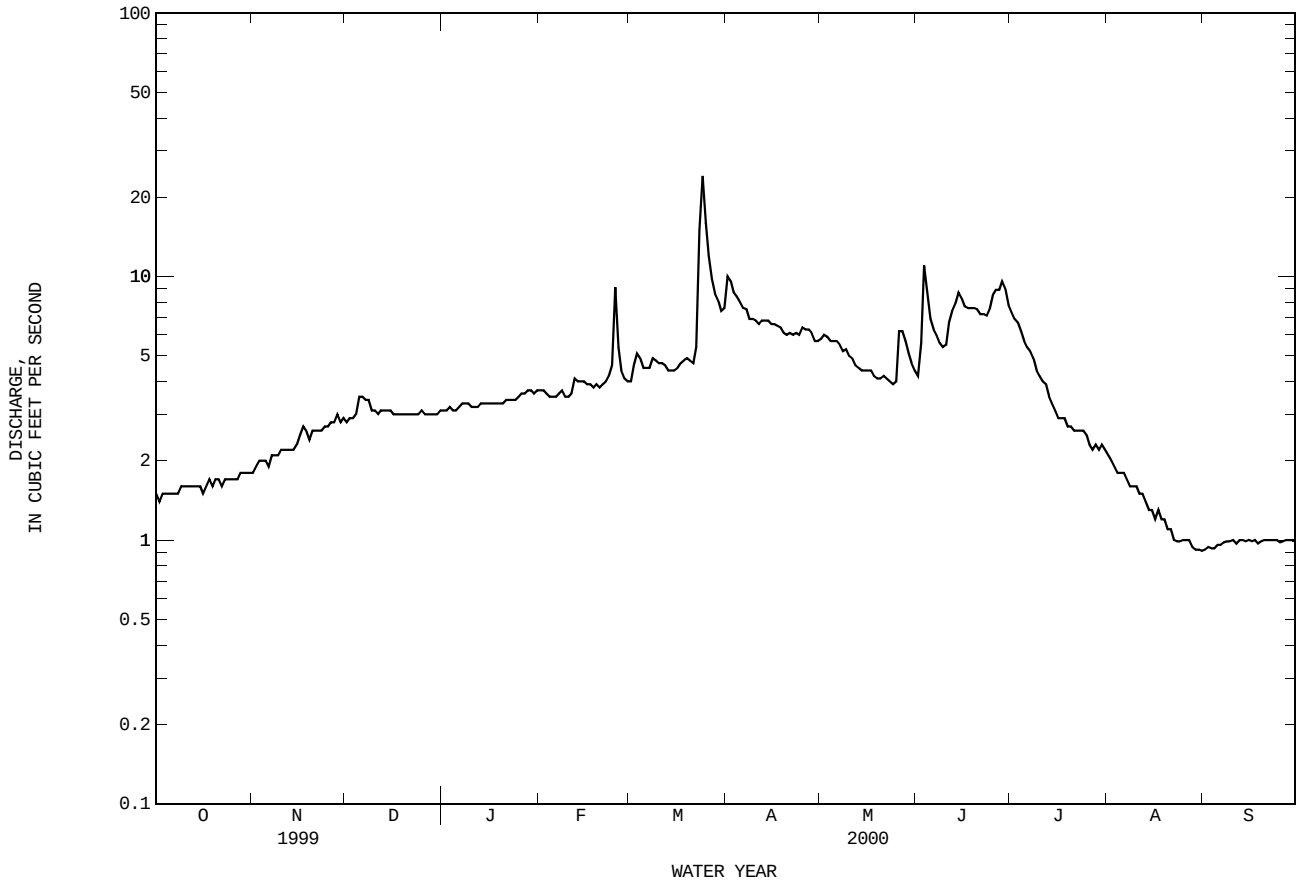
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

MEAN	6.73	5.77	3.74	3.94	4.78	7.37	11.4	18.9	17.3	8.10	8.03	13.8
MAX	167	112	14.6	11.8	11.0	53.0	109	124	206	82.7	77.6	323
(WY)	1969	1972	1997	1969	1997	1974	1999	1979	1965	1967	1965	1996
MIN	.10	.50	.60	.55	.60	1.10	.94	.65	.33	.30	.000	.21
(WY)	1965	1995	1995	1986	1986	1986	1986	1986	1996	1974	1964	1984

07235000 WOLF CREEK AT LIPSCOMB, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	6964.1		1419.25			
ANNUAL MEAN	19.1		3.88		9.16	
HIGHEST ANNUAL MEAN					30.5	1965
LOWEST ANNUAL MEAN					1.44	1986
HIGHEST DAILY MEAN	931	Apr 15	24	Mar 24	5800	Sep 19 1996
LOWEST DAILY MEAN	1.4	Oct 2	.91	Aug 31	.00	May 24 1964
ANNUAL SEVEN-DAY MINIMUM	1.5	Sep 30	.92	Aug 29	.00	Jul 22 1964
INSTANTANEOUS PEAK FLOW			28	Mar 24	10300	Sep 19 1996
INSTANTANEOUS PEAK STAGE			2.32	Mar 24	12.44	Sep 19 1996
INSTANTANEOUS LOW FLOW					.00	Jul 22 1964
ANNUAL RUNOFF (AC-FT)	13810		2820		6640	
ANNUAL RUNOFF (CFSM)	.040		.008		.019	
ANNUAL RUNOFF (INCHES)	.55		.11		.26	
10 PERCENT EXCEEDS	24		7.2		11	
50 PERCENT EXCEEDS	5.3		3.3		2.6	
90 PERCENT EXCEEDS	1.7		1.0		.52	

e Estimated



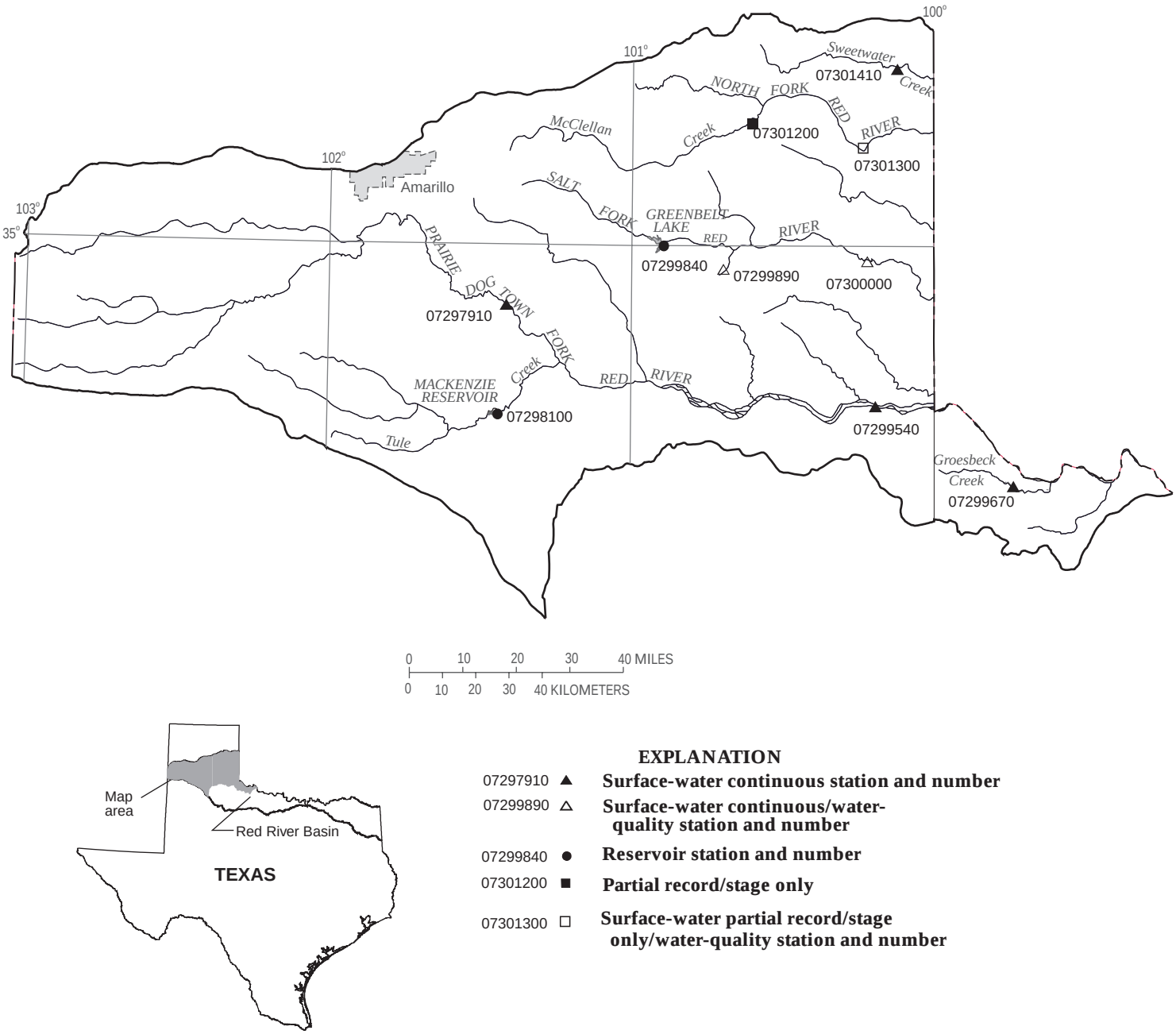


Figure 4.-- Map showing location of gaging stations in the first section of the Red River Basin

07297910 Prairie Dog Town Fork Red River near Wayside, TX 50
07298100 MacKenzie Reservoir near Silverton, TX 52
07299540 Prairie Dog Town Fork Red River near Childress, TX 54
07299670 Groesbeck Creek at State Highway 6 near Quanah, TX 56
07299840 Greenbelt Lake near Clarendon, TX 58
07299890 Lelia Lake Creek below Bell Creek near Hedley, TX 60
07300000 Salt Fork Red River near Wellington, TX 66
07300500* Salt Fork Red River at Mangum, OK 70
07301200 McClellan Creek near McLean, TX 72
07301300 North Fork Red River near Shamrock, TX 74
07301410 Sweetwater Creek near Kelton, TX 76

* Station is not located within the illustrated map area.

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX

LOCATION.--Lat 34°50′15", long 101°24′49", Armstrong County, Hydrologic Unit 11120103, on left bank at downstream side of bridge on Farm Road 284, 13 mi northeast of Wayside, 26 mi south of Claude, and at mile 1,145.

DRAINAGE AREA.--4,211 mi^2, of which 3,281 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Specific conductance: Oct 1969 to Sep 1981. Water temperature: Oct 1969 to Sep 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,463.74 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. There are several small diversions upstream from station. Wastewater effluent is released into river above station by the city of Amarillo. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

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

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	5.4	10	13	16	20	31	4.4	523	30	.44	.00
2	7.1	5.2	11	12	17	24	25	5.5	1320	22	.36	.00
3	7.6	5.1	13	13	16	15	17	6.4	304	18	.31	.00
4	7.8	5.5	18	15	18	17	15	5.8	85	16	.25	.00
5	8.6	5.6	18	e12	17	15	12	5.3	49	13	.18	.00
6	8.3	5.9	21	e12	17	12	11	4.5	42	11	.20	.00
7	8.8	6.1	17	e11	15	12	11	4.0	33	8.4	.21	.00
8	14	7.4	16	e10	15	14	11	3.7	29	5.9	.18	.00
9	10	8.4	17	e11	15	16	10	3.6	57	4.0	.17	.00
10	10	8.8	19	e10	15	18	9.6	3.5	27	3.5	.14	.00
11	10	8.4	18	e11	15	17	17	3.2	69	3.3	.14	.00
12	11	7.5	16	e10	14	17	24	3.3	17	6.7	.13	.00
13	10	6.6	16	10	13	17	13	3.6	13	3.5	.11	.00
14	11	6.1	15	11	12	16	11	3.4	11	2.8	.10	.00
15	9.3	5.7	19	9.3	11	14	9.0	3.5	10	2.3	.10	.00
16	8.2	5.1	16	9.0	10	15	8.5	3.2	9.0	1.8	.10	.00
17	11	4.8	14	9.7	9.9	15	9.0	2.8	12	1.7	.10	.00
18	11	4.5	13	10	9.9	18	7.9	3.0	13	1.4	.10	.00
19	9.4	4.6	13	11	9.2	16	6.6	3.6	8.8	1.2	.10	.00
20	9.4	4.7	13	11	9.5	20	5.9	4.1	8.8	1.2	.10	.00
21	8.5	5.1	14	11	9.9	18	6.5	103	14	.98	e.06	.00
22	7.4	5.0	14	8.9	8.6	61	6.6	23	11	.90	e.02	.00
23	6.2	5.4	14	9.0	8.2	280	5.8	13	9.5	1.3	.00	.00
24	5.7	7.0	14	10	15	61	5.7	10	8.7	.84	.00	.00
25	5.4	8.4	14	11	19	28	5.2	11	7.9	.91	.00	.00
26	5.5	8.2	14	13	16	20	4.9	753	7.8	.72	.00	.00
27	5.9	8.4	13	14	18	16	4.6	45	96	1.5	.00	.00
28	6.6	9.1	13	13	17	15	4.6	24	665	1.7	.00	.00
29	6.6	10	14	16	16	17	4.4	20	165	1.3	.00	.00
30	5.9	10	14	17	---	18	4.2	16	58	.63	.00	.00
31	5.3	---	13	17	---	20	---	14	---	.55	.00	---
TOTAL	259.0	198.0	464	360.9	402.2	882	317.0	1112.4	3683.5	169.03	3.60	0.00
MEAN	8.35	6.60	15.0	11.6	13.9	28.5	10.6	35.9	123	5.45	.12	.000
MAX	14	10	21	17	19	280	31	753	1320	30	.44	.00
MIN	5.3	4.5	10	8.9	8.2	12	4.2	2.8	7.8	.55	.00	.00
AC-FT	514	393	920	716	798	1750	629	2210	7310	335	7.1	.00

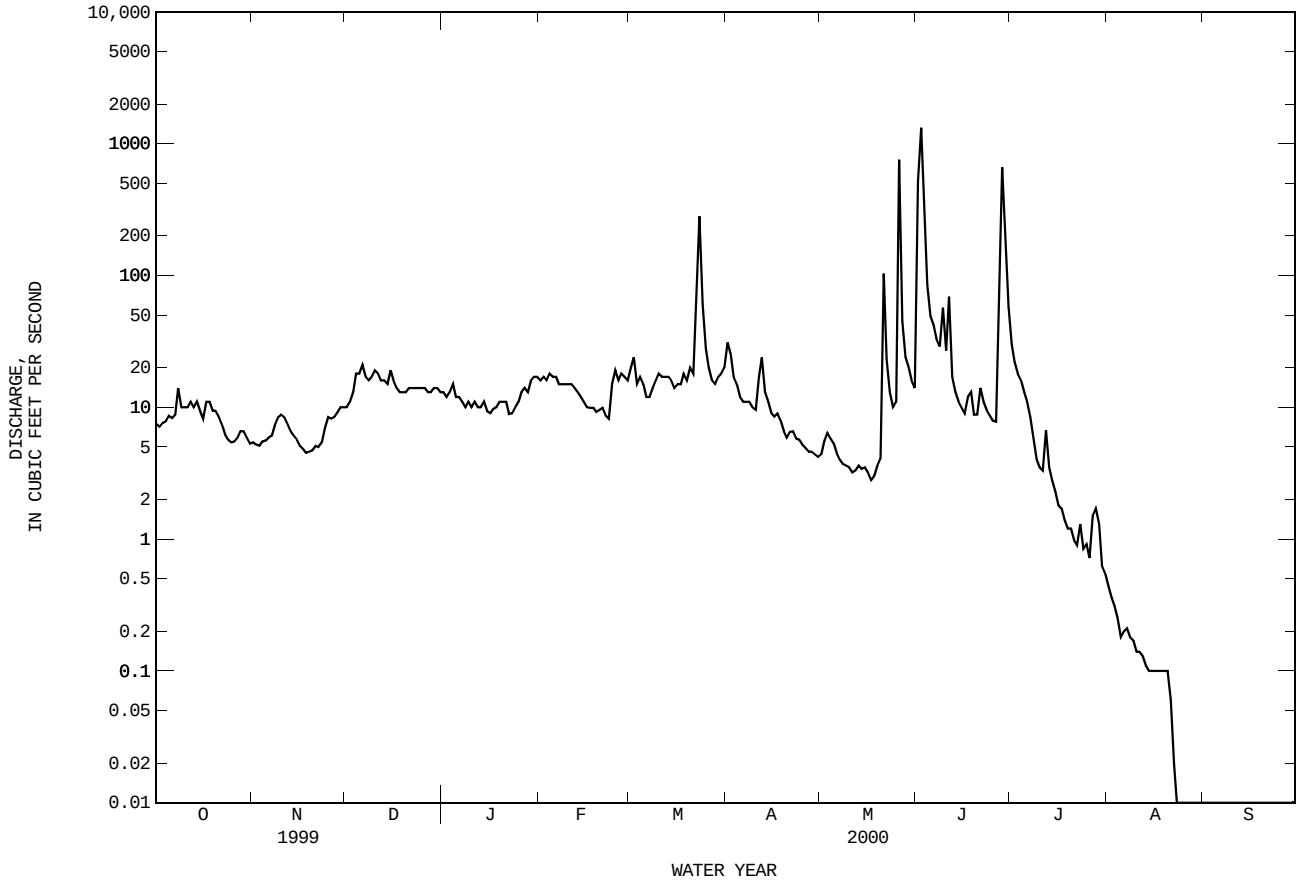
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2000, BY WATER YEAR (WY)

MEAN	27.4	11.9	5.74	5.40	5.14	8.66	25.9	63.8	55.9	31.1	84.7	24.7
MAX	175	147	20.3	24.7	19.0	48.9	448	603	304	207	1410	110
(WY)	1999	1999	1988	1988	1999	1998	1997	1999	1984	1996	1968	1969
MIN	.000	.066	.099	.30	.16	.34	.17	.13	.47	.000	.12	.000
(WY)	1976	1971	1971	1971	1976	1971	1978	1984	1998	1974	2000	1975

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1968 - 2000	
ANNUAL TOTAL	29633.4		7851.63			
ANNUAL MEAN	81.2		21.5		29.4	
HIGHEST ANNUAL MEAN					137	1968
LOWEST ANNUAL MEAN					1.90	1983
HIGHEST DAILY MEAN	8120	May 2	1320	Jun 2	22700	Aug 29 1968
LOWEST DAILY MEAN	2.5	Sep 7	.00	Aug 23	.00	Jul 30 1968
ANNUAL SEVEN-DAY MINIMUM	2.5	Sep 7	.00	Aug 23	.00	Jul 30 1968
INSTANTANEOUS PEAK FLOW			3590	May 26	58000	Aug 28 1968
INSTANTANEOUS PEAK STAGE			8.83	May 26	13.00	Aug 28 1968
ANNUAL RUNOFF (AC-FT)	58780		15570		21280	
10 PERCENT EXCEEDS	66		19		24	
50 PERCENT EXCEEDS	12		9.4		2.3	
90 PERCENT EXCEEDS	5.0		.00		.08	

e Estimated

07297910 PRAIRIE DOG TOWN FORK RED RIVER NEAR WAYSIDE, TX--Continued



07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX

LOCATION.--Lat 34°32′43", long 101°26′16", Briscoe County, Hydrologic Unit 11120104, at upstream side of dam on Tule Creek, 0.9 mi upstream from Rock Creek, 9.5 mi northwest of Silverton, and 22.7 mi upstream from mouth.

DRAINAGE AREA.--1,053 mi^2, of which 904 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1974 to Sep 1986, Apr 1999 to current year.

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

REMARKS.--Records fair. The reservoir is formed by a rolled earthfill dam 2,100 ft long. The dam was completed in Aug 1974, and storage began in Jun 1974. The uncontrolled spillway is an open-cut channel just beyond the right end of the dam. The service spillway is an uncontrolled ogee-type weir across a concrete chute at the right end of the dam. A 30-in gated outlet concrete pipe discharges into a valve vault at the downstream toe of the dam and then into the creek bed downstream. Water is used for municipal, industrial, and recreational purposes by the cities of Floydada, Silverton, and Tulia. Conservation pool storage is 46,250 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	3,127
Crest of spillway	3,111
Crest of spillway with ogee weir (top of conservation pool)	3,100
Lowest gated outlet (invert)	2,961

COOPERATION.--Area-capacity curves developed by Freese and Nichols, Inc.. Record of diversions provided by the MacKenzie Municipal Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 23,950 acre-ft, Oct 15, 1986, elevation, 3,065.08 ft; minimum since first appreciable storage, 598 acre-ft, Oct 1, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 10,470 acre-ft, Oct 1, elevation, 3,033.75 ft; minimum contents, 8,230 acre-ft, Sep 30, elevation, 3,026.59 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

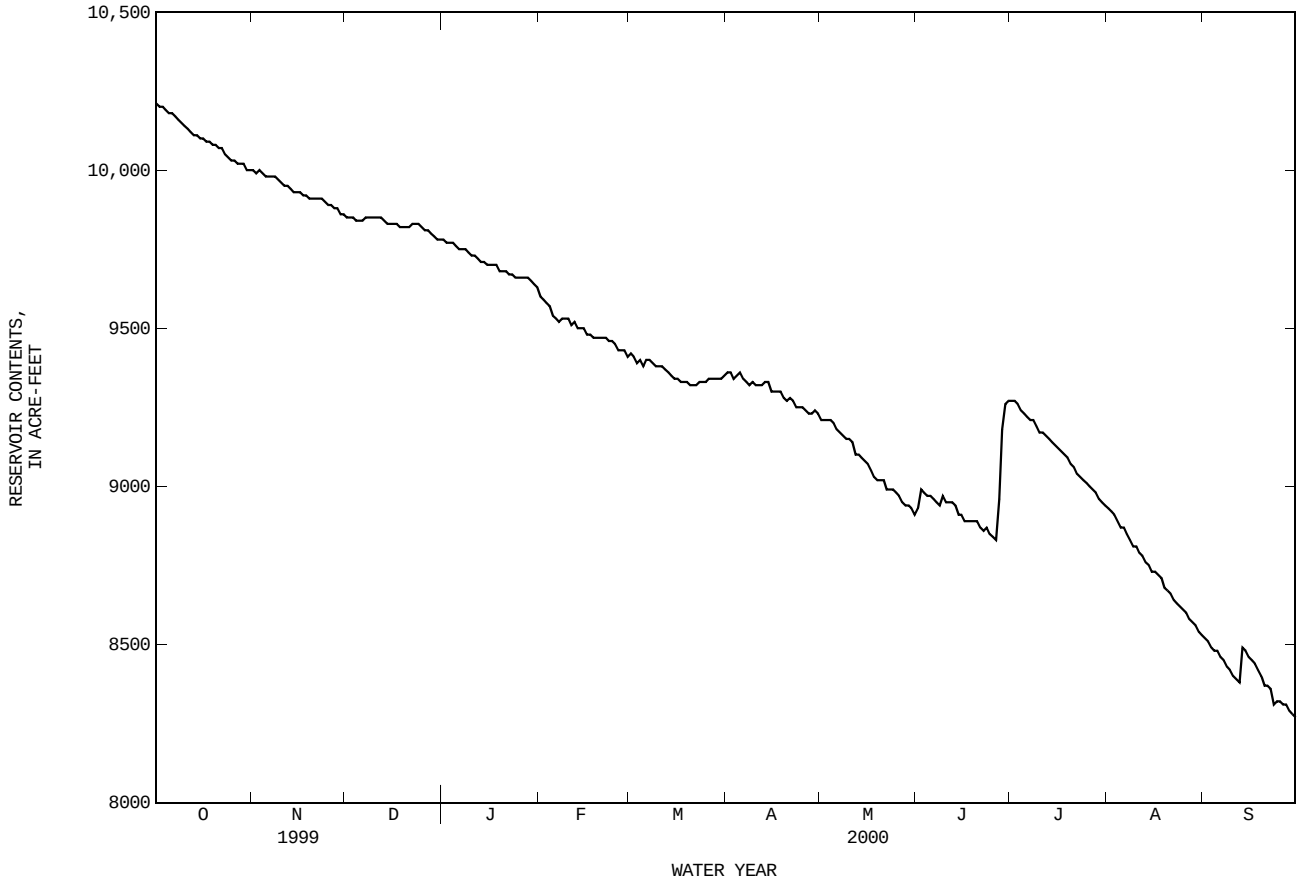
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e10210	10000	9850	9780	9600	9420	9360	9210	8930	9270	8930	8520
2	e10200	9990	9850	9770	9590	9410	9360	9210	8990	9270	8920	8510
3	e10200	10000	9850	9770	9580	9390	9340	9210	8980	9260	8910	8490
4	e10190	9990	9840	9770	9570	9400	9350	9210	8970	9240	8890	8480
5	e10180	9980	9840	9760	9540	9380	9360	9200	8970	9230	8870	8480
6	e10180	9980	9840	9750	9530	9400	9340	9180	8960	9220	8870	8460
7	e10170	9980	9850	9750	9520	9400	9330	9170	8950	9210	8850	8450
8	10160	9980	9850	9750	9530	e9390	9320	9160	8940	9210	8830	8430
9	10150	9970	9850	9740	9530	e9380	9330	9150	8970	9190	8810	8420
10	10140	9960	9850	9730	9530	e9380	9320	9150	8950	9170	8810	8400
11	10130	9950	9850	9730	9510	e9380	9320	9140	8950	9170	8790	8390
12	10120	9950	9850	9720	9520	e9370	9320	9100	8950	9160	8780	8380
13	10110	9940	9840	9710	9500	e9360	9330	9100	8940	9150	8760	8490
14	e10110	9930	9830	9710	9500	e9350	9330	9090	8910	9140	8750	8480
15	e10100	9930	9830	9700	9500	e9340	9300	9080	8910	9130	8730	8460
16	e10100	9930	9830	9700	9480	9340	9300	9070	8890	9120	8730	8450
17	e10090	9920	9830	9700	9480	9330	9300	9050	8890	9110	8720	8440
18	e10090	9920	9820	9700	9470	e9330	9300	9030	8890	9100	8710	8420
19	e10080	9910	9820	9680	9470	e9330	9280	9020	8890	9090	8680	8400
20	e10080	9910	9820	9680	9470	e9320	9270	9020	8890	9070	8670	8370
21	10070	9910	9820	9680	9470	e9320	9280	9020	8870	9060	8660	8370
22	10070	9910	9830	9670	9470	e9320	9270	8990	8860	9040	8640	8360
23	10050	9910	9830	9670	9460	e9330	9250	8990	8870	9030	8630	8310
24	10040	9900	9830	9660	9460	e9330	9250	8990	8850	9020	8620	8320
25	10030	9890	9820	9660	9450	e9330	9250	8980	8840	9010	8610	8320
26	10030	9890	9810	9660	9430	e9340	9240	8970	8830	9000	8600	8310
27	10020	9880	9810	9660	9430	e9340	9230	8950	8960	8990	8580	8310
28	10020	9880	9800	9660	9430	9340	9230	8940	9180	8980	8570	8290
29	10020	9860	9790	9650	9410	9340	9240	8940	9260	8960	8560	8280
30	10000	9860	9780	9640	---	9340	9230	8930	9270	8950	8540	8270
31	10000	---	9780	9630	---	9350	---	8910	---	8940	8530	---
TOTAL	313140	298010	304690	300840	275430	290080	278930	281160	268510	282490	270550	252060
MEAN	10100	9930	9830	9700	9500	9360	9300	9070	8950	9110	8730	8400
MAX	10210	10000	9850	9780	9600	9420	9360	9210	9270	9270	8930	8520
MIN	10000	9860	9780	9630	9410	9320	9230	8910	8830	8940	8530	8270
(+)	3032.31	3031.88	3031.65	3031.20	3030.52	3030.32	3029.96	3028.90	3030.09	3028.97	3027.60	3026.74
(@)	-200	-140	-80	-150	-220	-60	-120	-320	+360	-330	-410	-260
(++)	65	65	55	59	74	66	64	102	70	93	162	128

WTR YR 2000 MAX 10470 MIN 8230 (@) -1930 (++) 1003

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the cities of Floydada, Silverton, and Tulia.

07298100 MACKENZIE RESERVOIR NEAR SILVERTON, TX--Continued



07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°34′09", long 100°11′37", Childress County, Hydrologic Unit 11120105, on left bank at downstream side of bridge on U.S. Highways 62 and 83, 3.1 mi downstream from Salt Creek, 10.0 mi north of Childress, and at mile 1,061.

DRAINAGE AREA.--7,725 mi^2, of which 4,767 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Dec 1964 to Mar 1965 (gage heights only), Apr 1965 to current year.
Water-quality records.--Chemical data: Oct 1968 to Sep 1982, Oct 1994 to Sep 1997. Pesticide data: Oct 1994 to Sep 1997. Specific conductance: Oct 1968 to Sep 1982, Oct 1994 to Sep 1997. Water temperature: Oct 1968 to Sep 1982, Oct 1994 to Sep 1997.

GAGE.--Water-stage recorder. Datum of gage is 1,628.4 ft above sea level (from Texas State Department of Highways and Public Transportation bench mark). Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1974, at least 10% of contributing drainage area has been regulated by MacKenzie Reservoir (station 07298100, conservation pool storage 46,250 acre-ft), Baylor Lake, and Lake Childress. Flow is also affected by flood-detention pools of 23 floodwater-retarding structures with a combined detention capacity of 20,010 acre-ft. These structures control runoff from 95.2 mi^2 in the drainage basin above station. Many small diversions upstream from station. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--8 years (water years 1966-73) 106 ft^3/s (76,800 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1965-73).--Maximum discharge, 58,800 ft^3/s Jun 26, 1965 (gage height, 12.00 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1899, 16.9 ft in May or Jun 1957, from information by local residents and State Department of Highways and Public Transportation.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.2	5.9	e8.6	57	13	9.8	1830	194	10	108	5.7	5.9
2	5.0	4.7	8.2	17	13	153	435	113	3980	79	e5.5	6.2
3	6.9	5.4	7.7	10	13	21	48	85	7400	213	e6.0	5.9
4	6.8	5.8	12	11	13	8.5	40	36	4250	98	6.3	5.9
5	4.8	6.2	9.5	20	13	8.4	31	29	1030	14	5.3	5.8
6	4.0	6.8	8.7	16	12	8.5	21	24	300	11	4.2	6.0
7	2.7	6.7	7.8	31	12	7.6	15	13	147	9.6	5.6	6.0
8	218	6.6	7.6	29	11	8.9	13	11	55	8.5	5.4	6.3
9	8.0	6.6	12	22	13	8.8	12	11	105	6.8	5.6	6.2
10	7.6	6.6	9.7	27	12	8.8	12	11	5540	5.6	5.5	6.1
11	7.7	6.7	9.1	13	11	8.6	18	9.2	1460	5.0	5.4	5.9
12	6.5	6.6	9.1	16	12	6.6	125	8.6	427	6.2	5.1	5.9
13	5.9	6.5	8.7	22	11	6.4	98	8.6	189	228	5.0	6.1
14	5.5	6.5	8.4	19	12	6.8	101	8.5	46	11	5.2	6.2
15	5.1	6.5	7.9	19	e13	4.9	134	8.5	15	6.3	e5.4	6.2
16	4.5	6.7	7.7	18	e14	7.2	28	8.5	12	e5.8	e5.5	6.3
17	4.5	6.6	8.4	18	e15	8.8	26	8.6	83	e5.6	e5.7	6.3
18	6.4	6.6	9.5	20	e16	8.3	20	8.8	1770	e5.4	e5.8	6.3
19	6.1	5.2	9.0	16	e16	8.0	13	9.2	222	e5.3	5.5	6.3
20	6.1	4.4	8.4	18	e17	7.9	11	8.9	135	e5.2	4.9	6.3
21	6.3	4.0	9.6	16	e18	8.2	11	e20	95	e5.1	4.8	6.4
22	6.0	6.7	10	15	e19	163	12	e80	237	e5.0	4.9	6.6
23	6.0	5.6	11	14	31	4610	12	12	99	e4.8	5.1	6.5
24	6.2	5.0	11	14	24	1680	13	12	33	4.7	5.2	6.6
25	6.6	6.8	7.1	14	747	32	e13	12	17	4.7	5.5	6.4
26	6.6	8.1	8.5	15	50	12	12	224	28	5.2	5.8	6.4
27	6.6	10	9.4	16	12	8.4	12	798	284	5.1	5.9	6.3
28	6.8	10	10	15	11	8.8	12	131	5470	5.5	6.0	6.3
29	8.1	e9.6	14	14	11	8.9	14	32	4970	5.8	6.1	6.4
30	8.2	e9.1	20	14	---	8.6	2520	16	374	5.7	5.9	6.3
31	6.5	---	38	14	---	42	---	11	---	5.8	6.1	---
TOTAL	401.2	198.5	326.6	580	1185	6898.7	5662	1962.4	38783	894.7	169.9	186.3
MEAN	12.9	6.62	10.5	18.7	40.9	223	189	63.3	1293	28.9	5.48	6.21
MAX	218	10	38	57	747	4610	2520	798	7400	228	6.3	6.6
MIN	2.7	4.0	7.1	10	11	4.9	11	8.5	10	4.7	4.2	5.8
AC-FT	796	394	648	1150	2350	13680	11230	3890	76930	1770	337	370

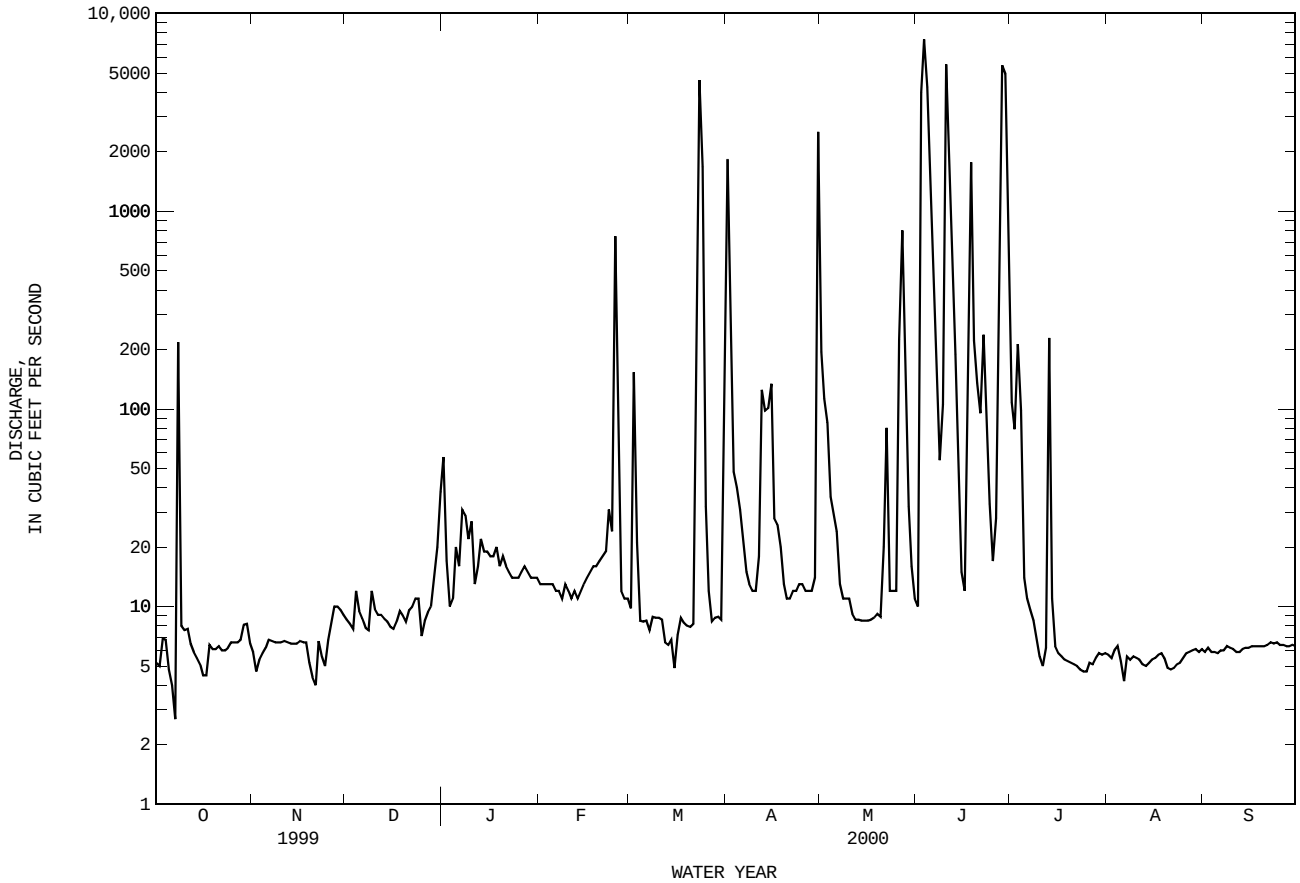
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2000z, BY WATER YEAR (WY)

MEAN	115	57.3	43.5	43.0	48.3	63.6	117	286	374	103	121	108
MAX	1279	377	265	296	358	500	735	1835	1297	342	535	378
(WY)	1987	1987	1993	1993	1998	1998	1997	1978	1995	1982	1997	1986
MIN	3.14	1.85	2.27	5.04	2.00	4.00	2.95	1.18	3.46	.66	1.56	3.39
(WY)	1985	1978	1983	1978	1974	1980	1978	1988	1994	1974	1980	1984

07299540 PRAIRIE DOG TOWN FORK RED RIVER NEAR CHILDRESS, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1974 - 2000z	
ANNUAL TOTAL	57167.20		57248.3			
ANNUAL MEAN	157		156		123	
HIGHEST ANNUAL MEAN					286	1987
LOWEST ANNUAL MEAN					27.6	1994
HIGHEST DAILY MEAN	9160	May 2	7400	Jun 3	34200	May 28 1978
LOWEST DAILY MEAN	.95	Sep 13	2.7	Oct 7	.00	Mar 11 1983
ANNUAL SEVEN-DAY MINIMUM	1.1	Sep 8	4.9	Jul 21	.00	Jun 7 1988
INSTANTANEOUS PEAK FLOW			14800	Jun 2	86400	May 28 1978
INSTANTANEOUS PEAK STAGE			10.15	Jun 2	13.94	May 21 1977
ANNUAL RUNOFF (AC-FT)	113400		113600		89470	
10 PERCENT EXCEEDS	200		110		180	
50 PERCENT EXCEEDS	12		8.9		10	
90 PERCENT EXCEEDS	3.8		5.4		1.4	

e Estimated
z Period of regulated streamflow.



07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX

LOCATION.--Lat 34°21′16", long 99°44′24", Hardeman County, Hydrologic Unit 11130101, near left bank at downstream side of bridge on State Highway 6, 2 mi downstream from confluence of North and South Groesbeck Creeks, 4 mi north of Quanah, and 9 mi upstream from mouth.

DRAINAGE AREA.--303 mi^2.

PERIOD OF RECORD.--Nov 1961 to current year. Prior to Oct 1974, published as "at State Highway 283".

GAGE.--Water-stage recorder. Datum of gage is 1,425.69 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. There are several diversions upstream from station for farm and ranch use and for a gypsum plant. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--The highest stage known occurred in Jun 1891, and the highest stage since 1891 occurred in Sep 1929, stages unknown. Other large floods are reported to have occurred in 1912, 1936, 1946, 1951, 1955, and 1957, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	1630	1,320	16.69	Jun 3	1100	2,130	17.33

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	22	17	19	17	16	39	e100	27	56	23	11
2	12	18	18	18	16	20	105	e75	60	47	25	16
3	13	18	17	16	17	17	79	42	1020	53	24	18
4	15	18	17	16	16	16	31	29	257	49	24	17
5	16	17	17	18	16	14	20	25	110	40	22	17
6	15	17	16	16	17	14	16	22	54	36	20	14
7	14	17	17	17	17	20	13	e20	37	34	18	13
8	13	19	17	20	17	16	16	e19	34	34	16	12
9	15	20	25	19	18	15	22	e18	33	32	16	12
10	14	20	20	19	18	15	21	18	33	30	16	12
11	14	20	18	19	17	14	22	17	29	30	20	13
12	13	21	19	19	17	12	25	16	29	31	19	12
13	14	22	18	17	18	11	24	15	29	32	20	12
14	14	24	18	16	17	11	23	14	28	30	21	12
15	15	25	18	17	17	11	23	15	31	32	19	11
16	16	25	18	18	17	17	22	17	34	33	19	11
17	15	25	18	18	18	18	21	16	47	33	19	11
18	17	24	18	18	18	18	21	16	67	30	18	11
19	16	24	18	19	18	18	e21	18	33	29	18	11
20	16	24	13	19	19	18	e21	18	36	28	17	10
21	17	24	13	18	18	17	e21	19	37	26	17	10
22	16	24	15	19	20	26	e20	22	29	25	17	10
23	16	24	17	19	19	650	e20	23	23	25	18	11
24	16	24	18	18	17	304	e20	26	21	25	18	25
25	17	23	15	19	35	119	e20	26	18	25	18	12
26	17	25	14	19	21	52	20	152	24	25	18	12
27	18	24	15	20	19	35	20	75	314	24	16	12
28	18	23	19	20	19	25	20	36	383	24	16	13
29	21	21	20	19	16	19	18	29	230	24	12	15
30	29	18	14	16	---	16	e30	29	94	23	11	17
31	24	---	16	17	---	15	---	28	---	23	11	---
TOTAL	499	650	533	562	529	1589	794	995	3201	988	566	393
MEAN	16.1	21.7	17.2	18.1	18.2	51.3	26.5	32.1	107	31.9	18.3	13.1
MAX	29	25	25	20	35	650	105	152	1020	56	25	25
MIN	12	17	13	16	16	11	13	14	18	23	11	10
AC-FT	990	1290	1060	1110	1050	3150	1570	1970	6350	1960	1120	780

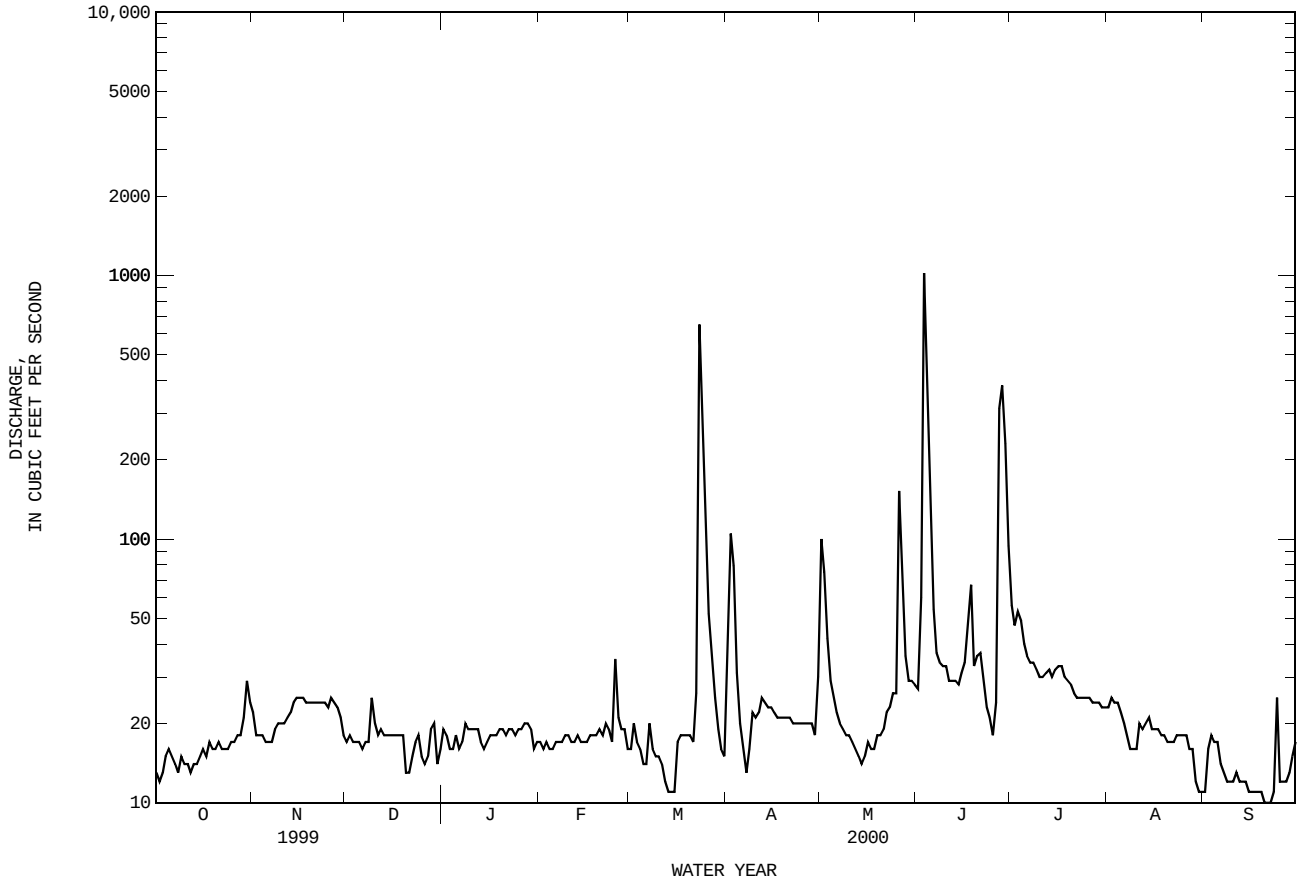
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

MEAN	33.1	11.1	10.5	9.18	11.0	13.9	21.6	31.0	56.5	21.3	26.3	47.0
MAX	393	31.3	43.0	24.3	62.0	91.2	271	163	502	228	545	286
(WY)	1984	1995	1992	1992	1997	1998	1997	1987	1995	1996	1995	1974
MIN	.68	1.33	1.48	1.33	1.35	1.18	1.12	1.74	1.54	.10	.000	.39
(WY)	1969	1969	1969	1971	1971	1971	1969	1967	1967	1964	1964	1968

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000	
ANNUAL TOTAL	11522.7		11299			
ANNUAL MEAN	31.6		30.9		24.0	
HIGHEST ANNUAL MEAN					112	1995
LOWEST ANNUAL MEAN					2.97	1964
HIGHEST DAILY MEAN	2150	May 28	1020	Jun 3	9570	Oct 20 1983
LOWEST DAILY MEAN	9.9	Sep 3	10	Sep 20	.00	Jul 7 1964
ANNUAL SEVEN-DAY MINIMUM	10	Sep 8	11	Sep 16	.00	Jul 7 1964
INSTANTANEOUS PEAK FLOW			2130	Jun 3	18000	Oct 20 1983
INSTANTANEOUS PEAK STAGE			17.33	Jun 3	24.78	Oct 20 1983
ANNUAL RUNOFF (AC-FT)	22860		22410		17370	
10 PERCENT EXCEEDS	34		34		26	
50 PERCENT EXCEEDS	20		18		7.3	
90 PERCENT EXCEEDS	13		13		1.6	

e Estimated

07299670 GROESBECK CREEK AT STATE HIGHWAY 6 NEAR QUANAH, TX--Continued



07299840 GREENBELT LAKE NEAR CLARENDON, TX

LOCATION.--Lat 35°00′02", long 100°53′40", Donley County, Hydrologic Unit 11120201, on upstream side near right end of dam on Salt Fork Red River and 4.3 mi north of Clarendon.

DRAINAGE AREA.--457 mi^2, of which 191 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Aug 1967 to current year. Prior to Oct 1973, published as Greenbelt Reservoir.

GAGE.--Water-stage recorder. Datum of gage is sea level. Gage-height telemeter at station.

REMARKS.--Records good except those for estimated daily contents, which are fair. The lake is formed by a rolled earthfill dam 5,800 ft long. Deliberate impoundment began Dec 5, 1966, and the dam was completed in Aug 1967. The dam is the property of Greenbelt Municipal and Industrial Water Authority and was built to impound water for municipal and industrial uses by the cities of Childress, Clarendon, Crowell, Hedley, and Quanah. The spillway is an uncontrolled open cut through natural ground, 1,450 ft wide and located at the left end of dam, designed to discharge 184,000 ft^3/s at an elevation of 2,684.0 ft. A morning-glory-type drop inlet with a 26-foot 8.5-inch-diameter opening at crest discharges into a 7- by 7-foot concrete conduit. The outlet works consists of a 36-inch pipe that is controlled by two 20-inch valves that control the discharge into a stilling basin and to a water treatment plant. The capacity table, dated Apr 1964, is based on Geological Survey topographic maps dated 1962. Conservation pool storage is 58,200 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	2,686.0
Design flood	2,683.0
Crest of spillway	2,674.0
Crest of morning-glory-type drop inlet	2,663.65
Top of conservation pool	2,663.20
Lowest gated outlet (invert)	2,597.0

COOPERATION.--Records of diversion and capacity table provided by Greenbelt Municipal and Industrial Water Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 44,650 acre-ft, Jun 26-28, 1975, elevation, 2,655.71 ft; minimum contents after initial filling, 10,940 acre-ft, Aug 11, 1968, elevation, 2,625.16 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 27,160 acre-ft, Jul 2, elevation, 2,643.37 ft; minimum contents, 23,260 acre-ft, Sep 30, elevation, 2,639.86 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

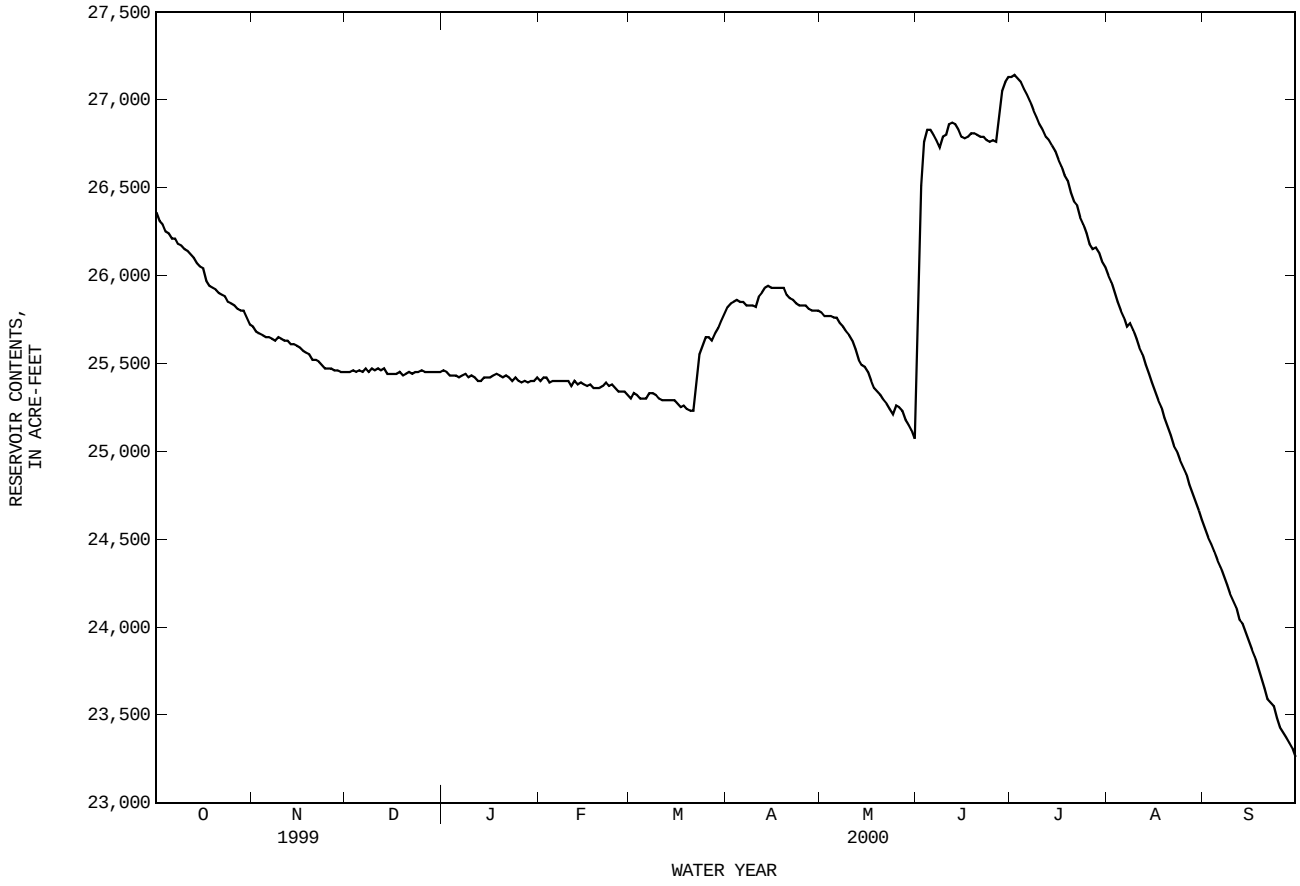
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26360	25710	25450	25460	25400	25300	25820	25790	25570	27130	26000	24560
2	26310	25680	25450	25450	25420	25330	25840	25770	26510	27140	25960	24510
3	26290	25670	25460	25430	25420	25320	25850	25770	26760	27120	25910	24470
4	26250	25660	25450	25430	25390	25300	25860	25770	26830	27100	25850	24430
5	26240	25650	25460	25430	25400	25300	25850	25760	26830	27060	25800	24380
6	26210	25650	25450	25420	25400	25300	25850	25760	26800	27030	25760	24340
7	26210	25640	25470	25430	25400	25330	25830	25730	26770	26990	25710	24290
8	26180	25630	25450	25440	25400	25330	25830	25710	26730	26940	25730	24240
9	26170	25650	25470	25420	25400	25320	25830	25680	26790	26900	25690	24190
10	26150	25640	25460	25430	25400	25300	25820	25660	26800	26860	25640	24150
11	26140	25630	25470	25420	25370	25290	25880	25630	26860	26830	25590	24110
12	26120	25630	25460	25400	25400	25290	25900	25580	26870	26790	25550	24040
13	26100	25610	25470	25400	25380	25290	25930	25520	26860	26770	25490	24020
14	26070	25610	25440	25420	25390	25290	25940	25490	26830	26740	25440	23970
15	26050	25600	25440	25420	25380	25290	25930	25480	26790	26710	25390	23920
16	26040	25590	25440	25420	25370	25270	25930	25450	26780	26660	25340	23870
17	25970	25570	25440	25430	25380	25250	25930	25400	26790	26620	25290	23830
18	25940	25560	25450	25440	25360	25260	25930	25360	26810	26570	25250	23770
19	25930	25550	25430	25430	25360	25240	25930	25340	26810	26540	25190	23710
20	25920	25520	25440	25420	25360	25230	25890	25320	26800	26470	25140	23650
21	25900	25520	25450	25430	25370	25230	25870	25290	26790	26420	25090	23590
22	25890	25510	25440	25420	25390	25380	25860	25270	26790	26400	25030	23570
23	25880	25490	25450	25400	25370	25550	25840	25240	26770	26330	25000	23550
24	25850	25470	25450	25420	25380	25600	25830	25210	26760	26290	24950	23480
25	25840	25470	25460	25400	25360	25650	25830	25260	26770	26240	24910	23430
26	25830	25470	25450	25390	25340	25650	25830	25250	26760	26180	24870	23400
27	25810	25460	25450	25400	25340	25630	25810	25230	26920	26150	24810	23370
28	25800	25460	25450	25390	25340	e25670	25800	25180	27050	26160	24760	23340
29	25800	25450	25450	25400	25320	e25700	25800	25150	27100	26130	24710	23310
30	25760	25450	25450	25400	---	e25740	25800	25120	27130	26080	24660	23260
31	25720	---	25450	25420	---	e25780	---	25070	---	26050	24610	---
MAX	26360	25710	25470	25460	25420	25780	25940	25790	27130	27140	26000	24560
MIN	25720	25450	25430	25390	25320	25230	25800	25070	25570	26050	24610	23260
(+)	2642.12	2641.88	2641.88	2641.85	2641.76	2642.14	2642.19	2641.54	2643.35	2642.41	2641.12	2639.86
(@)	-670	-270	0	-30	-100	+460	+20	-730	+2060	-1080	-1440	-1350
(++)	368	324	302	311	306	323	320	434	366	480	582	495

CAL YR 1999 MAX 34980 MIN 22270 (@) 340 (++) 4361
WTR YR 2000 MAX 27160 MIN 23260 (@) -3130 (++) 4611

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal and industrial use by the Greenbelt Municipal Authority.

07299840 GREENBELT LAKE NEAR CLARENDON, TX--Continued



07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX

LOCATION.--Lat 34°56′08", long 100°41′46", Donley County, Hydrologic Unit 11120201, right downstream side of bridge of FM 2471 1.0 mi downsteam from Bell Creek. and 5 mi north of Hedley.

DRAINAGE AREA.--74 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug 1964 to Sep 1995 (miscellaneous measurements), Aug 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,408.55 ft above sea level. Satellite telemeter at site.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There are several small diversions upstream from the station for farm and ranch use.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 100 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	1200	338	5.95	No other peak greater than base discharge.			

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

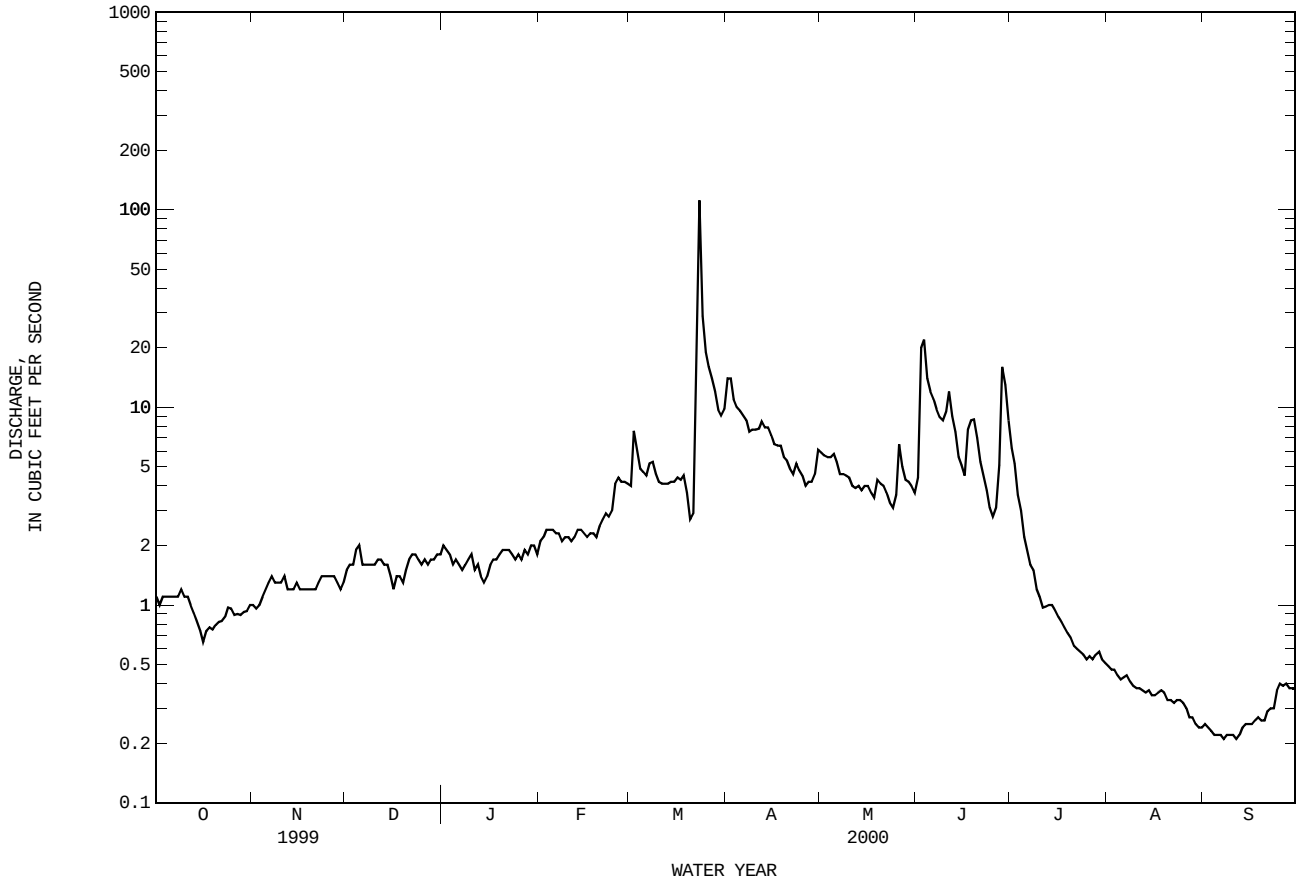
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	1.0	1.5	2.0	2.1	4.0	14	5.9	4.4	6.2	.49	.25
2	1.0	.96	1.6	1.9	2.2	7.6	14	5.7	20	5.2	.47	.24
3	1.1	1.0	1.6	1.8	2.4	6.1	11	5.6	22	3.6	.47	.23
4	1.1	1.1	1.9	1.6	2.4	4.9	10	5.6	14	3.0	.44	.22
5	1.1	1.2	2.0	1.7	2.4	4.7	9.6	5.8	12	2.2	.42	.22
6	1.1	1.3	1.6	1.6	2.3	4.5	9.1	5.3	11	1.9	.43	.22
7	1.1	1.4	1.6	1.5	2.3	5.2	8.6	4.6	9.8	1.6	.44	.21
8	1.1	1.3	1.6	1.6	2.1	5.3	7.5	4.6	8.9	1.5	.41	.22
9	1.2	1.3	1.6	1.7	2.2	4.6	7.7	4.5	8.6	1.2	.39	.22
10	1.1	1.3	1.6	1.8	2.2	4.2	7.7	4.4	9.5	1.1	.38	.22
11	1.1	1.4	1.7	1.5	2.1	4.1	7.8	4.0	12	.97	.38	.21
12	1.0	1.2	1.7	1.6	2.2	4.1	8.5	3.9	9.0	.98	.37	.22
13	.91	1.2	1.6	1.4	2.4	4.1	7.9	4.0	7.5	1.0	.36	.24
14	.82	1.2	1.6	1.3	2.4	4.2	7.9	3.8	5.6	1.0	.37	.25
15	.74	1.3	1.4	1.4	2.3	4.2	7.2	4.0	5.1	.94	.35	.25
16	.65	1.2	1.2	1.6	2.2	4.4	6.5	4.0	4.5	.87	.35	.25
17	.74	1.2	1.4	1.7	2.3	4.3	6.4	3.7	7.7	.82	.36	.26
18	.77	1.2	1.4	1.7	2.3	4.5	6.4	3.5	8.6	.77	.37	.27
19	.75	1.2	1.3	1.8	2.2	3.7	5.6	4.3	8.7	.72	.36	.26
20	.79	1.2	1.5	1.9	2.5	2.7	5.4	4.1	7.0	.68	.33	.26
21	.82	1.2	1.7	1.9	2.7	2.9	4.9	4.0	5.3	.62	.33	.29
22	.83	1.3	1.8	1.9	2.9	14	4.6	3.7	4.5	.60	.32	.30
23	.87	1.4	1.8	1.8	2.8	111	5.2	3.3	3.8	.58	.33	.30
24	.97	1.4	1.7	1.7	3.0	29	4.8	3.1	3.1	.56	.33	.37
25	.96	1.4	1.6	1.8	4.1	19	4.5	3.6	2.8	.53	.32	.40
26	.89	1.4	1.7	1.7	4.4	16	4.0	6.5	3.1	.55	.30	.39
27	.90	1.4	1.6	1.9	4.2	14	4.2	5.0	5.1	.53	.27	.40
28	.89	1.3	1.7	1.8	4.2	12	4.2	4.3	16	.56	.27	.38
29	.92	1.2	1.7	2.0	4.1	9.7	4.6	4.2	13	.58	.25	.38
30	.93	1.3	1.8	2.0	---	9.1	6.1	4.0	8.6	.53	.24	.38
31	1.0	---	1.8	1.8	---	9.8	---	3.7	---	.51	.24	---
TOTAL	29.25	37.46	50.3	53.4	77.9	337.9	215.9	136.7	261.2	42.40	11.14	8.31
MEAN	.94	1.25	1.62	1.72	2.69	10.9	7.20	4.41	8.71	1.37	.36	.28
MAX	1.2	1.4	2.0	2.0	4.4	111	14	6.5	22	6.2	.49	.40
MIN	.65	.96	1.2	1.3	2.1	2.7	4.0	3.1	2.8	.51	.24	.21
AC-FT	58	74	100	106	155	670	428	271	518	84	22	16

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2000, BY WATER YEAR (WY)

MEAN	2.53	2.88	3.33	3.73	4.76	9.52	6.31	4.13	4.19	.98	1.42	1.50
MAX	3.41	4.00	5.04	5.70	7.72	13.5	7.48	4.41	8.71	1.37	3.87	4.11
(WY)	1998	1998	1998	1998	1998	1998	1998	2000	2000	2000	1997	1997
MIN	.94	1.25	1.62	1.72	2.69	4.20	4.25	3.93	1.69	.77	.36	.28
(WY)	2000	2000	2000	2000	2000	1999	1999	1998	1998	1998	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1997 - 2000	
ANNUAL TOTAL	856.34		1261.86			
ANNUAL MEAN	2.35		3.45		3.63	
HIGHEST ANNUAL MEAN					4.57	1998
LOWEST ANNUAL MEAN					2.86	1999
HIGHEST DAILY MEAN	9.3	May 2	111	Mar 23	111	Mar 23 2000
LOWEST DAILY MEAN	.30	Aug 18	.21	Sep 7	.21	Sep 7 2000
ANNUAL SEVEN-DAY MINIMUM	.32	Aug 15	.22	Sep 5	.22	Sep 5 2000
INSTANTANEOUS PEAK FLOW			338	Mar 23	338	Mar 23 2000
INSTANTANEOUS PEAK STAGE			5.95	Mar 23	5.95	Mar 23 2000
ANNUAL RUNOFF (AC-FT)	1700		2500		2630	
10 PERCENT EXCEEDS	4.3		7.8		7.2	
50 PERCENT EXCEEDS	1.7		1.7		3.1	
90 PERCENT EXCEEDS	.53		.35		.60	

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued



07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Aug 1997 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Aug 1997 to current year.
TEMPERATURE: Aug 1997 to current year.

INSTRUMENTATION.--Water-quality monitor since Aug 1997.

REMARKS.--Records fair. Interruption in the record was caused by malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens, May 26, 1996; minimum, 166 microsiemens, Aug 3, 1999.
TEMPERATURE: Maximum, 36.5°C, Jul 13, 1998; minimum, 0.0°C, Dec 21-26, 1998, Jan 4, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 1,270 microsiemens, Mar 2; minimum, 301 microsiemens, Mar 22.
WATER TEMPERATURE: Maximum, 30.9°C, Jun 24; minimum, 0.3°C, Jan 29.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	975	939	963	951	918	940	1030	992	1020	1030	996	1020
2	981	936	964	948	921	937	1030	988	1010	1030	1000	1020
3	980	936	962	944	923	936	1020	993	1010	1040	1010	1030
4	972	930	955	945	919	935	1080	981	1030	1030	1010	1020
5	967	924	949	946	920	935	1080	1030	1050	1040	1010	1030
6	964	919	948	958	926	944	1050	1010	1030	1040	1010	1030
7	963	914	945	1020	955	982	1050	1030	1040	1030	1010	1020
8	966	927	951	995	960	981	1050	1010	1030	1040	1020	1030
9	969	925	952	997	962	984	1030	1020	1030	1040	1020	1040
10	965	925	952	1000	969	991	1030	1010	1020	1040	1020	1030
11	968	926	951	1010	971	994	1030	1010	1020	1040	1020	1040
12	969	925	952	1010	967	994	1030	1000	1020	1050	1020	1040
13	970	928	953	1000	966	991	1020	1000	1010	1050	1020	1040
14	969	926	953	1000	965	989	1020	999	1010	1040	1020	1040
15	971	924	952	992	945	971	1020	1000	1010	1050	1010	1030
16	971	927	953	967	926	951	1020	993	1010	1040	1000	1020
17	968	947	958	979	940	962	1010	987	1000	1040	1000	1020
18	961	924	945	987	940	968	1010	989	1000	1040	1020	1030
19	947	914	933	977	931	958	1010	983	999	1050	1020	1040
20	941	914	930	961	919	946	1000	985	997	1050	1020	1040
21	946	919	936	957	923	946	1000	982	995	1050	1020	1040
22	949	919	937	984	946	964	999	978	991	1060	1010	1040
23	946	914	933	1000	971	988	1000	987	998	1040	1000	1030
24	943	918	934	1010	991	1010	1000	982	997	1030	999	1020
25	949	918	939	1020	1000	1010	1010	987	999	1030	1010	1020
26	963	935	953	1030	1000	1020	1010	984	1000	1040	1020	1030
27	977	942	963	1030	1000	1020	1010	990	1000	1050	1020	1030
28	984	944	967	1030	1000	1020	1010	991	1010	1050	1040	1040
29	973	930	954	1030	1000	1020	1020	990	1010	1050	1040	1040
30	963	925	947	1030	998	1020	1020	983	1010	1060	1040	1050
31	954	920	941	---	---	---	1020	995	1010	1060	1040	1060
MONTH	984	914	949	1030	918	977	1080	978	1010	1060	996	1030

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	1070	1040	1060	1140	1090	1130	1130	1030	1080	1110	1060	1090
2	1070	1050	1060	1270	1110	1170	1100	1070	1080	1140	1110	1130
3	1080	1050	1070	1210	1150	1170	1100	1080	1090	1140	1090	1130
4	1080	1040	1060	1260	1210	1240	1120	1100	1110	1150	1100	1130
5	1070	1050	1060	1250	1140	1200	1120	1080	1110	1140	1090	1120
6	1080	1040	1070	1170	1090	1140	1110	1030	1070	1120	1080	1110
7	1080	1040	1070	1160	1060	1140	1090	1010	1060	1120	1090	1110
8	1080	1040	1070	1160	1080	1120	1090	1020	1060	1130	1090	1110
9	1090	1040	1070	1100	1050	1090	1080	996	1050	1120	1070	1100
10	1080	1020	1060	1110	1060	1090	1080	949	1050	1110	1050	1090
11	1080	1030	1060	1090	1020	1060	1090	1040	1070	1110	1070	1100
12	1080	1040	1060	1080	1020	1060	1090	1030	1070	1120	1080	1100
13	1090	1050	1070	1080	1020	1060	1120	1040	1090	1120	1070	1100
14	1100	1070	1090	1070	1010	1050	1090	972	1040	1110	1070	1100
15	1100	1060	1090	1040	985	1030	1070	955	1030	1110	1060	1090
16	1110	1060	1090	1040	988	1010	1070	967	1030	1110	1060	1090
17	1100	1050	1080	1000	973	992	1060	950	1020	1120	1070	1100
18	1100	1050	1080	998	962	986	1070	960	1020	1130	1070	1110
19	1100	1060	1080	989	943	973	1060	940	1020	1130	1090	1120
20	1100	1050	1080	997	947	976	1020	934	991	1130	1060	1100
21	1110	1060	1090	996	961	975	1000	876	960	1110	1050	1090
22	1120	1070	1100	982	301	929	1080	936	979	1110	1030	1080
23	1130	1070	1110	980	391	615	1120	926	1060	1110	1020	1070
24	1170	1070	1110	864	490	669	992	921	965	1110	1020	1070
25	1200	1110	1150	1030	864	945	1010	934	981	1110	1060	1090
26	1150	1090	1130	1110	1030	1090	1030	967	1000	---	---	e1090
27	1150	1110	1140	1140	1090	1110	1040	984	1020	---	---	e1080
28	1160	1100	1140	1140	1090	1110	1050	1000	1030	---	---	e1070
29	1140	1090	1120	1120	1070	1100	1080	1020	1050	---	---	e1060
30	---	---	---	1090	1070	1080	1120	976	1080	---	---	e1060
31	---	---	---	1100	1040	1080	---	---	---	---	---	e1050
MONTH	1200	1020	1090	1270	301	1040	1130	876	1040	---	---	1090

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e870	973	922	950	947	916	935	1000	973	987
2	---	---	e730	1020	973	999	943	914	933	1010	967	988
3	657	405	507	1040	1000	1020	940	911	930	1010	951	984
4	785	609	703	1030	998	1020	941	913	930	1010	946	980
5	887	785	844	---	---	e1020	948	920	935	1010	947	980
6	955	886	921	---	---	e1020	963	928	945	1010	957	984
7	993	954	978	---	---	e1020	965	930	950	1000	953	980
8	1020	991	1010	---	---	e1020	968	919	946	1000	950	976
9	1040	990	1020	---	---	e1030	967	930	948	1000	955	980
10	1030	997	1020	---	---	e1030	964	934	949	1000	957	984
11	1130	603	971	---	---	e1030	963	935	950	1010	966	988
12	1150	1080	1120	1040	1020	1030	962	939	952	1010	957	985
13	1140	1010	1070	1030	969	1020	961	935	951	1000	963	984
14	1010	970	996	1030	1000	1020	965	939	955	1010	976	991
15	979	918	956	1020	994	1010	962	938	953	1000	976	990
16	918	895	910	1020	988	1010	964	946	957	1000	977	991
17	896	856	877	1020	982	1010	963	939	955	1000	974	989
18	999	884	917	1020	972	1000	970	946	961	1000	968	986
19	1010	935	966	1010	968	996	974	947	963	997	967	984
20	949	926	937	1010	967	992	974	948	964	1000	965	988
21	929	906	915	1010	966	988	977	950	967	1010	985	996
22	925	911	919	997	970	985	982	948	968	1020	989	1010
23	945	924	934	989	949	976	989	950	971	1010	979	997
24	965	940	955	975	943	963	983	952	970	1030	1000	1020
25	962	949	956	967	957	963	989	956	974	1020	1000	1020
26	1000	949	974	972	935	958	992	962	978	1020	1000	1010
27	984	917	950	968	945	957	994	964	983	1020	998	1010
28	972	450	730	965	947	960	997	970	985	1020	998	1010
29	842	633	731	972	922	954	1010	947	982	1020	1000	1020
30	922	842	892	961	929	949	1000	962	985	1030	1000	1020
31	---	---	---	954	921	941	1010	956	983	---	---	---
MONTH	---	---	909	---	---	995	1010	911	958	1030	946	994

e Estimated

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.2	12.1	16.1	17.4	10.2	12.9	13.2	7.9	10.0	12.0	5.0	7.9
2	19.2	12.3	15.5	14.5	8.0	10.5	13.7	9.0	10.8	11.2	5.1	7.8
3	19.7	11.0	14.5	15.3	6.7	10.1	12.2	6.0	8.8	7.8	2.4	5.6
4	19.0	12.2	14.8	15.0	6.5	10.4	8.4	3.4	6.0	7.4	.6	3.4
5	21.1	12.1	16.0	16.6	8.1	12.1	7.9	2.2	4.4	8.6	1.7	4.5
6	22.2	14.2	17.6	18.1	10.5	13.8	7.6	1.8	4.5	9.1	2.9	5.2
7	21.8	15.5	18.1	18.2	10.5	13.8	9.7	3.2	5.9	8.0	1.0	4.2
8	19.8	15.7	17.5	17.4	10.5	13.6	9.5	4.2	6.3	9.5	2.8	5.5
9	21.5	13.8	16.9	18.3	11.9	14.7	8.3	4.0	5.8	9.3	2.1	4.9
10	21.9	13.1	16.8	17.8	10.7	13.7	8.0	2.3	4.7	10.0	2.7	5.6
11	21.6	13.1	16.8	17.8	10.2	13.4	7.8	2.6	4.8	9.4	2.5	5.3
12	21.7	13.3	16.9	17.8	10.1	13.3	8.6	3.6	5.5	10.7	2.3	5.8
13	21.4	13.3	16.7	18.0	10.1	13.5	8.7	2.1	5.0	9.3	2.3	5.1
14	21.1	12.4	16.3	17.0	10.5	13.0	7.0	2.9	4.6	8.3	1.2	4.4
15	22.4	14.7	17.7	15.8	8.4	11.5	7.6	1.2	3.7	11.7	4.2	7.3
16	18.8	13.1	15.5	16.0	8.1	11.4	6.9	1.7	3.9	11.9	4.8	7.8
17	13.9	10.7	11.4	15.8	8.1	11.6	7.9	3.7	5.4	10.5	5.5	7.8
18	17.0	10.2	12.5	14.7	10.2	12.1	8.1	4.6	5.8	11.1	5.0	7.7
19	15.7	9.1	11.6	15.0	9.1	11.2	9.3	4.4	6.1	12.6	5.2	8.3
20	16.8	7.7	11.6	13.3	6.3	9.7	5.9	2.4	4.4	9.3	4.2	6.5
21	18.2	9.0	12.7	14.5	7.9	10.5	7.1	3.1	4.6	8.7	3.7	6.0
22	18.1	9.4	13.0	12.3	6.5	9.1	7.4	2.6	4.3	10.6	5.2	7.5
23	16.9	8.9	12.3	12.0	6.2	8.7	8.6	1.6	4.4	11.1	3.8	6.8
24	16.6	8.2	12.0	10.1	3.5	6.3	9.4	2.8	5.4	8.9	4.0	6.2
25	18.1	9.7	13.1	9.8	2.5	5.7	8.6	2.5	5.5	6.9	3.6	5.3
26	18.1	9.5	13.2	11.3	3.6	6.8	10.8	5.3	7.2	4.9	2.5	3.9
27	17.3	10.0	13.5	12.8	5.1	8.3	9.6	3.6	5.9	5.0	.9	2.8
28	15.8	12.4	14.0	12.3	6.0	8.4	10.8	3.2	6.2	4.2	1.7	2.8
29	18.9	11.5	14.3	11.7	5.3	7.9	9.5	3.6	6.4	---	---	---
30	15.4	11.2	13.2	12.4	5.6	8.5	10.6	4.6	6.9	7.7	.7	3.7
31	16.1	11.1	13.1	---	---	---	9.9	2.9	6.0	6.6	1.1	3.6
MONTH	22.4	7.7	14.7	18.3	2.5	10.9	13.7	1.2	5.8	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.1	1.2	4.4	16.5	7.4	11.1	9.9	8.6	9.2	18.2	13.6	15.6
2	9.6	.6	4.4	14.3	8.7	11.2	16.9	8.3	11.9	17.9	13.7	15.4
3	11.8	3.4	6.5	13.6	6.4	9.2	14.2	9.1	11.1	23.2	13.1	17.4
4	9.1	3.4	5.5	16.4	6.2	10.5	18.0	7.3	11.9	23.8	15.0	18.9
5	10.2	2.6	5.6	17.1	7.7	11.8	21.2	11.2	15.4	23.8	18.1	20.1
6	8.4	3.2	5.5	18.8	9.1	13.6	22.2	12.9	16.7	28.1	19.4	22.7
7	11.9	2.5	6.3	17.5	10.0	14.1	19.6	13.1	15.8	26.8	17.3	21.7
8	12.8	3.2	7.3	18.1	7.7	12.0	19.1	10.3	13.9	25.4	18.6	21.2
9	13.0	6.5	9.1	17.3	8.2	12.1	17.6	10.0	13.3	25.3	16.8	20.4
10	15.2	6.1	9.9	12.9	8.1	10.5	19.8	12.1	15.4	26.4	16.9	20.8
11	10.7	5.3	7.6	16.4	6.7	10.4	15.5	12.2	13.5	27.8	19.6	22.9
12	10.3	2.2	6.0	17.0	7.1	11.2	14.8	11.6	12.9	23.8	17.9	20.5
13	12.1	4.8	7.6	15.8	8.0	11.5	20.5	11.9	15.0	23.6	14.1	18.2
14	12.5	4.0	7.5	19.2	8.2	13.1	23.1	14.2	17.6	23.3	14.3	18.2
15	12.5	4.9	8.4	20.9	11.6	15.3	22.7	15.3	18.1	25.1	16.2	20.2
16	13.3	5.5	8.7	13.6	5.7	8.4	21.2	11.3	15.7	24.8	19.3	21.8
17	15.2	6.3	10.0	12.8	5.2	7.8	21.6	13.2	16.9	24.7	19.6	21.5
18	13.1	6.4	9.2	15.1	7.1	9.8	24.4	14.9	18.8	23.7	16.5	19.7
19	12.8	3.9	7.6	17.2	6.2	10.8	24.3	16.8	19.6	20.6	15.3	17.7
20	11.5	5.2	7.9	18.4	7.6	12.4	21.6	13.4	16.8	24.7	14.7	19.2
21	16.3	6.5	10.8	12.8	10.8	11.7	20.1	12.5	16.1	26.7	18.1	22.0
22	16.9	10.8	12.9	10.8	8.5	10.4	17.6	13.4	15.4	28.0	18.8	23.0
23	17.5	8.6	12.1	12.0	8.5	10.4	18.9	12.9	15.6	29.0	19.5	23.8
24	17.5	8.0	12.3	13.2	10.1	11.4	22.8	13.6	17.4	28.5	19.8	24.1
25	15.6	9.0	12.2	15.3	11.7	13.3	22.9	15.2	18.4	25.1	20.8	21.9
26	14.8	6.1	9.6	17.1	13.4	15.0	23.5	14.4	18.5	28.4	19.5	23.4
27	15.6	5.0	9.6	17.2	13.1	15.0	22.4	16.7	18.8	27.8	20.9	23.9
28	14.6	7.3	10.4	16.0	13.2	14.7	23.0	13.8	17.9	27.6	19.4	23.1
29	16.5	7.6	11.3	15.5	11.2	13.3	24.7	15.5	19.3	28.2	19.8	23.6
30	---	---	---	18.1	9.3	12.9	19.7	15.5	17.6	28.6	21.0	24.4
31	---	---	---	12.4	9.5	11.2	---	---	---	28.3	21.4	24.5
MONTH	17.5	.6	8.5	20.9	5.2	11.8	24.7	7.3	15.8	29.0	13.1	21.0

07299890 LELIA LAKE CREEK BELOW BELL CREEK NEAR HEDLEY, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.6	21.5	23.8	25.1	22.3	23.5	28.0	20.1	23.6	27.9	20.8	24.0
2	22.5	20.5	21.4	29.1	22.4	25.1	28.7	20.5	24.2	27.9	21.0	24.1
3	21.7	20.0	20.7	30.0	23.9	26.4	27.5	21.2	24.2	28.1	20.9	24.1
4	25.0	20.3	22.0	29.9	23.9	26.3	28.0	21.5	24.4	28.6	21.4	24.5
5	26.4	19.9	22.5	29.4	23.1	25.7	28.7	21.9	24.9	28.7	21.5	24.6
6	26.4	19.4	22.4	29.3	21.9	25.1	27.7	21.8	24.7	28.1	21.9	24.7
7	27.7	19.9	23.0	29.4	22.0	25.2	28.7	22.4	25.2	27.6	21.4	24.3
8	27.7	19.7	23.1	29.8	22.6	25.7	29.4	22.8	25.6	26.9	21.1	23.7
9	27.6	20.4	23.2	29.7	22.9	25.9	29.2	23.2	25.8	26.2	21.3	23.5
10	27.6	21.5	23.8	30.1	22.6	25.9	29.5	22.8	25.7	27.8	21.3	24.1
11	26.7	21.2	23.6	29.8	23.0	26.1	29.3	21.6	25.1	26.4	21.0	23.5
12	28.3	21.5	24.5	30.0	23.4	26.2	29.2	21.0	24.8	25.9	19.6	22.6
13	29.5	22.2	25.1	29.5	23.7	25.6	29.0	21.2	24.8	27.3	21.3	23.9
14	27.7	21.5	23.9	30.4	22.3	25.8	29.1	22.0	25.2	27.5	20.6	23.6
15	27.7	19.2	23.0	29.6	21.9	25.4	28.9	21.4	24.9	25.6	20.2	22.7
16	23.5	19.7	22.1	29.6	23.0	26.0	28.4	21.9	25.0	24.7	18.4	21.4
17	19.7	17.8	18.6	30.1	23.0	26.1	28.1	21.8	24.8	24.6	18.4	21.2
18	19.4	18.0	18.6	30.3	22.9	26.1	28.7	21.4	24.5	24.8	18.4	21.2
19	26.0	18.8	21.7	30.1	22.5	25.9	28.4	22.2	25.0	24.9	18.9	21.5
20	28.3	21.5	24.2	30.1	22.4	25.8	28.0	21.0	24.3	22.4	18.4	20.3
21	24.5	22.2	23.3	29.4	22.1	25.4	28.5	21.5	24.6	21.6	15.0	18.2
22	28.8	21.8	24.6	28.6	22.4	25.1	27.9	21.5	24.4	24.9	19.1	21.5
23	29.2	22.8	25.5	29.5	22.0	25.2	28.8	21.6	24.8	22.1	17.5	19.1
24	30.9	22.8	26.3	29.3	21.8	25.1	29.0	21.7	25.0	17.8	14.4	16.3
25	30.6	23.8	26.5	25.3	22.9	24.0	28.9	21.3	24.8	18.0	11.4	14.3
26	25.7	22.0	23.4	29.1	21.3	24.7	29.1	21.7	25.1	18.3	10.3	14.1
27	23.1	21.2	21.9	26.7	23.0	24.5	28.9	22.5	25.3	19.3	11.7	15.4
28	22.2	19.9	21.3	25.5	22.3	23.8	28.2	21.7	24.6	20.1	13.0	16.4
29	23.2	20.9	21.8	28.6	22.0	24.6	28.3	21.6	24.6	20.4	14.7	17.4
30	26.3	20.9	23.1	27.4	20.8	23.8	27.5	21.5	24.4	20.7	15.3	17.8
31	---	---	---	28.2	20.4	23.8	26.9	22.0	24.4	---	---	---
MONTH	30.9	17.8	23.0	30.4	20.4	25.3	29.5	20.1	24.8	28.7	10.3	21.1

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX

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

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

WATER-DISCHARGE RECORDS

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

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

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

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

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

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

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

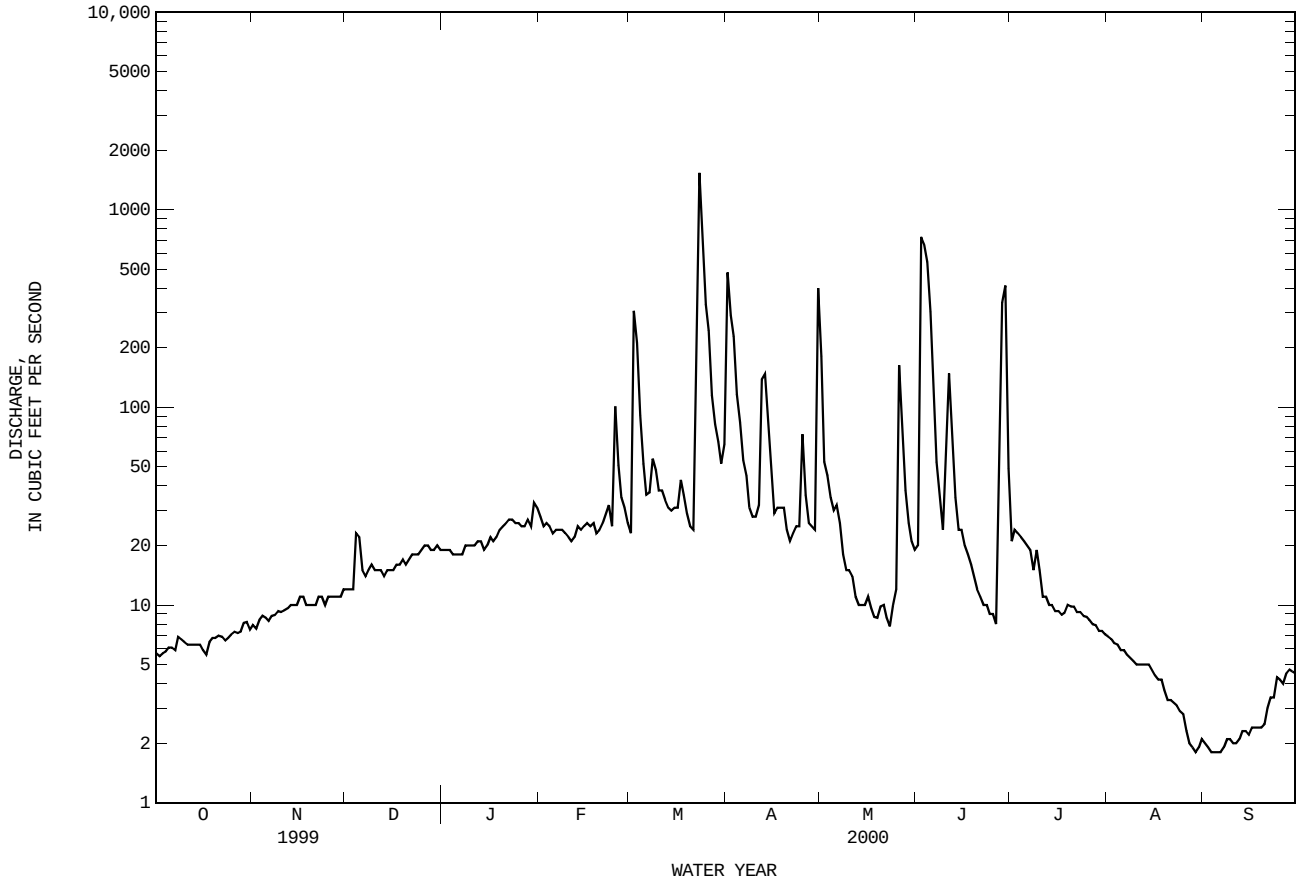
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2000z, BY WATER YEAR (WY)

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

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

e Estimated
z Period of regulated streamflow.

07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued



07300000 SALT FORK RED RIVER NEAR WELLINGTON, TX--Continued

WATER-QUALITY RECORDS

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

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

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

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
FEB												
03...	90	248	3	4.3	160	1400	350	.68	24	2690	<1	1.47
APR												
27...	89	224	3	3.8	160	1300	310	.65	20	2510	4	1.46
JUN												
15...	96	233	3	5.0	150	1400	320	.70	23	2600	<10	1.46
AUG												
10...	87	148	2	4.0	120	1600	200	.59	23	2680	<10	2.32

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

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07300500 SALT FORK RED RIVER AT MANGUM, OK

LOCATION.--Lat 34°51′30", long 99°30′30", in SW ¼ SE ¼ 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.--Apr 1905 to Jun 1906, Oct 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 Jun 30, 1906, nonrecording gage at site 0.2 mi upstream at different datum. Oct 1, 1937 to Nov 8, 1938, nonrecording gage at present site and datum.

REMARKS.--No estimated daily discharge. Records fair. Satellite telemeter at station.

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

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

No peak greater than base discharge.

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

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

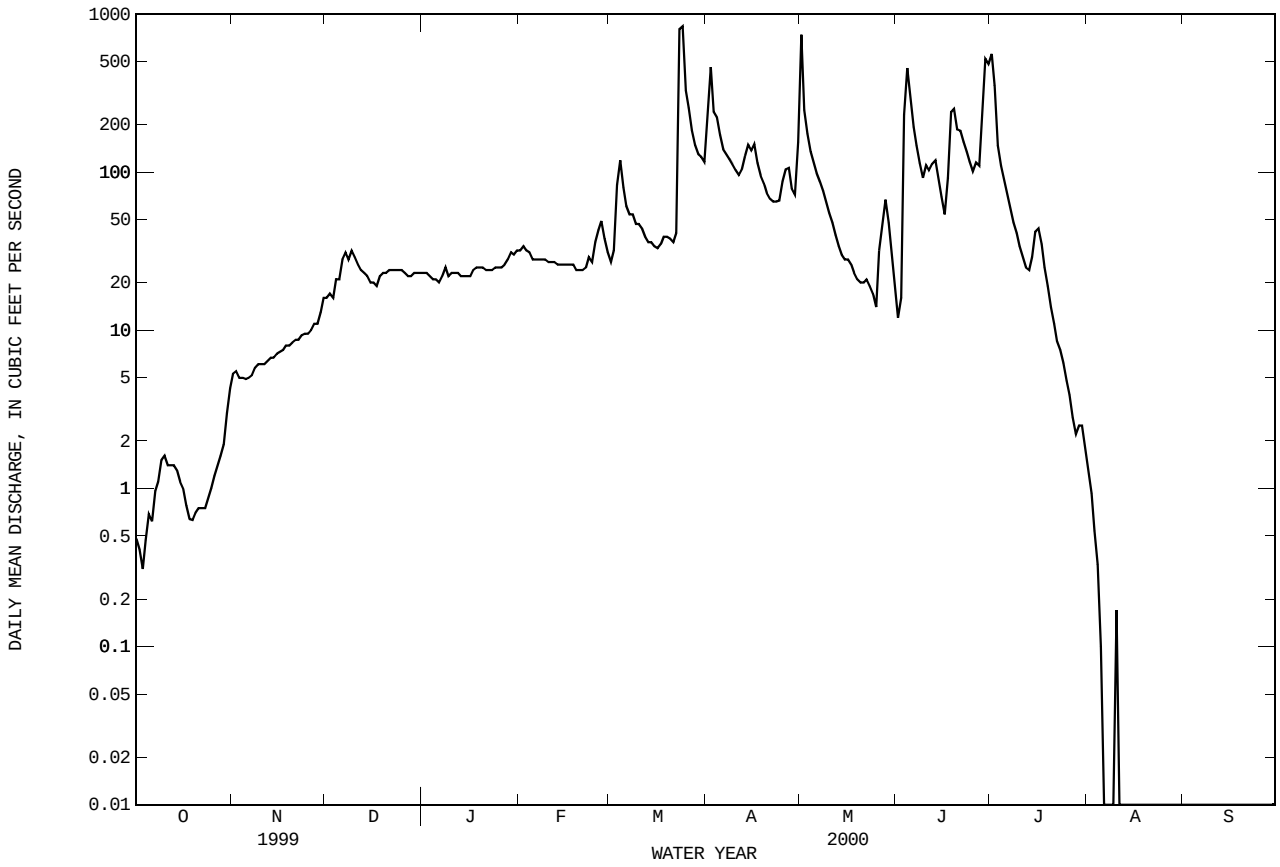
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

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

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

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

a No flow at times in most years.



07301200 McCLELLAN CREEK NEAR McLEAN, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 35°19′45", long 100°36′32", Gray County, Hydrologic Unit 11120301, on left bank at downstream side of bridge on State Highway 273, 5.0 mi upstream from mouth.

DRAINAGE AREA.--759.0 mi^2, of which 299 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Oct 1967 to Sep 1980 (continuous record), Oct 1981 to Sep 1992 (annual maximum), Oct 1992 to current year (peak discharge greater than base discharge).

REVISED RECORDS.--WDR TX-75-1: 1968-70, 1972, 1973(M), 1974.

GAGE.--Water-stage recorder. Datum of gage is 2,545.99 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. Since installation of gage in Oct 1967, at least 10% of contributing drainage area has been regulated by Lake McClellan (storage 5,000 acre-ft), 18 mi upstream. Flow is affected at times by discharge from flood-detention pool of a floodwater-retarding structure with detention capacity of 2,930 acre-ft. These structures control flow from 17.0 mi^2.

AVERAGE DISCHARGE.--13 years (water years 1967-80), 20.1 ft^3/s, 14,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft^3/s May 29, 1975 (gage height, 14.55 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1912, 21 ft in May 1957, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 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.

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07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 35°15′51", long 100°14′29", Wheeler County, Hydrologic Unit 11120302, on left bank at downstream side of bridge on U.S. Highway 83, 2.5 mi north of Shamrock.

DRAINAGE AREA.--1,082 mi^2, of which 379 mi^2 probably is noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1951 to Sep 1963 (miscellaneous measurements). Oct 1964 to Sep 1992 (annual maximum), Oct 1992 to current year (peak discharge greater than base discharge).

GAGE.--Water-stage recorder. Datum of gage is 2,165.55 ft above sea level.

REMARKS.--Records poor. Since installation of gage, at least 10% of contributing drainage area has been regulated by Lake McClellan (storage 5,000 acre-feet) 41 miles upstream. Flow is affected at times by discharge from flood-detention pools of eleven floodwater retarding structures with combined detention capacity of 18,290 acre-feet. These structures control runoff from 165 mi^2. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft^3/s Jun 3, 1995 (gage height, 8.49 ft).

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 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.

07301300 NORTH FORK RED RIVER NEAR SHAMROCK, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1999 to Sep 2000.
BIOLOGICAL DATA: Oct 1999 to Sep 2000.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	E. COLI WATER WHOLE TOTAL UREASE (COL / 100 ML) (31633)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB												
03...	1102	25	2400	8.3	6.5	12.2	107	K3	K4	720	560	220
APR												
27...	0950	45	2270	8.2	16.0	9.4	103	73	100	630	490	180
JUN												
15...	1000	46	2250	8.2	21.0	8.7	106	73	73	630	460	180
AUG												
10...	0905	.10	2670	7.8	24.0	7.2	93	1300	1500	980	790	300

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)
FEB												
03...	43	232	4	4.1	150	430	450	.63	22	1490	5	.537
APR												
27...	42	227	4	4.4	140	380	450	.64	21	1390	9	--
JUN												
15...	43	235	4	4.3	180	330	450	.68	28	1380	11	--
AUG												
10...	55	210	3	4.9	200	690	400	.74	26	1810	<10	--

DATE	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
FEB											
03...	.013	.550	.038	.77	.19	--	--	.22	<.050	<.050	<.010
APR											
27...	<.010	<.050	<.020	--	--	--	.20	.19	.010	<.006	<.010
JUN											
15...	<.010	<.050	<.020	--	--	--	.28	.29	.010	<.006	<.010
AUG											
10...	<.010	<.050	.070	--	.17	.13	.20	.24	E.006	<.006	<.010

07301410 SWEETWATER CREEK NEAR KELTON, TX

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

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

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

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

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

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

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

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

No peak greater than base discharge.

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

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

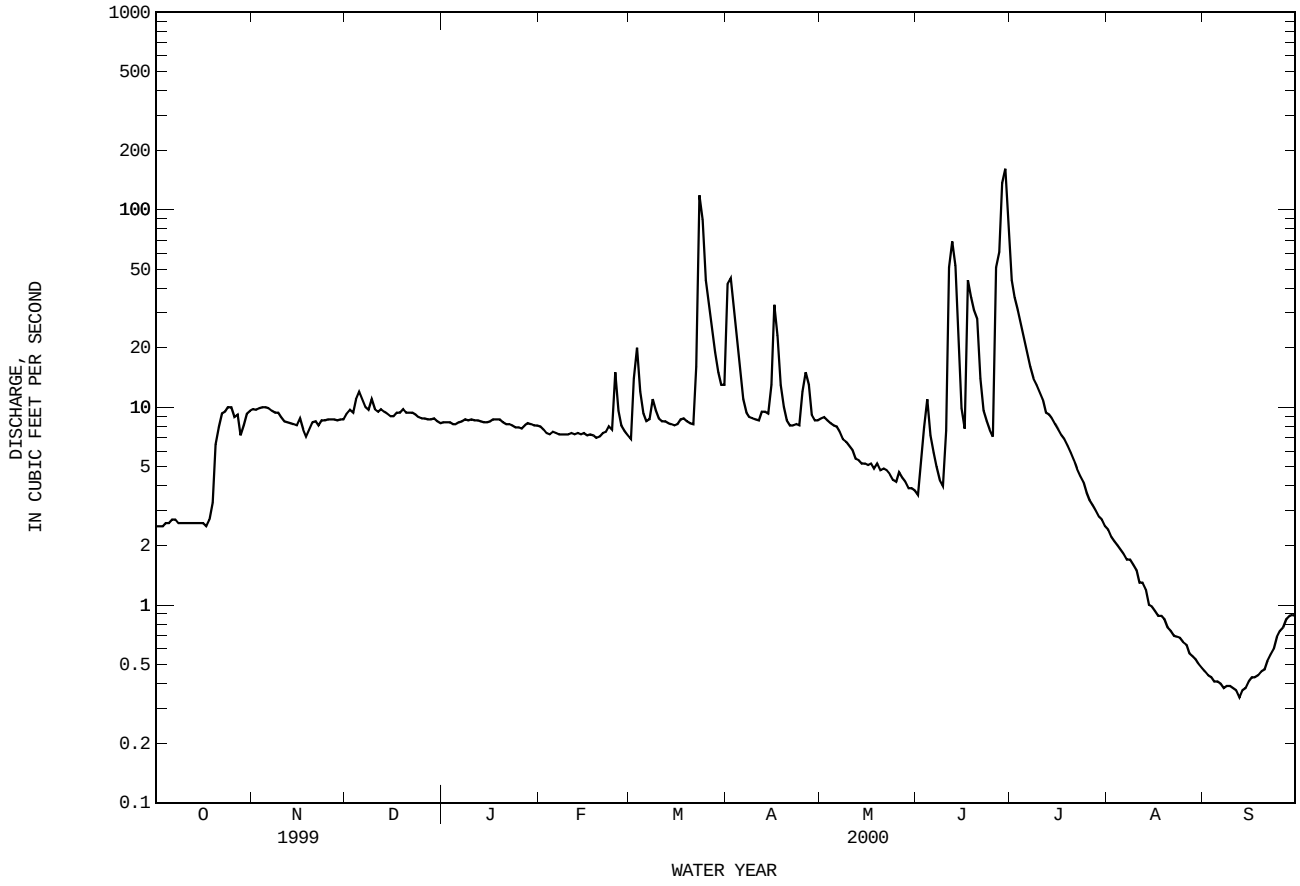
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000, BY WATER YEAR (WY)

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

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

e Estimated

07301410 SWEETWATER CREEK NEAR KELTON, TX--Continued



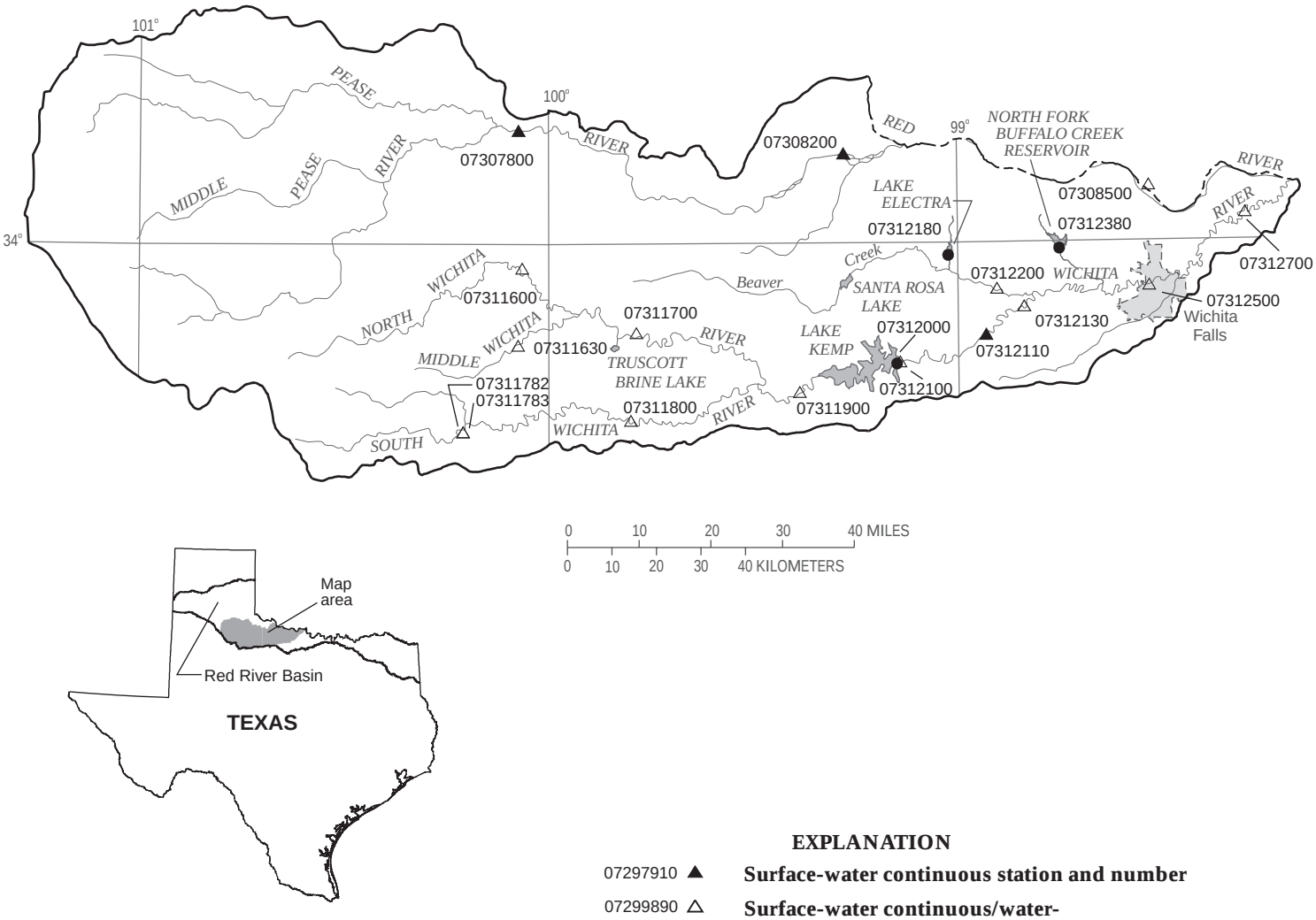


Figure 5.-- Map showing location of gaging stations in the second section of the Red River Basin

07307800 Pease River near Childress, TX 80
07308200 Pease River near Vernon, TX 82
07308500 Red River near Burkburnett, TX 84
07311600 North Wichita River near Paducah, TX 94
07311630 Middle Wichita River near Guthrie, TX 104
07311700 North Wichita River near Truscott, TX 114
07311782 South Wichita River at low-flow dam near Guthrie, TX 124
07311783 South Wichita River below low-flow dam near Guthrie, TX 134
07311800 South Wichtia River near Benjamin, TX 140
07311900 Wichita River near Seymour, TX 148
07312000 Lake Kemp near Mabelle, TX 158
07312100 Wichita River near Mabelle, TX 160
07312110 South Side Canal near Dundee, TX 170
07312130 Wichita River at State Highway 25 near Kamay, TX 172
07312180 Lake Electra near Electra, TX 178
07312200 Beaver Creek near Electra, TX 180
07312380 North Fork Buffalo Creek Reservoir near Iowa Park, TX 186
07312500 Wichita River at Wichita Falls, TX 188
07312700 Wichita River near Charlie, TX 194

07307800 PEASE RIVER NEAR CHILDRESS, TX

LOCATION.--Lat 34°13'39", long 100°04'24", Cottle County, Hydrologic Unit 11130105, near right bank at downstream side of bridge on State Highway 207, 0.8 mi upstream from Catfish Creek, 4.4 mi downstream from confluence of North and Middle Forks, 17 mi southeast of Childress, and 71.0 mi upstream from mouth.

DRAINAGE AREA.--2,754 mi^2, of which 559 mi^2 probably is noncontributing

PERIOD OF RECORD.--Dec 1959 to Sep 1962, Oct 1967 to current year.
Water-quality records.--Chemical data: Jul 1968 to Sep 1982, Oct 1994 to Sep 1997. Pesticide data: Oct 1994 to Sep 1997. Specific conductance: Oct 1994 to Sep 1997. Water temperature: Oct 1994 to Sep 1997.

GAGE.--Water-stage recorder. Datum of gage is 1,492.98 ft above sea level. Prior to Dec 21, 1959, nonrecording gage at same site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. There are three small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of six flood-water-retarding structures with a combined detention capacity of 1,360 acre-ft. These structures control runoff from 6.27 mi^2 in the Kent Creek drainage basin. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1909, 22 ft Jun 1, 1957; flood in May 1935 reached a stage of 18 ft and was the second highest, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,200 ft^3/s:

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	9.6	6.6	5.9	7.6	6.0	e529	111	1.1	71	e3.3	.98
2	2.7	7.6	6.3	5.5	7.6	17	e469	24	183	88	e3.0	e.77
3	3.0	7.6	6.1	5.1	7.3	16	e200	20	599	24	e3.2	e.60
4	4.2	7.6	7.0	5.4	6.7	8.9	141	17	229	14	e3.2	e.60
5	5.8	7.3	7.5	5.4	6.9	7.4	102	15	105	8.6	e2.7	e.60
6	4.5	6.7	6.3	5.0	6.9	6.7	83	12	63	6.1	e2.7	e.55
7	3.4	6.1	6.1	5.5	7.3	7.0	65	10	46	5.8	e2.7	.56
8	4.1	6.0	6.0	9.3	7.1	6.6	e50	8.3	32	5.7	e2.7	.57
9	28	5.4	12	6.8	6.8	5.0	e52	8.0	22	5.8	e2.6	.52
10	9.2	5.3	11	6.0	7.0	5.4	e50	7.9	21	5.6	e2.5	.53
11	6.5	5.7	7.5	5.8	6.5	5.3	e67	7.2	20	6.3	e2.0	.53
12	6.6	5.8	6.4	6.1	7.1	5.2	78	6.8	20	8.3	1.7	.56
13	6.3	5.5	6.1	6.3	7.1	4.9	94	6.9	17	50	1.6	.51
14	6.0	5.7	5.4	6.5	7.1	5.5	93	6.6	16	60	1.7	.53
15	5.7	5.9	5.6	6.9	7.3	5.1	67	6.1	15	8.2	1.6	.50
16	4.6	6.0	5.8	6.9	7.0	5.6	51	6.0	15	7.2	1.6	.54
17	4.4	5.7	5.9	7.2	6.7	7.6	43	6.4	37	6.4	1.6	.51
18	5.8	5.3	6.1	7.2	6.0	6.9	41	5.8	38	6.2	1.5	.49
19	6.0	5.4	6.2	7.2	6.1	5.9	32	6.3	151	5.8	1.5	.47
20	6.0	5.6	6.1	6.6	6.2	5.4	25	10	e96	5.5	1.3	.43
21	5.6	5.6	6.0	6.9	6.6	5.6	23	9.3	e28	5.2	1.3	.46
22	5.2	6.2	6.4	6.8	7.0	40	24	9.8	e29	4.7	1.2	.46
23	5.0	6.1	6.1	7.1	6.5	1050	23	5.7	e28	4.4	1.1	.51
24	5.3	6.2	6.2	7.0	6.2	590	21	3.7	e25	3.9	1.1	.53
25	4.8	6.3	6.5	6.8	19	239	19	4.3	e22	3.9	1.3	.52
26	5.1	6.3	6.3	6.9	9.4	e131	18	89	e18	3.9	1.2	.59
27	5.0	6.2	6.1	8.5	8.1	e97	16	21	422	3.9	1.2	.72
28	4.7	6.2	6.2	9.2	6.9	e77	16	5.7	624	3.9	1.1	.77
29	6.8	6.1	6.4	7.9	6.2	e76	16	4.1	239	e3.5	1.1	.80
30	38	6.3	5.8	7.6	---	e72	39	2.5	92	e3.4	1.0	.75
31	13	---	5.8	7.6	---	e66	---	1.7	---	e3.4	1.0	---
TOTAL	224.3	187.3	203.8	208.9	214.2	2587.0	2547	458.1	3253.1	442.6	57.3	17.46
MEAN	7.24	6.24	6.57	6.74	7.39	83.5	84.9	14.8	108	14.3	1.85	.58
MAX	38	9.6	12	9.3	19	1050	529	111	624	88	3.3	.98
MIN	2.7	5.3	5.4	5.0	6.0	4.9	16	1.7	1.1	3.4	1.0	.43
AC-FT	445	372	404	414	425	5130	5050	909	6450	878	114	35
CFSM	.00	.00	.00	.00	.00	.04	.04	.01	.05	.01	.00	.00
IN.	.00	.00	.00	.00	.00	.04	.04	.01	.06	.01	.00	.00

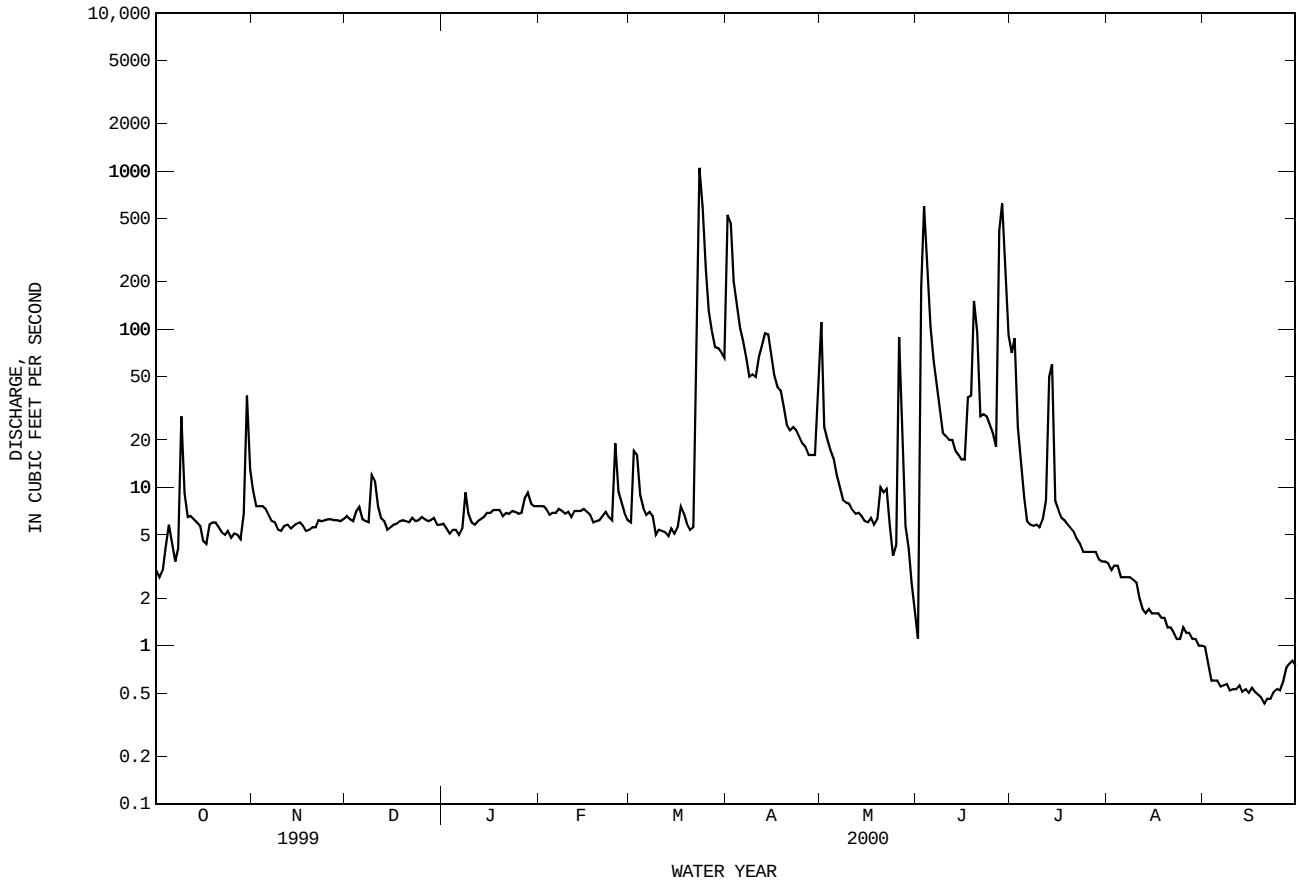
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000h, BY WATER YEAR (WY)

MEAN	96.0	21.9	20.3	20.6	26.0	34.2	59.8	90.7	210	50.9	63.9	87.4
MAX	895	154	132	158	170	181	750	424	858	248	723	683
(WY)	1984	1987	1992	1992	1992	1973	1997	1997	1995	1961	1995	1995
MIN	1.68	3.04	3.74	2.70	2.83	2.78	2.87	3.67	4.08	.28	.13	.58
(WY)	1981	1978	1979	1971	1971	1971	1960	1961	1970	1980	1980	2000

07307800 PEASE RIVER NEAR CHILDRESS, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000h	
ANNUAL TOTAL	14100.97		10401.06			
ANNUAL MEAN	38.6		28.4		64.6	
HIGHEST ANNUAL MEAN					204	1995
LOWEST ANNUAL MEAN					15.8	1994
HIGHEST DAILY MEAN	1220	May 27	1050	Mar 23	14800	Oct 20 1983
LOWEST DAILY MEAN	.63	Aug 31	.43	Sep 20	.00	Aug 10 1969
ANNUAL SEVEN-DAY MINIMUM	.77	Aug 27	.48	Sep 17	.00	Aug 10 1969
INSTANTANEOUS PEAK FLOW			1960	Mar 23	28500	Jun 5 1995
INSTANTANEOUS PEAK STAGE			9.39	Mar 23	17.12	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	27970		20630		46830	
ANNUAL RUNOFF (CFSM)	.018		.013		.029	
ANNUAL RUNOFF (INCHES)	.24		.18		.40	
10 PERCENT EXCEEDS	83		61		96	
50 PERCENT EXCEEDS	8.6		6.3		9.1	
90 PERCENT EXCEEDS	1.4		1.1		1.7	

e Estimated
h See PERIOD OF RECORD paragraph



07308200 PEASE RIVER NEAR VERNON, TX

LOCATION.--Lat 34°10′45", long 99°16′40", Wilbarger County, Hydrologic Unit 11130105, near left bank at downstream side of bridge on U.S. Highway 283, 1.9 mi north of Vernon, and 10 mi upstream from mouth.

DRAINAGE AREA.--3,488 mi^2, of which 559 mi^2 probably is noncontributing.

PERIOD OF RECORD.--Dec 1959 to Sep 1982, Oct 1982 to Sep 1987 (annual maximums), Mar 1992 to current year.
Water-quality records.--Chemical data: Nov 1967 to Sep 1981. Specific conductance: Oct 1998 to Sep 1999. Temperature: Oct 1998 to Sep 1999.

GAGE.--Water-stage recorder. Datum of gage is 1,166.03 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. There are four small diversions for irrigation above station. Flow is affected at times by discharge from the flood-detention pools of six flood-retarding structures with a combined detention capacity of 1,360 acre-ft. These structures control runoff from 6.27 mi^2 in the Kent Creek drainage basin. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 24 ft in 1891. The flood in Sep 1936 reached a stage of 23.5 ft, and the flood of Jun 2, 1957, reached a stage of 22.0 ft, from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	2300	5,490	12.36	Jun 3	2000	15,400	15.86
May 1	0700	3,310	11.16				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.11	2.6	1.4	5.9	9.0	8.5	174	1630	27	986	2.0	.57
2	.00	.98	1.6	5.9	9.2	14	204	692	253	735	1.7	.57
3	.03	.87	1.5	5.9	8.2	29	653	401	6660	332	1.5	.59
4	1.3	.88	3.5	5.8	7.8	39	481	261	4460	255	1.3	.68
5	1.2	.90	2.0	6.7	8.9	18	359	214	1240	150	1.0	.60
6	.82	.87	1.9	6.5	8.8	18	302	187	456	111	1.1	.40
7	.46	.94	1.7	6.8	7.9	18	242	160	277	84	1.1	.42
8	.78	.75	1.8	7.4	8.5	13	203	141	196	56	.99	.56
9	44	.68	24	6.6	9.2	9.0	180	115	153	40	.81	.45
10	8.3	.78	28	7.0	8.9	8.0	160	107	126	30	.85	.53
11	2.6	.89	44	7.4	7.6	7.2	147	96	109	22	.95	.69
12	1.1	.95	12	7.4	9.1	8.7	178	80	92	18	.92	.44
13	.62	1.0	8.0	7.7	8.1	8.2	180	72	73	18	.88	.61
14	.46	1.0	5.0	8.2	8.5	8.1	158	74	49	18	.60	.63
15	.28	.96	4.6	8.5	8.2	8.4	154	67	39	34	.44	.46
16	.00	.88	5.2	8.2	7.4	8.4	196	64	32	118	.46	.55
17	.01	.86	5.4	8.1	7.8	8.1	195	54	218	67	.55	.61
18	.21	.90	5.2	7.8	6.9	7.9	151	46	594	52	.49	.41
19	.31	.91	5.3	8.0	6.8	7.9	128	40	259	32	.62	.14
20	.32	1.1	5.2	7.8	7.4	10	111	42	212	20	.54	.13
21	.42	1.3	5.3	9.0	8.0	8.4	102	39	178	15	.69	.37
22	.51	1.6	5.4	7.8	11	13	94	33	144	12	.57	.56
23	.47	1.2	5.3	7.6	36	2180	79	31	101	11	.53	.45
24	.46	1.2	5.1	7.9	29	2360	73	29	66	9.3	.60	.21
25	.46	1.2	5.3	7.5	24	891	75	23	31	7.7	.58	.15
26	.37	1.1	5.4	7.7	13	545	61	73	23	6.6	.66	.16
27	.19	1.6	5.2	7.6	12	377	49	72	34	6.2	.60	.35
28	.08	1.8	5.2	7.6	16	287	43	141	73	6.1	.34	.37
29	.24	1.5	5.7	8.8	9.7	234	80	135	849	5.0	.13	.30
30	3.4	1.5	5.0	9.3	---	193	131	73	705	2.5	.42	.31
31	3.9	---	5.4	9.8	---	169	---	49	---	1.8	.66	---
TOTAL	73.41	33.70	225.6	234.2	322.9	7514.8	5343	5241	17729	3261.2	24.58	13.27
MEAN	2.37	1.12	7.28	7.55	11.1	242	178	169	591	105	.79	.44
MAX	44	2.6	44	9.8	36	2360	653	1630	6660	986	2.0	.69
MIN	.00	.68	1.4	5.8	6.8	7.2	43	23	23	1.8	.13	.13
AC-FT	146	67	447	465	640	14910	10600	10400	35170	6470	49	26

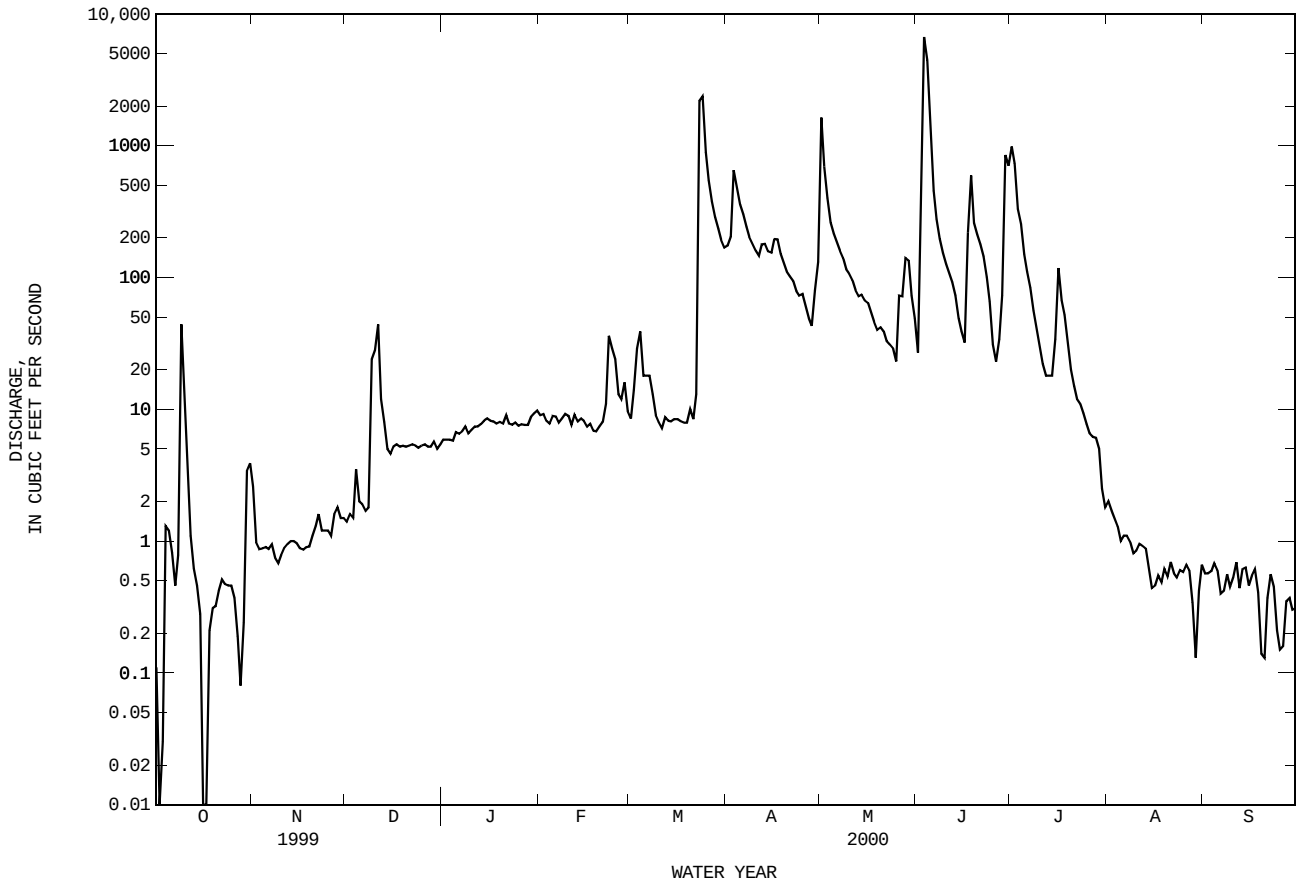
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000h, BY WATER YEAR (WY)

MEAN	110	43.2	28.7	27.2	46.1	75.5	109	228	370	177	119	199
MAX	1057	206	163	116	364	662	1009	777	2196	1826	1657	895
(WY)	1961	1993	1960	1973	1998	1998	1997	1977	1995	1999	1995	1965
MIN	.000	.000	.000	.000	.000	.000	.000	6.12	4.99	.000	.000	.13
(WY)	1964	1971	1971	1971	1971	1971	1971	1961	1998	1964	1980	1998

07308200 PEASE RIVER NEAR VERNON, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000h	
ANNUAL TOTAL	96958.53		40016.66			
ANNUAL MEAN	266		109		127	
HIGHEST ANNUAL MEAN					441	1995
LOWEST ANNUAL MEAN					12.6	1964
HIGHEST DAILY MEAN	20900	Jul 11	6660	Jun 3	20900	Jul 11 1999
LOWEST DAILY MEAN	.00	Aug 19	.00	Oct 2	.00	Aug 7 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 19	.22	Oct 15	.00	Aug 7 1960
INSTANTANEOUS PEAK FLOW			15400	Jun 3	40500	Oct 2 1983
INSTANTANEOUS PEAK STAGE			15.86	Jun 3	20.15	Oct 2 1983
ANNUAL RUNOFF (AC-FT)	192300		79370		91970	
10 PERCENT EXCEEDS	383		196		204	
50 PERCENT EXCEEDS	13		7.9		16	
90 PERCENT EXCEEDS	.10		.46		.00	

h See PERIOD OF RECORD paragraph



07308500 RED RIVER NEAR BURKBURNETT, TX

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

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

WATER-DISCHARGE RECORDS

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

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

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

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

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

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

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

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

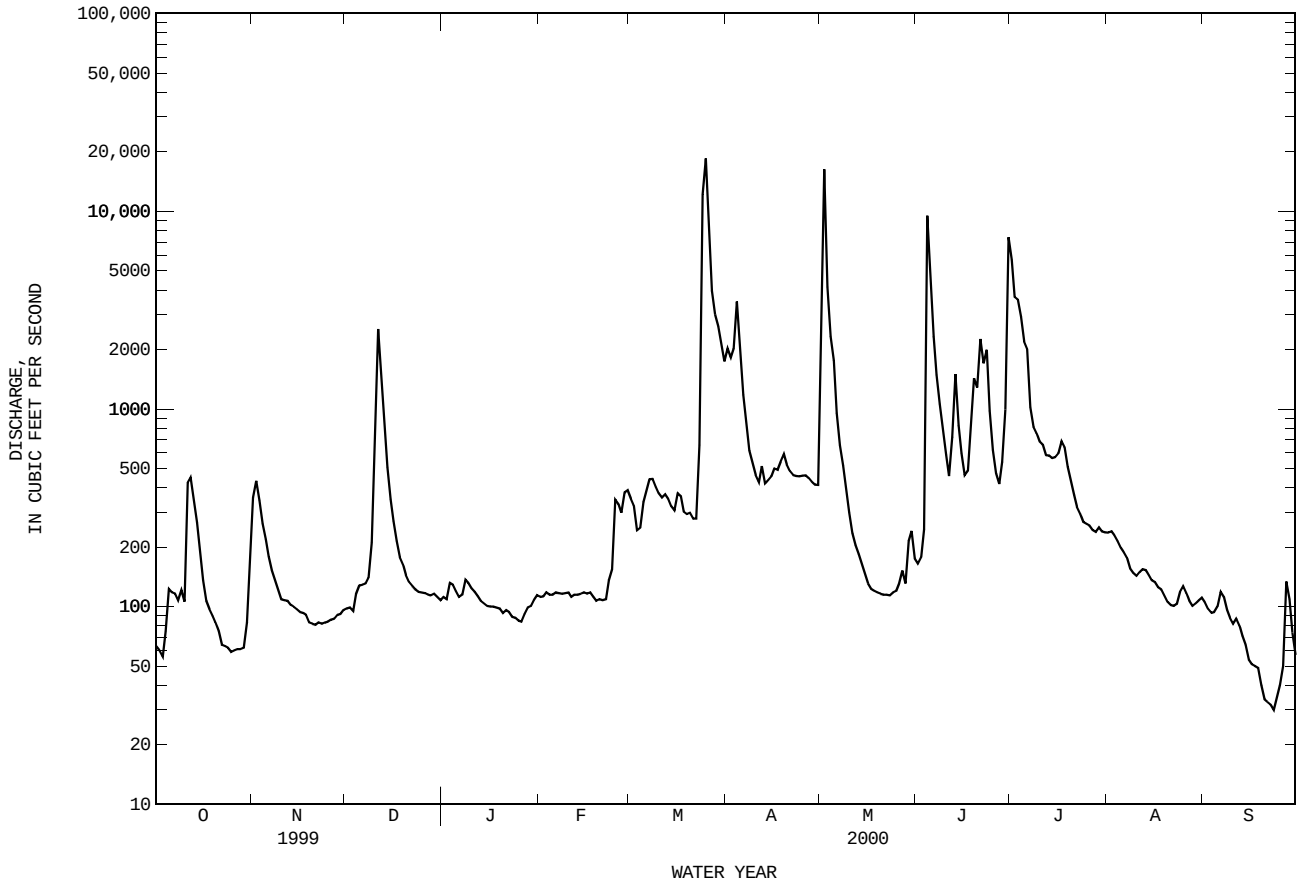
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000, BY WATER YEAR (WY)

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

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

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

e Estimated



WATER-QUALITY RECORDS

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

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

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

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

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

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

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

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

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT											
21...	1140	13	11	--	--	100	1100	2000	.40	5.4	4850
NOV											
22...	1260	14	9.6	--	--	92	1300	2100	.35	4.0	5280
DEC											
03...	1290	14	8.9	--	--	110	1300	2200	.35	2.2	5510
20...	992	13	8.6	--	--	160	860	1500	.35	14	3830
FEB											
22...	1340	15	9.6	--	--	120	1300	2200	.38	.26	5560
MAR											
21...	1160	13	9.1	--	--	110	1300	2000	.34	1.3	4980
APR											
14...	989	12	8.6	--	--	100	1100	1600	.32	7.6	4130
MAY											
23...	1030	12	9.2	--	--	120	1200	1700	.40	5.9	4530
JUN											
02...	1640	19	11	--	--	100	1400	2800	.44	6.3	6470
JUL											
17...	917	11	9.5	98	80	--	1100	1500	.41	11	3970
AUG											
08...	836	10	9.5	109	90	--	1100	1300	.48	11	3800
SEP											
08...	712	9	9.9	115	94	--	1100	1100	.59	15	3380

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

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

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

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

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

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

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

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

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

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

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

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

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

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

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

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

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

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

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

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

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

e Estimated

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

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

07308500 RED RIVER NEAR BURKBURNETT, TX--Continued

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

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

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

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07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX

LOCATION.--Lat 33°57′02", long 100°03′52", Cottle County, Hydrologic Unit 11130204, right downstream end of old abandoned county bridge, 4.0 mi downsteam from Cottonwood Creek, 7 mi downstream from Salt Creek, 10 mi upstream from Middle Fork, 14 mi southeast of Paducah, and 211.3 mi upstream from mouth of the Wichita River.

DRAINAGE AREA.--540 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1951-54 (occasional low-flow measurements), Jul 1961 to Sep 1982, Oct 1994 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,530 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation. One small diversion for irrigation above station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 3	1800	2,030	8.36	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	18	11	11	10	12	23	23	15	e32	9.5	9.2
2	15	e13	11	11	10	21	39	14	23	28	9.5	9.1
3	15	e11	11	11	10	13	24	14	681	29	9.5	9.1
4	17	11	10	11	10	12	16	13	227	e18	9.5	9.1
5	18	11	11	11	10	13	14	12	37	e12	9.5	9.1
6	20	11	11	11	10	13	14	12	19	11	9.5	9.1
7	20	12	11	11	9.5	12	13	11	16	10	9.5	8.9
8	21	12	11	11	10	12	13	12	16	10	9.5	8.7
9	51	12	13	11	10	13	12	11	15	10	9.5	8.7
10	36	12	13	11	10	13	11	12	14	10	9.5	8.6
11	29	12	11	11	10	12	11	12	15	10	9.5	8.6
12	32	12	11	11	10	12	10	11	15	10	9.5	8.6
13	36	12	11	11	10	13	10	11	19	13	9.5	8.6
14	e48	12	11	11	10	12	11	12	22	14	9.5	8.6
15	e42	12	11	11	10	16	9.9	12	19	12	9.2	8.6
16	e30	12	11	11	10	18	9.8	12	16	10	9.5	8.6
17	e16	13	10	11	11	16	10	12	19	10	9.5	8.6
18	e14	13	11	11	11	14	14	12	17	9.7	9.5	8.6
19	e12	13	10	11	11	14	30	12	24	9.5	9.5	8.6
20	11	12	10	11	11	14	39	12	19	9.5	9.5	8.6
21	12	12	10	11	11	14	e18	13	19	9.5	9.5	8.6
22	13	12	11	10	12	19	e13	14	22	9.5	9.5	8.2
23	14	11	11	10	11	419	e13	13	32	9.5	9.5	8.2
24	16	11	11	10	12	143	e12	14	36	9.5	9.4	8.2
25	18	11	10	10	13	28	e12	14	32	9.5	9.5	8.2
26	20	11	11	10	12	14	e12	37	23	9.5	9.5	8.2
27	19	11	11	10	11	13	11	58	28	9.5	9.5	8.2
28	17	11	11	10	13	13	11	21	39	9.5	9.5	8.2
29	17	11	11	10	13	12	12	16	42	9.5	9.3	8.2
30	15	11	11	10	---	12	27	15	41	9.5	9.2	8.2
31	14	---	11	10	---	12	---	13	---	9.5	9.5	---
TOTAL	672	358	339	331	311.5	974	474.7	480	1562	382.2	293.6	258.0
MEAN	21.7	11.9	10.9	10.7	10.7	31.4	15.8	15.5	52.1	12.3	9.47	8.60
MAX	51	18	13	11	13	419	39	58	681	32	9.5	9.2
MIN	11	11	10	10	9.5	12	9.8	11	14	9.5	9.2	8.2
AC-FT	1330	710	672	657	618	1930	942	952	3100	758	582	512

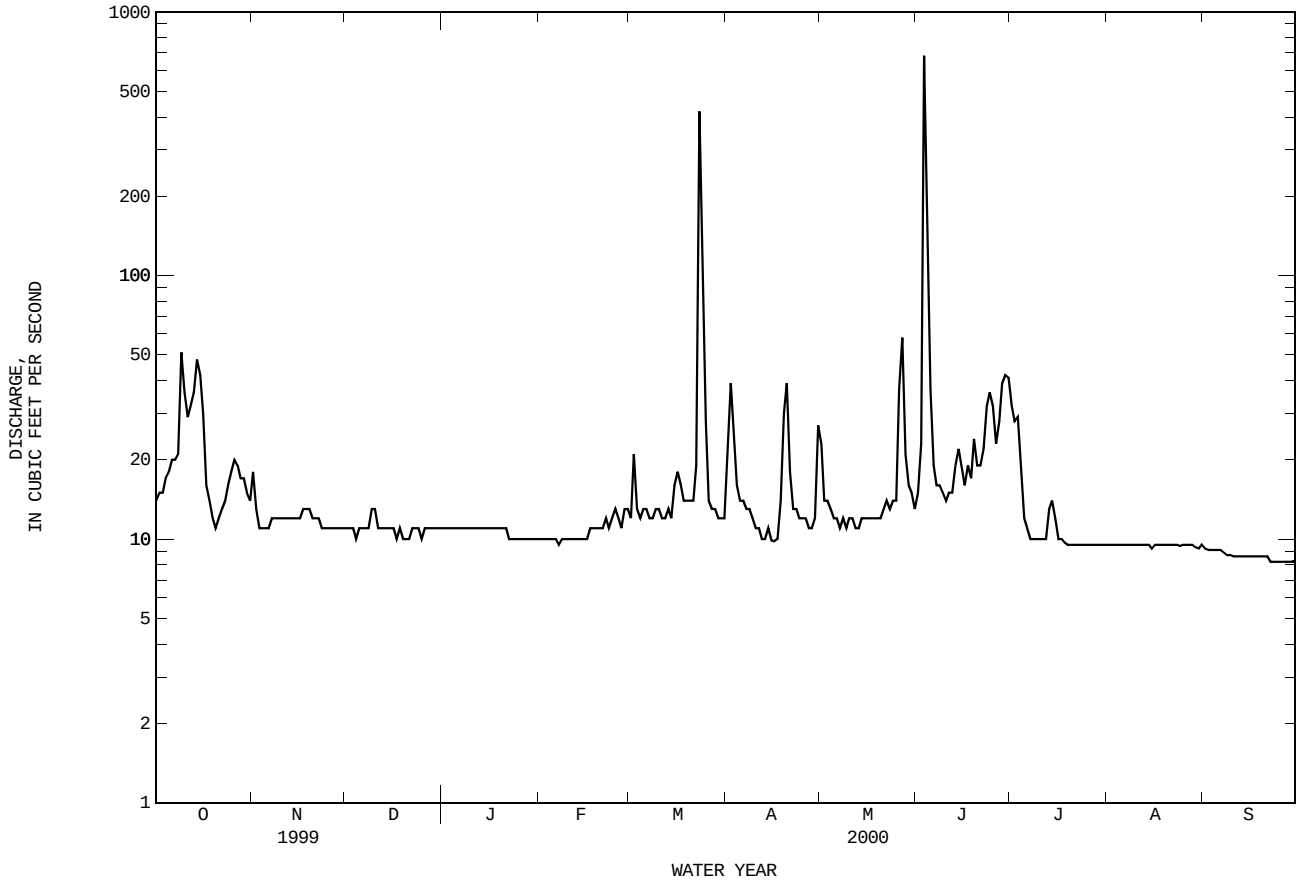
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2000h, BY WATER YEAR (WY)

MEAN	19.2	12.6	11.8	11.0	11.3	14.0	26.8	43.7	67.1	15.2	35.5	33.5
MAX	62.4	26.8	24.8	19.9	19.7	49.7	265	186	452	80.4	239	141
(WY)	1966	1998	1998	1996	1996	1998	1997	1982	1995	1975	1995	1974
MIN	3.08	3.94	4.58	4.84	4.77	4.93	5.30	3.63	10.1	2.12	1.98	2.06
(WY)	1964	1965	1965	1965	1965	1965	1964	1966	1964	1966	1964	1964

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1961 - 2000h	
ANNUAL TOTAL	12502		6436.0			
ANNUAL MEAN	34.3		17.6		25.3	
HIGHEST ANNUAL MEAN					75.5	1995
LOWEST ANNUAL MEAN					6.10	1964
HIGHEST DAILY MEAN	3800	May 27	681	Jun 3	8930	Jun 5 1995
LOWEST DAILY MEAN	10	Jan 17	8.2	Sep 22	.50	Sep 2 1964
ANNUAL SEVEN-DAY MINIMUM	10	Jan 16	8.2	Sep 22	.74	Aug 31 1964
INSTANTANEOUS PEAK FLOW			2030	Jun 3	18100	Jun 5 1995
INSTANTANEOUS PEAK STAGE			8.36	Jun 3	19.76	Jun 5 1995
ANNUAL RUNOFF (AC-FT)	24800		12770		18340	
10 PERCENT EXCEEDS	22		22		22	
50 PERCENT EXCEEDS	14		11		11	
90 PERCENT EXCEEDS	11		9.5		5.0	

e Estimated
h See PERIOD OF RECORD paragraph.

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued



07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1994 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1994 to current year.
WATER TEMPERATURE: Oct 1994 to current year.

INSTRUMENTATION.--Water-quality monitor since Oct 1994.

REMARKS.--Records fair. Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1995 to 2000. The standard error of estimate for dissolved solids is 5%, chloride is 7%, sulfate is 4% and for hardness is 8%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 28,600 microsiemens, May 25, 1995; minimum, 318 microsiemens, May 27, 1999.
WATER TEMPERATURE: Maximum, 34.5°C, Jul 15, 1997; minimum, 0.0°C, several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 27,000 microsiemens, Aug 29; minimum, 510 microsiemens, Jun 3.
WATER TEMPERATURE: Maximum, 34.4°C, Jul 15; minimum, 2.4°C, Jan 29.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT											
19...	1415	12	17900	7.9	14.5	12.6	135	2600	2500	780	168
NOV											
04...	1425	11	22400	7.6	15.5	13.6	156	2800	2600	820	178
DEC											
28...	1140	11	20900	7.9	7.3	12.3	116	2800	2600	820	174
JAN											
20...	1200	11	21700	7.5	10.1	9.7	97	2600	2500	780	168
FEB											
09...	1115	10	21100	7.7	11.4	9.1	95	2700	2500	790	170
APR											
06...	1155	14	13400	8.1	18.2	10.5	121	2000	1900	590	136
18...	1120	14	19100	8.1	21.0	8.9	113	2400	2300	700	157
MAY											
18...	1240	12	22900	8.0	22.1	10.5	138	3000	2900	880	192
JUL											
05...	1230	11	21700	7.8	29.1	8.7	129	2500	2400	720	159
24...	1155	9.5	23400	7.7	28.0	5.2	73	2700	2600	790	174
AUG											
14...	1140	9.5	25700	7.6	26.4	7.2	102	2900	2800	850	183
SEP											
05...	1130	9.1	26600	7.5	26.9	5.8	82	2800	2700	810	179

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT											
19...	3460	29	14	--	--	130	2100	6000	.57	7.0	12600
NOV											
04...	4040	33	15	--	--	140	2300	6700	.50	6.7	14100
DEC											
28...	4080	34	17	--	--	160	2400	6700	.52	9.1	14300
JAN											
20...	4060	34	15	--	--	140	2300	6400	.58	12	13900
FEB											
09...	4110	35	16	--	--	160	2200	6300	.49	8.8	13700
APR											
06...	2720	26	12	--	--	140	1900	4300	.58	7.0	9700
18...	3640	32	10	--	--	130	2200	5800	.55	6.0	12600
MAY											
18...	4580	36	16	--	--	130	2600	7100	.56	1.5	15400
JUL											
05...	3850	34	14	--	--	100	2200	6800	.51	2.2	13800
24...	4520	38	17	117	96	--	2600	7400	.47	3.2	15600
AUG											
14...	4840	39	17	115	94	--	2600	7600	1.0	4.9	16100
SEP											
05...	4550	38	17	116	95	--	2600	7900	.73	5.9	16100

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

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

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT											
19...	39	--	<.010	.652	.096	.90	.15	.24	<.050	<.050	.279
NOV											
04...	34	--	<.010	.599	.046	.80	.15	.20	<.050	<.050	<.010
DEC											
28...	22	1.13	.016	1.14	.057	--	--	E.07	<.050	<.050	<.010
JAN											
20...	34	1.05	.022	1.07	.120	1.4	.20	.32	<.050	<.050	<.010
FEB											
09...	16	1.17	.017	1.19	.090	1.5	.21	.30	<.050	<.050	<.010
APR											
06...	14	.628	.015	.643	.025	1.1	.44	.46	<.050	<.050	<.010
18...	21	.494	.011	.505	.050	.89	.34	.39	<.050	<.050	<.010
MAY											
18...	19	.371	.015	.386	.070	.81	.36	.43	<.050	<.050	<.010
JUL											
05...	22	.296	.013	.309	.078	.71	.32	.40	<.050	<.050	<.010
24...	13	.284	.014	.298	.062	.70	.34	.41	<.050	<.050	<.010
AUG											
14...	21	.337	.016	.353	.053	.82	.42	.47	<.050	<.050	<.010
SEP											
05...	16	.496	.017	.513	.103	.86	.25	.35	<.050	<.050	<.010

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
19...	.86	<3	<2	46	45	<1	<80	<1	<1.0	2	<100
NOV											
04...	--	<3	<2	35	35	<1	<96	7	7.3	2	<120
DEC											
28...	--	E2	<2	<100	25	<1	<80	<1	2.5	<1	<100
JAN											
20...	--	E2	E2	23	20	<1	<96	<4	5.4	4	<120
FEB											
09...	--	3	E2	21	22	<4	<96	<4	<4.0	<4	<120
APR											
06...	--	E2	E1	71	74	<1	1.1	<4	<3.2	<2	<5.2
18...	--	4	--	48	--	<1	--	<1	--	<5	--
MAY											
18...	--	4	E1	<100	36	<1	<.70	4	<4.0	20	<6.5
JUL											
05...	--	E2	--	63	--	<1	--	<4	--	<5	--
24...	--	4	3	42	41	1	<.50	<5	<4.0	<6	<6.5
AUG											
14...	--	6	--	39	--	<1	--	2	--	<6	--
SEP											
05...	--	3	2	35	2.3	M	<1.4	<5	<4.0	<6	<6.5

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

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

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
19...	<310	<100	E1	<1000	E22	E19	<.10	<.2	<390	<400	4
NOV											
04...	<310	<120	2	<1200	E20	<26	<.10	<.2	<390	<480	6
DEC											
28...	<20	<100	3	<1000	E3	22	<.30	E.1	<39	<400	10
JAN											
20...	40	<120	6	<1200	48	40	<.60	<.2	<39	<480	8
FEB											
09...	40	<120	<4	<1200	42	47	<.30	<.2	<39	<480	12
APR											
06...	250	<90	<2	<4.0	68	58	<.30	<.2	<4	<5.6	7
18...	<20	--	<4	--	56	--	<.30	--	<39	--	10
MAY											
18...	<20	<120	<5	<5.0	27	9.4	<.30	<.2	<9	<7.0	9
JUL											
05...	<160	--	<4	--	41	--	<.30	--	--	--	5
24...	<160	<100	<5	<5.0	35	50	<.30	<.2	<9	<7.0	5
AUG											
14...	<460	--	<5	--	48	--	<.30	--	--	--	5
SEP											
05...	<310	<10	<10	<5.0	53	2.5	<.30	<.2	<9	<7.0	9

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
OCT											
19...	E2	<1	<4.0	<310	<200	--	--	--	--	--	--
NOV											
04...	4	<1	<1.0	<310	<240	--	--	--	--	--	--
DEC											
28...	8	<1	<1.0	<31	<200	--	--	--	--	--	--
JAN											
20...	10	<4	<1.0	<31	<240	--	--	--	--	--	--
FEB											
09...	7	<4	<4.0	<31	<240	--	--	--	--	--	--
APR											
06...	6	<4	<4.0	<31	<180	--	--	--	--	--	--
18...	--	<4	--	<31	--	--	--	--	--	--	--
MAY											
18...	5	<5	<5.0	<31	<240	<.040	<.05	<1.00	<.100	<.100	<.100
JUL											
05...	--	<4	--	430	--	--	--	--	--	--	--
24...	4	<5	<5.0	<160	<200	--	--	--	--	--	--
AUG											
14...	--	<5	--	<460	--	<.040	<.10	<1.00	<.100	<.100	<.100
SEP											
05...	10	<5	<5.0	<310	<20	--	--	--	--	--	--

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

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

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT											
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
28...	--	--	--	--	--	--	--	--	--	--	--
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
09...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	25.0	<2.00
JUL											
05...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	123	<2.00
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
19...	--	--	--	--	--	--	--	--	--	--	--
NOV											
04...	--	--	--	--	--	--	--	--	--	--	--
DEC											
28...	--	--	--	--	--	--	--	--	--	--	--
JAN											
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
09...	--	--	--	--	--	--	--	--	--	--	--
APR											
06...	--	--	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18...	<.100	<.030	26.0	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUL											
05...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	<.100	<.030	127	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP											
05...	--	--	--	--	--	--	--	--	--	--	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	672	18690	12560	22790	5700	10270	2200	4020	2600
NOV.	1999	358	21220	14100	13630	6500	6270	2400	2310	2800
DEC.	1999	339	20370	13610	12450	6200	5670	2300	2150	2700
JAN.	2000	331	21580	14310	12790	6600	5900	2400	2150	2800
FEB.	2000	311.5	21340	14170	11920	6500	5480	2400	2020	2800
MAR.	2000	974	11190	7740	20360	3300	8700	1500	3940	1800
APR.	2000	474.7	17800	12020	15400	5400	6890	2200	2760	2500
MAY	2000	480	18540	12410	16090	5600	7300	2200	2800	2500
JUNE	2000	1562	12730	8720	36790	3800	16000	1600	6930	1900
JULY	2000	382.2	21100	14030	14480	6400	6650	2400	2460	2800
AUG.	2000	293.6	24580	16010	12690	7600	6040	2500	1990	2900
SEPT	2000	258	25720	16640	11590	8000	5580	2500	1770	2900
TOTAL		6436	**	**	201000	**	90740	**	35300	**
WTD.AVG.		18	17230	11570	**	5200	**	2000	**	2400

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22300	22000	22200	23200	21800	22600	20800	20400	20600	21600	21100	21300
2	22600	21900	22100	---	---	e22000	21000	20500	20700	21300	20800	21100
3	22600	22100	22300	---	---	e22200	21100	20400	20800	21800	20800	21500
4	22600	21600	22000	---	---	e22400	20700	20100	20400	22000	21500	21700
5	21800	21400	21600	22600	22100	22400	20600	20200	20400	22000	21600	21800
6	21600	21300	21400	22300	22000	22100	20800	20300	20600	21800	21500	21700
7	22200	21400	21700	22300	21700	22000	20500	20200	20400	22400	21600	21900
8	22300	21200	21800	22000	21400	21700	20800	20200	20600	21800	21100	21400
9	27000	17400	22700	21600	21200	21400	20600	19200	19800	21800	21300	21600
10	22600	9190	13500	21800	21300	21500	19800	18800	19300	22200	21400	21700
11	23500	15900	20100	21800	21400	21600	20300	19700	20000	21700	21400	21500
12	15900	13500	14400	21400	21200	21300	20200	19900	20000	21800	21500	21600
13	13500	13300	13400	21400	21200	21300	20000	19700	20000	22000	21600	21800
14	---	---	e13700	21300	21200	21300	20000	19700	19800	22000	21600	21800
15	---	---	e14600	21300	21000	21200	20300	19800	20000	21900	21400	21600
16	---	---	e16200	21000	20700	20900	20500	19900	20200	21700	21400	21500
17	---	---	e17000	20800	20600	20700	20200	19900	20000	21900	21300	21600
18	---	---	e17500	20700	20400	20600	20400	19900	20200	21600	21300	21500
19	---	---	e17900	20900	20400	20700	20400	19700	20100	21900	21300	21600
20	18700	17800	18300	20700	20200	20500	20200	19600	19900	21800	21400	21600
21	19400	18700	19100	20600	20100	20400	20200	19800	20000	21600	21300	21500
22	20100	19400	19800	20900	20400	20600	20700	19900	20300	21900	21300	21600
23	20100	19900	20000	20900	20400	20600	20800	20200	20600	22000	21300	21600
24	20300	20000	20200	20900	20500	20800	20800	20500	20700	21800	21400	21600
25	20500	20100	20200	20700	20300	20500	20700	20300	20500	21600	21500	21600
26	21000	20400	20600	20700	20500	20600	21000	20600	20800	22200	21600	21800
27	21300	20800	21000	20800	20300	20500	21100	20800	20900	22000	21300	21800
28	21500	21200	21300	20800	20400	20600	20900	20600	20800	22100	21600	21800
29	22000	21100	21600	20600	20300	20500	21100	20700	20900	21600	21100	21500
30	22200	20700	21700	20600	20400	20500	21200	20800	21100	21400	21000	21200
31	23400	22200	22900	---	---	---	21500	21200	21300	21300	21000	21100
MONTH	---	---	19400	---	---	21200	21500	18800	20400	22400	20800	21600

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	21300	21000	21100	21600	21100	21400	13400	13100	13300	16100	6290	9640
2	21500	21000	21200	21100	16900	18500	13800	9750	11500	17700	10100	15000
3	21500	21000	21300	18900	18000	18600	13000	9980	11900	18200	16800	17500
4	21700	21500	21600	18000	17100	17400	11800	10300	10700	20000	18200	19000
5	21800	21400	21600	17400	15300	16000	---	---	e12600	20500	20000	20300
6	21600	21400	21400	17700	16300	16900	---	---	e14000	20900	20400	20600
7	22000	21400	21600	18800	17700	18100	16600	15800	16200	21300	20700	21000
8	21600	21400	21500	19300	18700	19100	17600	16600	17200	21400	21100	21200
9	21500	21200	21400	19700	19000	19300	18300	17400	18100	21800	21400	21600
10	21600	21100	21300	20200	19100	19700	19100	18300	18700	21900	21400	21600
11	21600	21200	21300	20200	19100	19800	19700	17200	19200	22200	21700	21900
12	21500	21200	21400	20100	18600	19700	18700	18000	18400	22900	22200	22800
13	21500	21200	21300	19700	18400	19200	19500	18400	18900	23100	22400	22800
14	21800	21200	21500	20000	18000	19300	19900	19500	19700	22800	22400	22600
15	21600	21200	21400	19900	18500	19500	19800	17700	19100	23000	22400	22800
16	21500	20800	21300	20200	18900	19600	17700	16900	17100	22800	22500	22700
17	21500	20800	21300	20100	18800	19700	18500	17400	17800	22900	22800	22900
18	21500	21200	21400	19800	18800	19400	20600	18500	19500	23200	22800	23000
19	21900	21200	21600	19900	18400	19500	21000	20400	20700	23300	22700	23100
20	21500	21200	21300	19900	18200	19400	21000	20600	20900	23300	22900	23100
21	21300	20800	21100	19500	19200	19400	21200	20600	21000	23100	22800	22900
22	21500	20900	21300	19600	15000	19100	21500	21100	21300	23300	22600	23000
23	21700	21200	21400	19600	2270	9200	21800	21200	21400	23100	22600	22900
24	21500	20700	21100	2930	2190	2470	22200	20900	21600	23300	23100	23200
25	21100	20300	21000	4710	2930	3770	21400	20900	21200	23400	21200	23100
26	21700	21100	21500	6640	4710	5650	22400	21000	21300	23100	18600	21800
27	22000	21100	21500	8400	6640	7520	21700	21200	21500	23800	8290	13600
28	21300	20900	21100	10000	8400	9240	22000	21300	21600	8290	6980	7290
29	21400	21100	21300	11400	10000	10700	21500	21000	21300	10500	7740	9110
30	---	---	---	12400	11400	11900	22000	13100	19800	12700	10500	11600
31	---	---	---	13200	12400	12800	---	---	---	15400	12700	14000
MONTH	22000	20300	21300	21600	2190	15900	---	---	18200	23800	6290	19600

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	18000	15400	16700	18800	18300	18400	22800	22100	22500	26400	26000	26200
2	18800	17700	18300	20000	18800	19400	23000	22400	22700	26400	25800	26100
3	18800	510	11100	21000	20000	20700	23000	22400	22800	26400	25900	26100
4	2970	767	1810	21900	21000	21400	23300	22600	22900	26700	26000	26400
5	5880	2970	4360	22000	21400	21800	23200	22800	23000	26800	25800	26600
6	8750	5880	7250	21600	21000	21200	23400	22900	23300	26800	26200	26500
7	10900	8750	9840	21300	20700	21000	24000	23400	23700	26400	25800	26100
8	12900	10900	11800	21600	21100	21300	24300	23600	23900	26100	25300	25700
9	14600	12900	13800	22100	21400	21600	24000	23300	23700	25800	25100	25500
10	15800	14600	15300	22300	21500	21900	24400	23700	24000	25400	24900	25200
11	16500	15800	16200	22300	21300	21700	24400	23800	24200	25800	25100	25600
12	17200	16500	16900	22000	20900	21500	24500	24100	24300	25900	25500	25700
13	18100	17200	17700	21600	20200	21300	24300	23800	24100	25700	25400	25600
14	18800	18100	18500	22500	20800	22000	25900	23800	25000	25600	25200	25400
15	19600	18800	19400	22600	17600	20000	25800	25200	25400	25300	24900	25100
16	20700	19400	20000	17700	17100	17500	25800	25200	25600	25300	24900	25100
17	21100	20000	20600	19500	17500	18500	25700	24800	25300	25100	24700	25000
18	20700	20300	20400	20900	19500	20200	25500	24600	25000	25400	25000	25200
19	20600	19600	20300	21700	20900	21500	25500	24700	25000	25500	25000	25300
20	21100	20600	20800	21900	21100	21600	25300	24100	24900	25500	25100	25300
21	21100	20800	20900	22000	21400	21700	25700	25100	25400	25600	25300	25500
22	21100	20100	20700	22500	21600	22100	25500	25100	25400	25600	25300	25500
23	20800	20200	20400	23000	22400	22700	25400	24900	25100	25600	25400	25500
24	21400	20800	21100	23600	22500	23300	25100	24600	24900	26300	25500	25900
25	22200	21400	21800	23600	22900	23300	25000	24500	24700	26500	25900	26200
26	22600	22000	22300	23400	22500	22900	25000	24600	24800	26500	25900	26200
27	22500	21000	22100	23300	22600	22900	25200	24700	25000	26400	25900	26100
28	22400	21100	22100	23200	22200	22800	26700	24700	25800	26100	25400	25800
29	22100	19200	21000	23400	22300	22800	27000	26500	26800	25700	25200	25500
30	19400	18400	19100	23300	22300	22800	26700	26100	26500	25700	25300	25500
31	---	---	---	22700	22200	22500	26600	26200	26500	---	---	---
MONTH	22600	510	17100	23600	17100	21400	27000	22100	24600	26800	24700	25700

e Estimated

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.9	16.0	19.1	18.5	14.2	16.3	14.8	11.3	13.0	12.1	7.9	9.9
2	21.2	16.8	19.4	---	---	---	15.6	12.6	13.9	12.3	8.9	10.7
3	20.3	16.7	18.6	---	---	---	14.0	10.9	12.6	11.1	6.8	9.2
4	18.8	15.3	17.2	---	---	---	12.8	9.2	11.0	8.0	4.3	6.3
5	21.1	15.3	18.2	18.4	13.2	15.9	9.5	6.8	8.2	8.3	4.3	6.3
6	23.3	17.8	20.5	19.8	15.6	17.7	9.2	5.2	7.4	8.4	4.8	6.7
7	22.6	18.4	20.7	20.0	15.9	18.1	10.5	6.5	8.5	8.9	5.1	7.1
8	22.5	18.9	20.7	19.5	16.1	17.8	12.1	7.8	9.8	11.7	8.2	9.7
9	22.3	18.5	20.4	19.4	15.9	17.8	10.9	6.4	8.2	11.0	7.8	9.3
10	23.6	18.3	20.9	20.0	16.0	18.1	8.8	4.9	6.9	11.0	6.5	8.8
11	24.6	19.1	21.6	20.1	15.9	18.2	9.5	6.2	7.8	11.5	7.5	9.5
12	24.4	19.4	22.0	20.0	15.8	18.1	9.7	7.9	8.7	12.4	7.9	10.1
13	24.4	19.3	21.9	20.2	16.1	18.3	9.7	6.0	8.0	11.1	8.0	9.7
14	---	---	---	20.0	16.2	18.3	9.1	6.3	7.7	10.1	6.7	8.6
15	---	---	---	19.2	15.6	17.6	8.0	4.4	6.2	12.7	7.6	10.0
16	---	---	---	18.7	14.6	16.9	7.3	4.4	5.9	14.2	10.5	12.3
17	---	---	---	17.9	14.0	16.2	8.8	5.6	7.1	14.9	10.7	12.7
18	---	---	---	17.8	14.8	16.4	8.9	6.0	7.5	13.4	10.7	12.2
19	---	---	---	16.8	13.6	15.4	8.9	6.3	7.6	13.9	9.5	11.8
20	17.0	11.7	14.6	15.4	11.8	13.8	8.0	5.6	7.0	12.1	9.1	10.5
21	18.7	12.8	15.8	15.6	11.9	13.9	8.8	6.1	7.3	11.1	7.7	9.5
22	18.9	14.0	16.7	15.2	11.9	13.6	8.7	5.6	7.1	12.4	9.2	10.7
23	18.6	14.1	16.6	14.4	11.5	12.9	9.0	4.9	7.0	12.4	8.6	10.6
24	18.3	13.6	16.2	12.1	9.5	11.0	9.7	5.5	7.5	10.4	7.6	9.1
25	18.6	14.2	16.6	11.8	8.3	10.2	9.2	5.8	7.6	8.9	7.3	8.2
26	19.1	14.1	16.8	12.5	8.1	10.4	11.5	8.1	9.6	7.9	4.8	6.4
27	19.3	14.7	17.2	13.8	9.4	11.6	10.9	7.5	9.2	5.1	4.3	4.7
28	20.5	16.8	18.6	14.0	10.3	12.2	11.2	6.6	8.9	4.7	3.9	4.3
29	21.7	17.3	19.4	13.6	10.4	12.0	10.9	7.3	9.2	7.2	2.4	4.8
30	18.9	16.1	17.4	14.0	11.1	12.4	11.2	8.1	9.6	7.2	3.4	5.3
31	16.1	14.9	15.6	---	---	---	11.0	7.1	9.1	7.7	3.9	5.8
MONTH	---	---	---	---	---	---	15.6	4.4	8.6	14.9	2.4	8.7

07311600 NORTH WICHITA RIVER NEAR PADUCAH, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.6	6.4	7.4	17.3	12.5	15.0	14.5	11.9	12.7	22.7	16.7	19.4
2	10.0	4.9	7.5	18.2	13.0	15.7	17.9	11.3	14.5	21.9	18.4	19.8
3	11.7	6.3	9.0	15.6	11.4	13.6	17.3	13.8	15.3	25.5	17.8	21.3
4	9.9	7.4	8.7	17.6	10.6	13.9	19.5	11.6	15.4	25.8	20.2	22.6
5	10.4	6.0	8.1	18.1	12.5	15.2	---	---	---	26.4	21.8	23.8
6	11.0	6.7	8.8	20.2	14.9	17.5	---	---	---	30.5	22.6	26.2
7	12.5	7.1	9.7	20.7	15.4	18.3	23.9	18.9	21.2	29.7	23.5	26.6
8	13.6	8.1	10.9	17.6	12.3	15.0	21.9	15.4	18.5	29.4	23.2	26.2
9	13.8	9.8	11.8	18.7	12.5	15.5	21.7	15.3	18.3	27.5	21.8	24.8
10	15.5	10.3	12.9	18.9	13.9	16.0	22.5	17.3	19.6	28.0	21.5	24.6
11	13.3	10.1	11.7	17.4	11.4	14.4	20.6	14.7	18.0	29.5	23.2	26.3
12	12.2	7.6	10.1	18.0	11.3	14.6	16.7	14.6	15.5	26.4	22.6	24.5
13	13.9	9.7	11.6	19.4	12.6	16.0	21.6	14.3	17.2	24.7	18.9	21.9
14	13.6	9.2	11.4	22.2	15.3	18.6	25.1	17.8	21.0	25.4	18.4	21.8
15	15.1	9.7	12.4	23.3	16.9	20.0	25.4	19.8	22.0	26.9	19.7	23.2
16	14.6	10.5	12.8	19.9	10.4	14.6	23.7	17.2	20.4	27.7	22.5	24.8
17	16.9	11.8	14.2	12.1	8.7	10.1	24.3	17.9	20.9	25.0	21.9	23.3
18	15.6	12.1	13.7	15.4	8.6	11.7	27.4	20.0	23.4	24.7	19.8	22.1
19	13.7	9.2	11.6	17.7	10.0	13.8	27.5	22.3	24.5	21.6	18.4	19.3
20	13.2	10.4	11.6	19.2	11.9	15.6	24.3	18.5	21.6	25.4	16.5	20.7
21	15.7	10.9	13.1	16.5	15.2	15.7	23.9	17.8	20.9	28.9	21.1	24.8
22	16.2	13.9	15.0	15.2	14.0	14.4	22.1	18.4	20.1	29.4	22.5	26.0
23	17.5	11.9	14.8	16.4	13.0	14.6	23.5	17.1	20.2	29.7	23.2	26.5
24	19.2	12.6	16.0	19.4	14.0	16.5	26.0	18.2	21.8	31.4	24.1	27.6
25	18.6	15.2	16.8	21.1	15.5	18.4	26.1	19.8	23.1	30.4	25.1	27.5
26	16.9	12.0	14.5	24.5	18.3	21.2	27.6	20.3	24.0	29.8	23.1	26.4
27	16.7	10.9	13.8	24.3	18.9	21.4	25.1	21.7	23.3	29.0	24.9	26.9
28	15.9	11.9	13.9	21.7	18.6	20.2	25.6	18.7	22.1	30.7	23.8	27.2
29	17.3	12.1	14.6	20.8	17.2	18.9	26.2	20.0	22.9	31.5	24.8	28.1
30	---	---	---	21.1	15.0	17.8	24.4	18.0	21.4	31.9	25.6	28.5
31	---	---	---	17.6	14.5	15.8	---	---	---	31.1	24.8	27.8
MONTH	19.2	4.9	12.0	24.5	8.6	16.1	---	---	---	31.9	16.5	24.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	29.7	24.2	26.9	27.2	25.2	26.1	31.9	25.0	28.5	30.3	24.5	27.5
2	26.9	24.4	25.3	32.2	24.6	28.0	32.3	25.6	29.1	30.2	25.1	27.8
3	24.4	21.5	22.7	33.2	27.3	30.1	32.0	26.2	29.2	30.3	25.1	27.9
4	26.2	21.6	23.5	32.7	26.9	29.8	32.1	26.7	29.5	31.3	25.3	28.4
5	27.6	22.6	25.0	32.8	26.4	29.6	31.6	26.4	29.1	31.9	25.8	28.7
6	28.5	22.9	25.6	33.1	26.6	29.8	31.8	26.1	29.1	30.9	26.0	28.5
7	29.8	23.5	26.3	33.3	26.9	30.1	31.8	26.6	29.3	29.4	25.0	27.4
8	29.7	23.4	26.3	33.3	27.8	30.6	32.0	26.4	29.2	29.5	24.5	27.1
9	27.6	24.2	25.7	33.0	27.3	30.2	31.5	26.1	28.9	29.9	24.2	27.1
10	29.7	24.1	26.4	32.8	26.8	30.0	31.6	26.2	29.0	29.9	25.0	27.4
11	29.6	24.9	26.9	33.5	27.4	30.5	32.0	25.8	29.1	28.2	24.9	26.6
12	31.2	25.1	27.9	32.6	28.2	30.4	32.2	26.1	29.3	29.0	23.8	26.4
13	30.2	25.4	27.6	31.1	27.6	29.1	32.3	26.5	29.4	29.8	24.5	27.1
14	27.6	24.0	25.6	33.6	26.5	29.7	30.9	25.5	28.3	30.1	24.4	27.4
15	29.7	22.1	25.9	34.4	27.8	31.0	31.0	24.9	28.2	28.1	24.0	26.3
16	27.2	24.5	26.0	33.8	28.6	31.2	30.9	26.0	28.6	27.5	22.4	25.1
17	24.5	21.0	22.0	32.5	27.4	30.0	31.6	25.7	28.6	26.9	22.0	24.6
18	21.6	20.0	20.8	32.9	26.3	29.7	31.5	25.2	28.5	26.5	20.9	23.9
19	24.6	20.9	22.2	33.5	27.1	30.4	30.9	26.3	28.7	26.2	20.9	23.7
20	28.8	22.8	25.4	33.5	27.4	30.7	30.3	24.7	27.6	24.5	20.5	22.8
21	28.9	25.0	26.8	32.7	26.6	29.9	30.7	25.1	28.0	24.2	19.4	21.8
22	31.3	24.8	28.0	31.5	26.3	28.9	30.4	25.2	27.9	26.8	21.4	23.9
23	31.0	26.6	28.7	32.8	26.1	29.2	30.7	25.2	28.1	25.2	21.7	23.3
24	33.1	26.2	29.5	32.9	26.1	29.4	31.9	25.4	28.7	22.0	18.0	20.0
25	33.2	27.8	30.5	29.8	25.9	28.0	32.1	26.0	29.2	19.9	14.6	17.4
26	29.9	25.8	27.1	32.0	25.6	28.7	31.6	26.4	29.1	20.5	14.2	17.6
27	28.3	24.2	26.1	29.9	26.8	28.5	31.4	26.1	28.9	21.8	15.1	18.7
28	27.9	24.8	26.2	30.5	25.2	27.8	30.8	25.9	28.5	22.6	16.4	19.8
29	26.5	24.8	25.6	31.0	26.1	28.4	30.5	25.5	28.3	22.7	17.2	20.2
30	28.5	23.9	26.2	30.6	25.5	28.1	30.3	25.4	28.0	22.6	17.5	20.3
31	---	---	---	31.0	25.4	28.2	29.1	25.8	27.5	---	---	---
MONTH	33.2	20.0	26.0	34.4	24.6	29.4	32.3	24.7	28.7	31.9	14.2	24.5

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07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX

LOCATION.--Lat 33°47′45", long 100°04′29", King County, Hydrologic Unit 11130204, on right bank 100 ft downstream from inflatable dam. One mile downstream from ranch road crossing, 0.71 miles upstream from Forrer Creek, 12 miles upstream from confluence with North Wichita River and 19 miles northeast of Guthrie.

DRAINAGE AREA.--50.3 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1994 to Sep 1996 (discharges below 30 ft^3/s), Oct 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,583.90 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation or diversions. Low flow is maintained by springs that enter river in the vicinity of gage. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.1	4.8	5.5	7.3	6.7	4.1	6.9	6.2	6.2	6.6	4.9	6.0
2	3.9	5.2	5.7	7.5	7.1	13	6.8	6.4	14	6.0	5.1	6.0
3	3.9	5.2	5.8	7.5	6.7	5.9	6.7	6.1	10	5.6	5.1	5.8
4	3.7	6.2	6.3	7.3	6.6	4.5	6.7	6.0	9.3	5.5	5.2	5.8
5	3.7	6.1	6.7	7.3	6.7	4.1	6.5	5.9	6.7	5.5	5.3	5.8
6	3.7	4.8	7.8	7.6	6.8	4.0	6.5	5.7	5.8	5.5	5.5	5.8
7	3.8	4.7	8.6	8.1	6.9	4.0	6.5	5.6	5.7	5.4	5.6	5.9
8	4.1	4.8	6.5	8.1	6.9	4.2	6.7	5.6	6.1	5.4	5.6	6.0
9	4.1	5.0	8.0	7.7	6.9	4.5	6.7	5.6	6.3	5.4	5.6	6.0
10	4.2	5.1	6.9	7.2	6.9	4.8	6.8	5.5	6.3	5.6	5.6	5.9
11	4.4	5.1	6.5	7.1	e6.7	4.9	7.1	5.4	6.4	5.6	5.7	5.8
12	4.4	5.1	6.4	7.0	6.5	5.3	7.3	5.3	6.3	5.7	5.9	5.8
13	4.5	5.2	6.6	6.8	7.0	5.4	7.0	5.3	6.3	11	5.8	5.8
14	4.4	5.2	6.6	e6.4	7.1	5.5	6.9	5.3	6.1	5.7	5.8	5.8
15	4.4	5.2	6.4	6.2	6.8	5.5	9.2	5.3	6.0	5.6	5.8	5.8
16	4.8	5.3	6.7	6.2	6.2	6.1	9.9	5.3	6.0	5.6	5.8	5.8
17	5.4	5.6	6.7	6.4	6.2	7.2	6.4	5.3	14	5.6	5.8	5.8
18	5.9	5.4	6.8	6.0	6.6	6.6	6.3	5.3	7.2	5.6	5.9	5.8
19	6.0	e5.3	7.2	6.4	7.0	6.8	6.3	e5.3	21	5.5	6.0	6.0
20	6.3	5.3	8.5	7.0	7.0	6.3	6.3	5.5	7.4	5.3	6.0	6.0
21	6.3	5.5	9.4	6.6	6.6	6.4	6.3	5.7	6.2	5.2	6.0	5.9
22	5.6	5.7	7.2	8.4	7.8	33	7.2	5.7	5.8	5.0	6.0	5.9
23	7.8	6.4	7.0	7.4	8.2	514	13	5.7	5.6	4.8	6.0	6.0
24	8.3	6.7	6.9	6.0	6.2	24	7.7	5.8	5.6	4.6	6.0	5.9
25	6.7	7.4	7.0	6.3	6.2	9.8	6.9	6.9	5.6	4.5	6.1	6.0
26	5.2	e6.7	7.3	6.5	5.3	9.2	6.8	15	5.7	4.3	6.1	6.1
27	4.9	5.3	7.1	6.6	4.8	8.5	6.6	8.6	5.9	4.3	6.1	6.0
28	5.9	5.3	7.2	6.4	4.9	8.2	6.3	6.9	6.0	4.3	6.1	6.0
29	4.8	5.3	7.3	6.3	4.8	7.9	6.1	6.0	6.3	4.4	6.1	5.9
30	4.6	5.4	7.1	6.3	---	e7.6	5.9	5.8	6.1	4.8	6.1	5.8
31	4.6	---	7.1	6.3	---	7.2	---	5.8	---	4.9	6.1	---
TOTAL	154.4	164.3	216.8	214.2	190.1	748.5	212.3	189.8	221.9	168.8	178.7	176.9
MEAN	4.98	5.48	6.99	6.91	6.56	24.1	7.08	6.12	7.40	5.45	5.76	5.90
MAX	8.3	7.4	9.4	8.4	8.2	514	13	15	21	11	6.1	6.1
MIN	3.7	4.7	5.5	6.0	4.8	4.0	5.9	5.3	5.6	4.3	4.9	5.8
AC-FT	306	326	430	425	377	1480	421	376	440	335	354	351

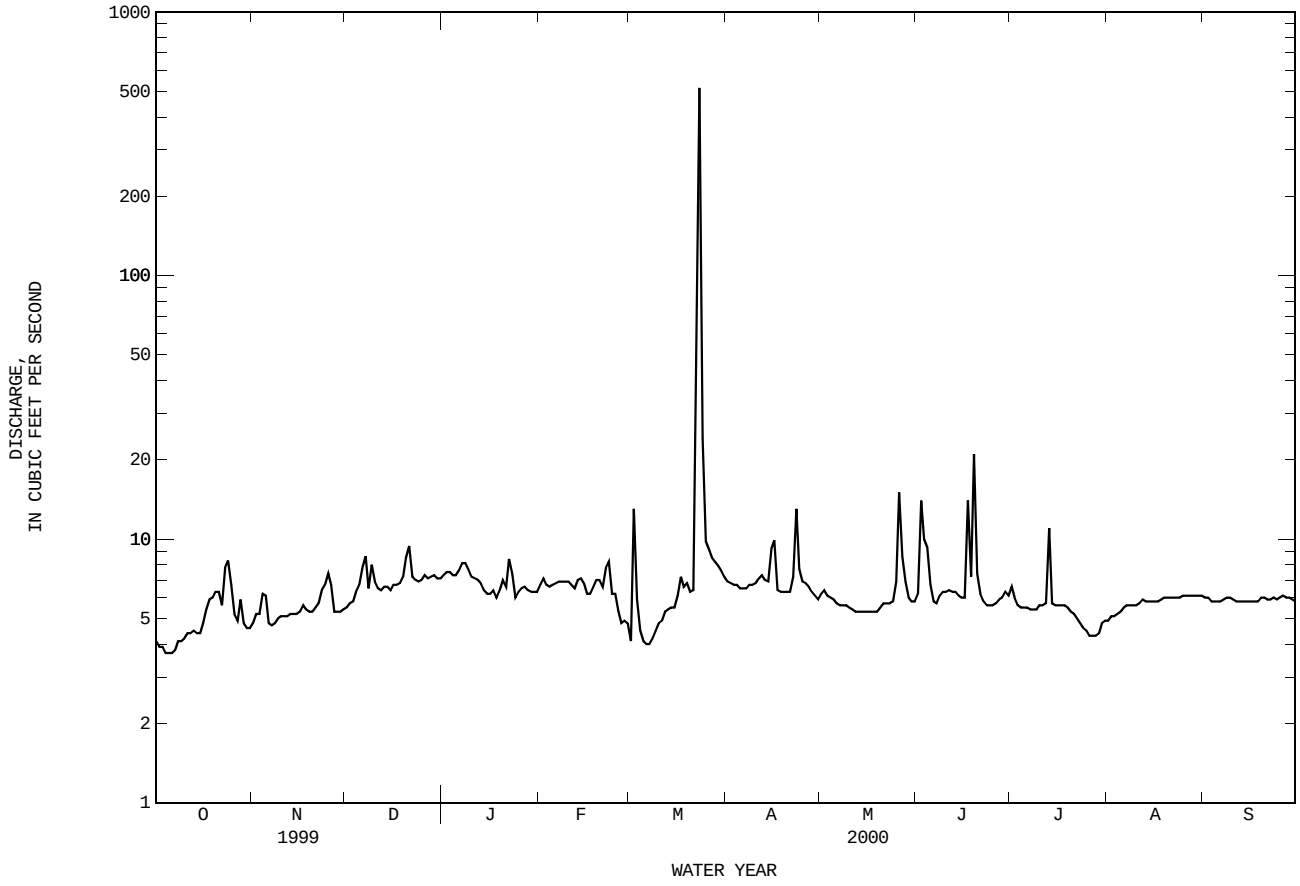
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1994 - 2000h, BY WATER YEAR (WY)

MEAN	6.53	6.11	6.32	6.27	6.32	9.22	6.84	7.39	6.29	6.54	6.60	6.40
MAX	7.71	7.44	8.22	7.26	7.58	24.1	7.77	11.5	7.59	8.25	9.65	8.57
(WY)	1996	1996	1998	1998	1997	2000	1999	1999	1997	1999	1994	1995
MIN	4.98	4.85	4.79	4.70	4.73	4.61	5.76	5.55	4.31	5.01	4.71	3.79
(WY)	2000	1999	1999	1995	1995	1995	1998	1998	1998	1998	1998	1999

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1994 - 2000h	
ANNUAL TOTAL	2390.5		2836.7			
ANNUAL MEAN	6.55		7.75		6.72	
HIGHEST ANNUAL MEAN					7.75	2000
LOWEST ANNUAL MEAN					6.20	1998
HIGHEST DAILY MEAN	102	May 10	514	Mar 23	514	Mar 23 2000
LOWEST DAILY MEAN	1.8	Sep 19	3.7	Oct 4	1.8	Sep 19 1999
ANNUAL SEVEN-DAY MINIMUM	3.5	Sep 18	3.8	Oct 1	3.5	Sep 18 1999
INSTANTANEOUS PEAK FLOW			1410	Mar 23	5630	Aug 2 1995
INSTANTANEOUS PEAK STAGE			13.34	Mar 23	16.02	Aug 2 1995
ANNUAL RUNOFF (AC-FT)	4740		5630		4870	
10 PERCENT EXCEEDS	7.4		7.5		8.4	
50 PERCENT EXCEEDS	5.5		6.0		6.1	
90 PERCENT EXCEEDS	4.2		4.8		4.4	

e Estimated
h See PERIOD OF RECORD paragraph

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1993 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1994 to current year.
TEMPERATURE: Oct 1994 to current year.

INSTRUMENTATION.--Water-quality monitor since Oct 1994.

REMARKS.--Records fair. Interruption in record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1995 to 2000. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 3% and for hardness is 6%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 18,900 microsiemens, May 26, 1996; minimum, 210 microsiemens, May 10, 1999.
TEMPERATURE: Maximum, 35.0°C, Jul 9, 10, 1995; minimum, 0.0°C, Dec 22, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 13,900 microsiemens, Oct 1-4; minimum, 1,260 microsiemens, Mar 23.
WATER TEMPERATURE: Maximum, 32.5°C, May 6; minimum, 1.2°C, Jan 29.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT											
26...	1110	5.0	12800	8.0	15.0	9.6	102	2500	2400	780	139
NOV											
26...	1055	6.7	12900	7.6	9.0	16.1	154	2700	2500	850	143
JAN											
04...	1230	7.3	12500	7.9	6.8	12.6	112	2600	2400	800	139
20...	1400	7.0	12800	7.8	10.1	10.0	96	2400	2200	740	140
FEB											
29...	1445	4.8	13100	8.3	14.6	12.6	137	2500	2400	790	142
APR											
03...	1135	6.8	12400	8.2	13.0	9.4	98	2600	2500	810	153
20...	1205	6.3	12300	8.0	19.4	9.3	109	2500	2300	750	146
MAY											
18...	1110	5.3	12800	7.9	20.5	11.3	138	2700	2600	830	157
JUN											
14...	1155	6.1	12900	7.8	25.7	7.2	97	2500	2400	760	149
JUL											
18...	1445	5.6	12900	7.7	30.1	6.0	86	2400	2300	720	139
AUG											
15...	1155	5.8	13000	7.8	27.9	7.6	104	2400	2300	730	139
SEP											
13...	1215	5.8	12600	7.8	26.8	7.6	102	2500	2300	760	141

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT											
26...	1920	17	11	--	--	130	2400	3400	.55	16	8680
NOV											
26...	1980	17	13	--	--	190	2500	3200	.50	25	8830
JAN											
04...	2000	17	11	--	--	200	2400	3200	.48	26	8640
20...	1990	18	11	--	--	180	2300	3300	.54	25	8640
FEB											
29...	2050	18	12	--	--	160	2400	3300	.55	5.1	8750
APR											
03...	2010	17	12	--	--	190	2300	3000	.52	9.0	8400
20...	2020	18	12	--	--	160	2400	3100	.54	8.3	8520
MAY											
18...	2140	18	12	--	--	170	2400	3200	.53	9.7	8830
JUN											
14...	2140	19	12	--	--	140	2300	3300	.51	5.8	8730
JUL											
18...	2030	18	12	144	118	--	2300	3300	.34	5.7	8590
AUG											
15...	2050	18	12	134	110	--	2400	3300	.63	7.1	8680
SEP											
13...	2020	18	11	147	120	--	2300	3200	.49	9.1	8590

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

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

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT											
26...	22	.565	.015	.580	.060	.79	.15	.21	<.050	<.050	<.010
NOV											
26...	21	.913	.012	.925	.082	1.5	.50	.58	<.050	<.050	<.010
JAN											
04...	12	1.01	.012	1.02	.083	1.3	.15	.23	<.050	<.050	<.010
20...	20	.814	.016	.830	.094	1.0	.08	.18	<.050	<.050	<.010
FEB											
29...	5	.696	.017	.713	.072	.86	.08	.15	E.040	<.050	<.010
APR											
03...	12	.661	.011	.672	.090	.77	.01	.10	<.050	<.050	<.010
20...	13	.480	.015	.495	.082	.72	.14	.22	<.050	<.050	<.010
MAY											
18...	<10	.431	.018	.449	.090	.66	.12	.21	<.050	<.050	<.010
JUN											
14...	11	.132	.012	.144	.059	.43	.23	.29	<.050	<.050	<.010
JUL											
18...	29	.066	.010	.076	.112	.57	.39	.50	<.050	<.050	<.010
AUG											
15...	22	.074	.012	.086	.087	.59	.41	.50	<.050	<.050	<.010
SEP											
13...	11	.119	.013	.132	.162	.63	.34	.50	<.050	<.050	<.010

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT											
26...	<3	<2	16	16	<1	<80	<1	<1.0	2	<100	<310
NOV											
26...	E2	E1	18	19	<1	<72	3	3.6	3	<90	650
JAN											
04...	E2	2	17	16	<1	<80	<1	<.80	<1	<100	<20
20...	E2	2	19	17	<1	<72	<4	<1.0	6	E51	E20
FEB											
29...	3	3	21	19	<1	<72	<4	1.6	<1	<90	80
APR											
03...	3	<2	27	27	<1	<.22	<4	1.9	<4	<2.6	130
20...	4	--	27	--	<1	--	<1	--	<5	--	<20
MAY											
18...	E2	<2	7	20	<1	<.56	4	<3.2	<5	<5.2	<20
JUN											
14...	E2	--	24	--	<1	--	<4	--	<5	--	<90
JUL											
18...	E2	3	26	23	<1	<.56	<4	<3.2	E1	<5.2	<90
AUG											
15...	E2	--	24	--	<1	--	2	--	<2	--	<310
SEP											
13...	E2	2	23	22	<1	<.14	3	<3.2	2	<1.3	<160

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

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT											
26...	<100	2	<1000	<28	E13	<.10	<.2	<390	<400	6	3
NOV											
26...	<90	<1	<900	4	E13	<.30	<.2	<200	<360	15	12
JAN											
04...	<100	<1	<1000	4	<22	<.60	<.2	<39	<400	14	13
20...	<90	5	<900	<3	E10	<.60	<.2	<39	<360	8	--
FEB											
29...	<90	<1	<900	10	E11	<.30	<.2	<39	<360	15	13
APR											
03...	<90	<4	<2.0	10	E16	<.30	<.2	<7	<2.8	16	8
20...	--	<4	--	16	--	<.30	--	41	--	13	--
MAY											
18...	<90	<4	<4.0	10	7.0	<.30	<.2	<7	<5.6	10	6
JUN											
14...	--	<4	--	25	--	<.30	--	<120	--	7	--
JUL											
18...	<100	<4	<4.0	29	32	<.30	.4	<2	<5.6	9	9
AUG											
15...	--	<2	--	E21	--	<.30	--	--	--	7	--
SEP											
13...	<150	<2	<2.0	E11	13	<.30	<.2	<2	<1.4	17	20

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
OCT											
26...	<1	<4.0	<310	<200	--	--	--	--	--	--	--
NOV											
26...	<1	<1.0	<160	<180	--	--	--	--	--	--	--
JAN											
04...	<1	<1.0	<31	<200	--	--	--	--	--	--	--
20...	<4	<1.0	60	<180	--	--	--	--	--	--	--
FEB											
29...	<4	<4.0	<31	<180	--	--	--	--	--	--	--
APR											
03...	<4	<2.0	<31	<200	--	--	--	--	--	--	--
20...	<2	--	<31	--	--	--	--	--	--	--	--
MAY											
18...	<4	<2.0	<31	<180	<.040	<.05	<1.00	<.100	<.100	<.100	<.100
JUN											
14...	<4	--	<93	--	--	--	--	--	--	--	--
JUL											
18...	<2	<4.0	<93	<200	--	--	--	--	--	--	--
AUG											
15...	<2	--	<310	--	<.040	<.10	<1.00	<.100	<.100	<.100	<.100
SEP											
13...	<1	<1.0	<160	<300	--	--	--	--	--	--	--

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

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

DATE	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)
OCT											
26...	--	--	--	--	--	--	--	--	--	--	--
NOV											
26...	--	--	--	--	--	--	--	--	--	--	--
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
29...	--	--	--	--	--	--	--	--	--	--	--
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
MAY											
18...	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	92.0	<2.00	<.100
JUN											
14...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
15...	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	130	<2.00	<.100
SEP											
13...	--	--	--	--	--	--	--	--	--	--	--

DATE	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT										
26...	--	--	--	--	--	--	--	--	--	--
NOV										
26...	--	--	--	--	--	--	--	--	--	--
JAN										
04...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
FEB										
29...	--	--	--	--	--	--	--	--	--	--
APR										
03...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
MAY										
18...	<.030	76.0	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN										
14...	--	--	--	--	--	--	--	--	--	--
JUL										
18...	--	--	--	--	--	--	--	--	--	--
AUG										
15...	<.030	124	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP										
13...	--	--	--	--	--	--	--	--	--	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	154.4	13070	8910	3710	3400	1400	2300	959	2600
NOV.	1999	164.3	12740	8750	3880	3300	1450	2300	1020	2600
DEC.	1999	216.8	12600	8680	5080	3200	1890	2300	1350	2600
JAN.	2000	214.2	12470	8610	4980	3200	1840	2300	1340	2600
FEB.	2000	190.1	12560	8650	4440	3200	1650	2300	1180	2600
MAR.	2000	748.5	5200	3910	7900	1200	2510	1300	2610	1300
APR.	2000	212.3	11230	7950	4560	2800	1610	2300	1310	2500
MAY	2000	189.8	11360	7970	4080	2900	1470	2200	1140	2400
JUNE	2000	221.9	10370	7410	4440	2600	1550	2200	1310	2300
JULY	2000	168.8	11450	8020	3650	2900	1320	2200	1020	2400
AUG.	2000	178.7	12740	8750	4220	3300	1580	2300	1110	2600
SEPT	2000	176.9	12690	8720	4170	3300	1550	2300	1100	2600
TOTAL		2836.7	**	**	55120	**	19820	**	15460	**
WTD.AVG.		7.8	10250	7200	**	2600	**	2000	**	2200

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	13900	13600	13800	12700	12300	12500	13000	12900	12900	12600	12500	12500
2	13900	13600	13800	12900	12600	12800	12900	12900	12900	12600	12500	12500
3	13900	13500	13800	13000	12800	12900	13000	12800	12900	12600	12500	12600
4	13900	13500	13700	13000	12700	12800	13000	12800	12900	12800	12300	12500
5	13800	13200	13600	12900	12600	12700	12900	12800	12800	12800	12100	12500
6	13700	13200	13500	12700	12400	12600	13100	12800	12900	12500	12300	12400
7	13700	13200	13600	12700	12300	12500	13000	12800	12800	12500	12300	12400
8	13900	12900	13500	12600	12300	12400	12900	12400	12700	12400	12200	12300
9	13700	12200	13400	12600	12300	12400	12700	11600	12200	12500	12400	12400
10	13200	12000	12800	12500	12300	12400	12600	11700	12100	12700	12400	12500
11	13400	13100	13300	12600	12400	12500	12600	12400	12400	12700	12500	12600
12	13400	13300	13400	12700	12400	12600	12700	12600	12600	12700	12500	12600
13	13400	13300	13400	12700	12500	12600	12700	12600	12600	12600	12500	12600
14	13500	13200	13400	12800	12500	12600	12800	12600	12700	12700	12500	12600
15	13400	12900	13200	12800	12500	12600	12800	12500	12800	12800	12600	12700
16	13300	13000	13200	12800	12500	12700	12900	12600	12700	12800	12600	12700
17	13500	13100	13300	12800	12500	12700	12700	12400	12600	12800	12700	12700
18	13300	12900	13200	12800	12500	12700	12700	12500	12600	12800	12700	12700
19	13000	12700	12900	13100	12600	12800	12700	12600	12600	12800	12600	12700
20	13000	12800	12900	13100	12900	13000	12700	12500	12600	12800	12500	12700
21	13100	12600	12900	13000	12800	12900	12700	12600	12600	12600	12200	12500
22	13200	12600	12900	13000	12800	12900	12700	12400	12500	12300	12200	12200
23	12900	12700	12800	13000	12900	12900	12500	12500	12500	12300	12100	12200
24	12800	12500	12800	13000	12900	12900	12600	12500	12500	12400	12200	12300
25	12800	12700	12700	13100	12900	13000	12600	12400	12500	12500	12200	12300
26	12700	12600	12700	13100	12800	12900	12600	12500	12500	12500	12300	12400
27	12700	12500	12600	13000	12900	12900	12600	12500	12500	12400	12300	12300
28	12700	12500	12600	13000	12900	12900	12600	12500	12500	12500	11500	12300
29	13100	10600	12600	13000	12700	12900	12600	12300	12500	12600	12000	12300
30	12500	10600	12200	13000	12800	12900	12600	12500	12500	12400	12200	12400
31	12500	12100	12300	---	---	---	12600	12500	12500	12500	12300	12400
MONTH	13900	10600	13100	13100	12300	12700	13100	11600	12600	12800	11500	12500

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12500	12100	12400	13000	12400	12700	11900	10800	11300	11400	10700	11100
2	12500	11600	12400	12700	7330	9530	11800	10500	11500	11500	11000	11300
3	12500	12300	12400	10900	6930	9640	12200	11300	11700	11500	10900	11300
4	12600	12200	12400	12000	10900	11600	11600	11000	11500	11600	11400	11500
5	12600	12300	12500	12000	11800	11800	11600	11200	11400	11600	11400	11500
6	12600	12400	12500	11900	11600	11700	11600	11200	11400	11700	11400	11600
7	12600	12400	12600	11700	11300	11500	11600	11200	11400	11800	11500	11700
8	12600	12500	12500	11600	11400	11500	11700	11300	11500	11900	11600	11800
9	12600	12500	12600	11700	11400	11500	11600	11300	11500	12000	11700	11900
10	12600	12500	12600	11800	11300	11500	11700	11500	11600	12100	11700	11900
11	12900	12500	12800	11800	11500	11600	11700	11500	11700	12100	11800	12000
12	12900	12600	12800	11900	11600	11800	11700	11500	11600	12200	11900	12100
13	12800	12700	12800	12000	11800	11900	11800	11600	11700	12400	12100	12300
14	12900	12500	12800	12100	11800	12000	12000	11700	11900	12500	12100	12400
15	13000	12700	12800	12000	11700	11900	12100	10900	11800	12500	12100	12300
16	12900	12700	12800	12100	11500	12000	11000	10400	10700	---	---	e12500
17	13000	12700	12900	12200	11400	12100	11200	10700	11000	---	---	e12700
18	13100	12800	12900	12300	12100	12200	11600	11200	11500	13000	12700	13000
19	12900	12600	12800	12700	12300	12500	11900	11600	11800	13200	12800	13000
20	13100	12700	12900	12900	12500	12700	12300	11200	11800	13200	12900	13100
21	12900	12800	12800	12800	12400	12600	11400	10800	11200	12900	12700	12800
22	13000	7750	12100	12600	6940	11900	11400	10900	11200	---	---	e13000
23	12300	8710	10500	6940	1260	2650	11000	6620	8780	---	---	e13100
24	12800	11400	11800	7300	2070	4780	11100	8500	10200	---	---	e13300
25	13100	12800	12900	10200	7300	8950	11600	11000	11400	---	---	e13300
26	13100	12800	12900	10900	10200	10600	11600	11000	11400	---	---	e11000
27	13200	12900	13000	11300	10900	11100	11700	11200	11400	---	---	e4500
28	13100	12900	13000	11400	11200	11300	11600	11400	11500	---	---	e7000
29	13100	12900	13000	11600	11300	11500	11400	10700	11200	---	---	e9000
30	---	---	---	11800	11600	11700	11200	9450	10700	---	---	e9800
31	---	---	---	12000	11800	11900	---	---	---	---	---	e10000
MONTH	13200	7750	12600	13000	1260	11100	12300	6620	11300	---	---	11500

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	e10000	11400	10500	11300	12900	12800	12800	12600	12500	12600
2	---	---	e6000	11000	10100	10600	12900	12700	12800	12600	12500	12600
3	---	---	e5500	11400	11000	11200	12900	12800	12800	12600	12500	12500
4	---	---	e7000	11600	11400	11500	12900	12800	12800	12600	12400	12500
5	---	---	e10000	11700	11500	11600	12900	12800	12900	12600	12400	12500
6	---	---	e11000	11700	11600	11600	12900	12900	12900	12600	12400	12500
7	---	---	e11900	11700	11600	11600	12900	12800	12900	12600	12500	12500
8	---	---	e12100	11700	11600	11600	12900	12800	12900	12600	12500	12600
9	---	---	e12200	11800	11600	11700	13000	12800	12900	12600	12400	12500
10	---	---	e12300	11800	11700	11800	13000	13000	13000	12600	12400	12500
11	---	---	e12400	11800	11800	11800	13000	12900	13000	12600	12500	12500
12	---	---	e12500	11800	11700	11800	13000	12900	13000	12600	12500	12500
13	---	---	e12700	---	---	e8500	13000	12900	12900	12900	12500	12600
14	---	---	e12900	---	---	e5500	13100	13000	13000	12700	12600	12600
15	12800	12400	12600	---	---	e6000	13100	12900	13000	12700	12500	12600
16	12600	12500	12600	---	---	e9000	12900	12700	12800	12700	12500	12600
17	12500	8500	10700	---	---	e12600	12700	12600	12600	12800	12700	12700
18	11200	7970	9590	---	---	e12900	12600	12600	12600	12800	12700	12700
19	11600	6140	9310	13200	13000	13100	12600	12500	12600	12900	12700	12800
20	10900	6460	8270	13100	13000	13100	12800	12600	12700	12900	12800	12800
21	11300	10400	11100	13100	13000	13100	12700	12600	12700	12900	12800	12900
22	11600	11200	11400	13000	13000	13000	12700	12600	12600	12900	12700	12800
23	11600	10300	11200	13000	12900	13000	12600	12500	12600	12800	12600	12700
24	11200	11000	11100	13000	12800	12900	12600	12500	12500	12900	12800	12800
25	11400	11100	11300	13000	12800	12900	12600	12400	12500	13000	12900	13000
26	11600	11300	11500	13000	12900	12900	12500	12400	12500	13100	12900	13000
27	11600	11400	11500	12900	12900	12900	12600	12400	12500	13000	12900	13000
28	11500	11400	11400	12900	12800	12900	12600	12500	12600	13000	12900	12900
29	11400	11300	11400	12900	12600	12800	12600	12400	12500	12900	12800	12900
30	11400	11300	11300	12900	12700	12800	12600	12500	12600	12900	12900	12900
31	---	---	---	12900	12800	12800	12600	12600	12600	---	---	---
MONTH	---	---	10800	---	---	11600	13100	12400	12700	13100	12400	12700

e Estimated

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.4	16.1	18.8	16.2	14.3	15.1	13.0	11.7	12.3	13.2	7.1	9.7
2	21.5	16.5	19.4	15.4	12.4	14.2	14.1	12.9	13.4	13.1	7.6	10.2
3	20.0	14.8	17.5	12.9	10.7	11.9	13.2	10.9	12.3	10.9	5.4	8.5
4	20.2	13.7	16.2	15.4	10.2	12.7	11.5	9.0	10.6	8.4	2.8	5.3
5	23.9	13.6	18.2	19.7	12.2	15.7	9.0	6.1	7.4	9.3	3.0	5.7
6	26.0	17.2	21.0	21.8	14.5	17.6	7.9	3.5	5.7	9.2	3.5	6.1
7	24.8	17.6	20.7	20.5	14.1	17.0	11.2	5.3	8.0	8.7	3.4	6.2
8	26.0	18.2	20.9	20.4	14.0	16.6	13.1	6.4	9.7	13.6	8.1	10.2
9	21.3	18.1	20.4	19.9	14.2	16.7	10.5	4.9	7.8	11.8	6.5	8.8
10	21.1	19.3	20.4	21.1	14.3	17.3	9.6	3.4	6.3	12.0	5.1	8.2
11	21.5	19.6	20.6	20.8	13.8	16.9	11.2	5.5	8.0	12.7	6.4	9.2
12	21.6	19.7	20.9	20.3	13.0	16.3	11.1	7.1	9.1	13.9	6.7	9.7
13	22.3	19.1	20.7	20.8	13.9	16.9	10.4	4.5	7.3	11.8	6.3	8.6
14	22.6	17.7	20.6	20.6	13.8	16.7	10.8	2.5	6.7	11.8	4.1	6.9
15	25.3	18.1	21.2	19.1	12.7	15.5	6.8	2.3	5.2	11.3	5.6	8.6
16	22.3	17.1	19.4	18.7	11.6	14.8	5.1	4.2	4.7	13.1	11.3	12.2
17	17.1	11.7	13.4	18.0	11.3	14.3	6.8	4.7	6.1	13.2	11.9	12.5
18	14.0	10.2	12.3	18.4	13.0	15.3	8.2	6.8	7.6	13.0	10.8	12.1
19	17.6	9.0	12.9	19.3	9.6	14.1	8.3	7.0	7.6	11.6	10.6	11.0
20	18.6	9.6	13.7	13.5	8.5	12.2	8.1	5.6	6.7	11.4	9.1	10.4
21	22.8	11.1	15.3	12.8	11.6	12.2	9.4	5.2	6.7	10.0	7.2	8.6
22	16.9	10.5	15.1	12.8	11.7	12.4	9.3	4.0	6.2	13.0	9.2	10.8
23	16.0	14.9	15.5	12.4	10.8	11.8	10.0	3.5	6.3	12.8	7.2	9.9
24	15.4	14.1	14.8	11.0	8.3	9.4	10.7	4.2	7.0	10.5	5.3	8.0
25	16.2	14.7	15.4	10.1	6.9	8.5	9.1	4.3	6.9	9.9	6.5	8.0
26	16.8	14.8	15.8	15.1	6.0	9.5	13.3	7.9	10.1	7.4	4.6	6.2
27	18.0	14.3	16.0	11.1	9.3	10.4	11.6	6.0	8.4	5.4	4.2	4.7
28	21.1	16.0	18.3	11.6	10.6	11.2	12.1	4.8	8.1	4.6	1.7	3.9
29	24.6	15.9	18.9	12.1	9.9	10.9	11.7	5.8	8.7	4.8	1.2	3.4
30	19.4	15.8	17.6	11.7	10.0	11.1	12.1	7.7	9.4	5.7	3.5	4.9
31	15.8	14.3	15.1	---	---	---	11.4	4.9	8.0	6.1	4.7	5.6
MONTH	26.0	9.0	17.6	21.8	6.0	13.8	14.1	2.3	8.0	13.9	1.2	8.2

07311630 MIDDLE WICHITA RIVER NEAR GUTHRIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.6	5.9	7.2	16.4	11.3	14.1	13.0	11.2	11.8	---	---	---
2	11.3	6.6	7.6	16.9	11.6	14.8	20.9	10.3	15.0	---	---	---
3	9.7	6.8	8.4	15.2	9.5	12.5	17.5	12.2	14.5	---	---	---
4	9.9	7.2	9.0	17.0	8.8	12.8	21.1	9.2	14.5	26.5	18.7	21.9
5	8.1	6.8	7.5	18.5	11.4	14.9	24.4	13.5	18.1	28.2	21.1	23.9
6	9.4	7.6	8.5	20.9	15.1	17.8	26.7	15.4	20.2	32.5	22.0	26.4
7	10.8	9.4	10.0	20.1	16.1	18.4	24.1	16.4	19.6	31.3	21.8	25.9
8	11.6	9.9	10.7	17.3	10.7	14.1	22.5	12.7	17.0	31.1	22.4	26.0
9	13.0	11.0	11.9	18.8	11.0	14.7	22.7	12.8	17.2	29.6	20.0	24.4
10	15.1	11.5	13.1	18.2	12.2	15.1	24.6	16.0	19.7	30.5	20.0	24.4
11	16.1	6.7	11.9	17.2	9.2	12.8	20.5	14.6	17.5	32.0	22.9	26.8
12	10.9	9.1	10.2	18.1	9.0	13.3	16.5	14.1	15.1	28.1	21.5	24.5
13	12.4	10.0	11.2	19.9	11.0	15.3	24.6	13.1	17.7	27.2	16.7	21.4
14	12.5	10.1	11.4	22.4	14.6	18.1	28.0	17.2	21.8	27.7	16.0	21.3
15	13.4	10.2	11.9	23.3	15.7	19.3	27.6	19.1	21.8	29.2	19.2	23.8
16	13.9	10.2	12.2	19.7	8.2	13.0	25.4	15.6	20.2	---	---	---
17	17.4	11.2	14.0	12.7	6.7	9.1	26.8	17.0	21.3	---	---	---
18	16.9	13.2	14.4	17.2	7.8	11.7	30.3	20.2	24.6	---	---	---
19	13.7	8.2	10.7	18.9	9.2	13.5	29.8	22.3	25.2	21.2	16.7	18.4
20	13.1	9.3	11.2	19.2	10.5	13.9	25.9	17.2	21.1	22.7	16.4	19.3
21	16.2	11.3	13.3	17.0	12.6	15.5	26.6	15.6	20.2	---	---	---
22	17.9	13.1	15.4	15.0	13.2	14.3	22.2	16.2	20.0	---	---	---
23	15.6	10.8	13.6	16.0	11.9	14.0	22.5	17.6	19.7	---	---	---
24	17.9	13.5	15.4	21.9	13.0	17.0	25.2	18.3	21.5	---	---	---
25	18.4	15.8	17.0	23.9	14.4	18.8	25.6	19.5	22.8	---	---	---
26	16.8	12.2	14.2	26.2	17.0	21.0	27.1	19.1	23.1	---	---	---
27	15.2	10.0	13.0	25.2	16.2	20.1	26.3	21.4	22.9	---	---	---
28	15.2	11.1	13.5	20.4	15.5	18.0	25.6	16.8	21.0	---	---	---
29	16.0	12.3	14.4	20.4	14.7	17.1	27.4	19.1	22.8	---	---	---
30	---	---	---	21.9	12.6	16.5	25.5	20.2	22.5	---	---	---
31	---	---	---	15.7	13.0	13.9	---	---	---	---	---	---
MONTH	18.4	5.9	11.8	26.2	6.7	15.3	30.3	9.2	19.7	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	---	---	---	26.4	25.2	25.6	28.7	26.9	27.7	28.3	26.0	27.0
2	---	---	---	29.8	25.0	27.2	29.1	26.8	28.0	28.5	26.4	27.2
3	---	---	---	30.5	27.9	29.4	29.6	27.3	28.4	28.8	26.6	27.4
4	---	---	---	30.4	28.5	29.4	29.8	27.8	28.7	29.2	26.4	27.6
5	---	---	---	29.8	28.1	28.8	30.1	28.0	28.9	29.0	27.0	27.8
6	---	---	---	29.7	27.8	28.6	30.1	28.3	29.0	29.1	27.5	28.2
7	---	---	---	30.1	27.9	28.9	30.2	28.2	29.0	27.7	26.8	27.2
8	---	---	---	29.7	28.1	28.9	30.2	28.3	29.1	27.5	25.9	26.6
9	---	---	---	29.8	27.8	28.7	30.1	28.1	28.8	28.0	25.7	26.5
10	---	---	---	30.1	28.1	29.0	29.8	27.8	28.5	28.3	26.1	26.9
11	---	---	---	30.8	28.4	29.5	29.9	27.7	28.6	27.4	25.7	26.7
12	---	---	---	30.5	29.3	30.0	30.1	27.7	28.6	26.8	24.8	25.8
13	---	---	---	---	---	---	30.0	28.0	28.8	28.2	26.3	27.0
14	---	---	---	---	---	---	29.5	27.3	28.2	27.9	26.2	27.0
15	26.6	23.6	25.0	---	---	---	29.3	27.0	27.9	27.0	25.3	26.2
16	27.0	24.8	25.8	---	---	---	29.4	27.5	28.3	25.6	23.7	24.5
17	24.8	19.6	21.8	---	---	---	29.4	27.3	28.1	25.2	23.1	23.9
18	20.5	19.5	19.9	---	---	---	28.8	26.9	27.6	24.8	22.4	23.3
19	24.7	20.3	21.8	31.1	28.3	29.6	29.1	27.3	28.1	24.0	22.0	22.7
20	27.8	22.6	24.9	31.2	28.8	29.9	28.5	26.5	27.3	23.1	21.4	22.2
21	30.3	24.4	26.6	30.7	28.5	29.6	28.9	26.5	27.4	22.8	20.6	21.4
22	29.0	25.9	27.4	30.5	28.5	29.3	28.9	27.0	27.7	24.5	21.1	22.9
23	29.0	26.9	28.2	30.0	28.4	29.0	28.9	26.9	27.7	24.7	22.4	24.0
24	30.5	27.7	29.0	30.9	28.8	29.6	29.4	27.1	28.0	22.4	18.2	20.7
25	31.0	28.8	29.9	29.3	27.2	28.5	28.9	27.2	27.9	18.2	16.1	17.0
26	29.7	26.1	27.8	29.7	27.0	28.1	29.6	27.1	28.1	18.2	15.1	16.3
27	26.9	25.1	26.0	29.4	27.5	28.7	29.8	27.7	28.5	19.0	15.7	17.1
28	26.6	25.2	25.8	28.8	27.2	27.8	29.5	27.6	28.4	19.8	17.2	18.3
29	25.5	24.1	25.0	29.1	27.2	28.2	29.2	27.3	28.0	20.6	18.1	19.2
30	26.2	23.9	24.9	28.7	27.4	28.1	29.0	27.1	27.8	21.0	18.7	19.6
31	---	---	---	28.1	27.3	27.7	28.4	26.6	27.5	---	---	---
MONTH	---	---	---	---	---	---	30.2	26.5	28.2	29.2	15.1	23.9

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07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX

LOCATION.--Lat 33°49'14", long 99°47'10", Foard-Knox County line, Hydrologic Unit 11130204, near right bank at downstream side of bridge on State Highway 6, 4.5 mi north of Truscott, about 47.6 mi upstream from confluence with South Wichita River, and 188.4 mi upstream from mouth.

DRAINAGE AREA.--937 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), Dec 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,351.78 ft above sea level. Prior to Jan 2, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. There is one small diversion for irrigation upstream from station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1900 occurred in Sep 1919; the next highest flood occurred in May 1954, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	1900	4,010	17.36	Jun 17	2030	1,680	13.86
Jun 4	0930	1,330	12.77				

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

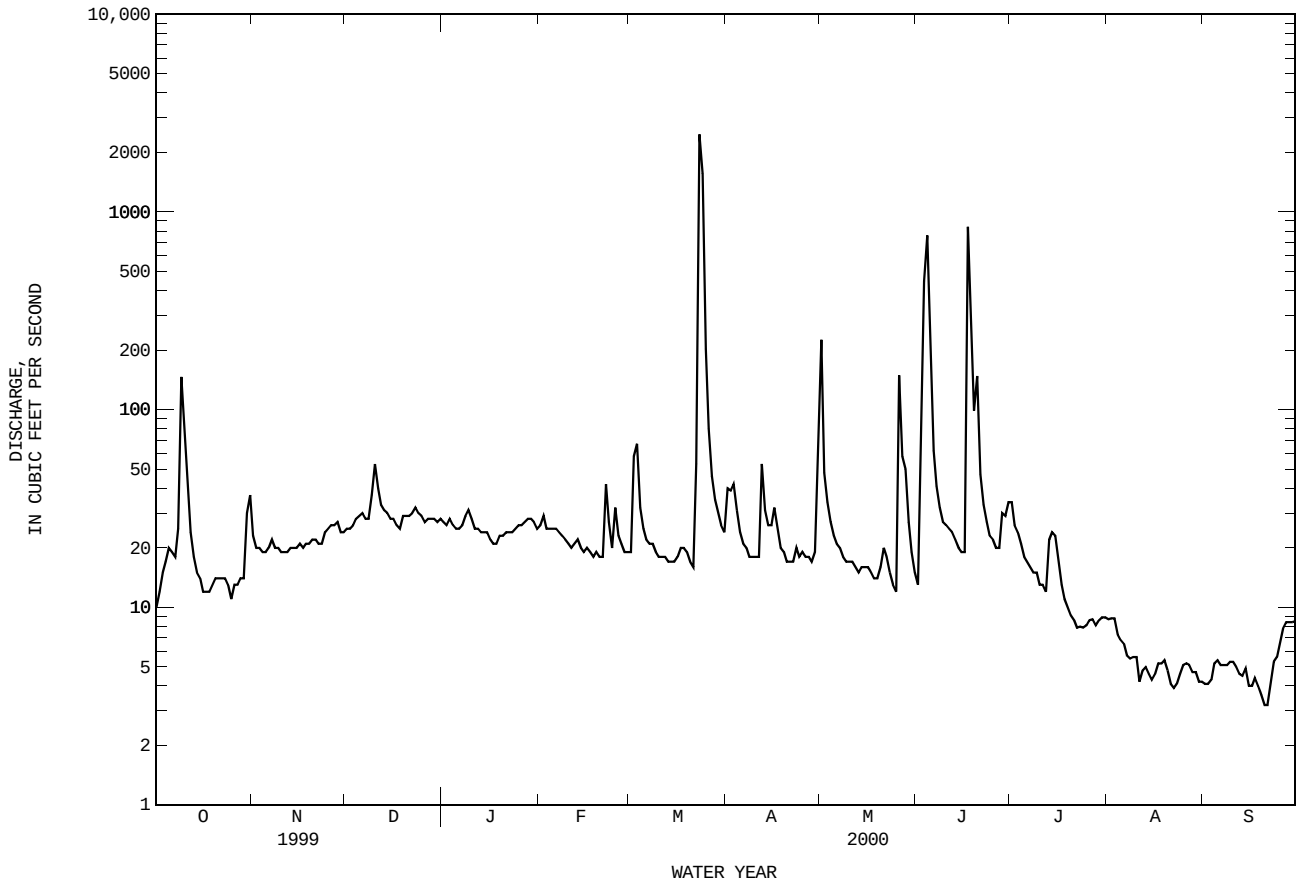
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	23	25	27	26	19	40	225	13	34	8.7	4.1
2	12	20	25	26	29	58	39	48	61	26	8.8	4.1
3	15	20	26	28	25	67	42	34	445	24	8.8	4.3
4	17	19	28	26	25	32	31	27	760	21	7.3	5.2
5	20	19	29	25	25	25	24	23	159	18	6.8	5.4
6	19	20	30	25	25	22	21	21	62	17	6.5	5.1
7	18	22	28	26	24	21	20	20	41	16	5.7	5.1
8	25	20	28	29	23	21	18	18	32	15	5.5	5.1
9	146	20	37	31	22	19	18	17	27	15	5.6	5.3
10	86	19	53	28	21	18	18	17	26	13	5.6	5.3
11	44	19	40	25	20	18	18	17	25	13	4.2	5.0
12	24	19	33	25	21	18	53	16	24	12	4.8	4.6
13	18	20	31	24	22	17	31	15	22	22	5.0	4.5
14	15	20	30	24	20	17	26	16	20	24	4.6	4.9
15	14	20	28	24	19	17	26	16	19	23	4.3	4.0
16	12	21	28	22	20	18	32	16	19	17	4.6	4.0
17	12	20	26	21	19	20	25	15	840	13	5.2	4.4
18	12	21	25	21	18	20	20	14	289	11	5.2	4.0
19	13	21	29	23	19	19	19	14	99	10	5.4	3.6
20	14	22	29	23	18	17	17	16	148	9.1	4.8	3.2
21	14	22	29	24	18	16	17	20	47	8.6	4.1	3.2
22	14	21	30	24	42	53	17	18	33	7.9	3.9	4.1
23	14	21	32	24	27	2470	20	15	27	8.0	4.1	5.3
24	13	24	30	25	20	1560	18	13	23	7.9	4.6	5.6
25	11	25	29	26	32	202	19	12	22	8.1	5.1	6.6
26	13	26	27	26	23	80	18	149	20	8.6	5.2	7.8
27	13	26	28	27	21	46	18	58	20	8.7	5.1	8.4
28	14	27	28	28	19	35	17	50	30	8.1	4.7	8.4
29	14	24	28	28	19	30	19	27	29	8.6	4.7	8.4
30	30	24	27	27	---	26	78	19	34	8.9	4.2	8.5
31	37	---	28	25	---	24	---	15	---	8.9	4.2	---
TOTAL	733	645	924	787	662	5025	779	1001	3416	445.4	167.3	157.5
MEAN	23.6	21.5	29.8	25.4	22.8	162	26.0	32.3	114	14.4	5.40	5.25
MAX	146	27	53	31	42	2470	78	225	840	34	8.8	8.5
MIN	10	19	25	21	18	16	17	12	13	7.9	3.9	3.2
AC-FT	1450	1280	1830	1560	1310	9970	1550	1990	6780	883	332	312

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

MEAN	101	30.7	27.7	24.9	29.4	37.5	52.0	116	153	47.0	79.8	101
MAX	1170	76.2	120	68.5	149	162	340	771	737	317	1266	818
(WY)	1984	1995	1992	1992	1992	2000	1997	1987	1995	1975	1966	1965
MIN	3.90	10.4	11.8	8.23	6.16	5.49	7.61	16.4	11.9	.72	1.17	3.51
(WY)	1964	1968	1964	1965	1965	1965	1964	1965	1970	1964	1964	1968

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	26648.9		14742.2			
ANNUAL MEAN	73.0		40.3		66.4	
HIGHEST ANNUAL MEAN					193	1966
LOWEST ANNUAL MEAN					17.2	1983
HIGHEST DAILY MEAN	3680	May 27	2470	Mar 23	19400	Sep 19 1965
LOWEST DAILY MEAN	3.5	Sep 10	3.2	Sep 20	.02	Aug 22 1974
ANNUAL SEVEN-DAY MINIMUM	4.4	Sep 6	3.8	Sep 15	.13	Jul 30 1965
INSTANTANEOUS PEAK FLOW			4010	Mar 23	28900	Sep 19 1965
INSTANTANEOUS PEAK STAGE			17.36	Mar 23	21.96	Sep 19 1965
ANNUAL RUNOFF (AC-FT)	52860		29240		48110	
10 PERCENT EXCEEDS	96		37		67	
50 PERCENT EXCEEDS	22		20		20	
90 PERCENT EXCEEDS	9.5		5.2		7.6	



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Feb 1954 to Mar 1959, Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.
BIOCHEMICAL DATA: Sep 1990 to current year.
PESTICIDE DATA: Sep 1996 to current year.
SEDIMENT DATA: Apr 1978 to Dec 1989.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.
WATER TEMPERATURE: Jul 1968 to Dec 1989 (local observer), Sep 1990 to Jun 1992, Oct 1994 to current year.

INSTRUMENTATION.--Water-quality monitor Jul 1968 to Dec 1989, Sep 1990 to Jun 1992, Oct 1994 to current year.

REMARKS.--Records fair. Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1991 to 2000. The standard error of estimate for dissolved solids is 5%, chloride is 10%, sulfate is 9% and for hardness is 12%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 35,800 microsiemens, Oct 9, 1982; minimum, 400 microsiemens, Jun 7, 8, 1985.
WATER TEMPERATURE: Maximum, 39.0°C, Aug 21, 23, 1969, Aug 22, 1973; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 27,200 microsiemens, Sep 21, 25; minimum, 1,320 microsiemens, Jun 4.
WATER TEMPERATURE: Maximum, 36.2°C, Aug 13; minimum, 0.1°C, Jan 29.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	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)
OCT												
26...	1250	13	16800	8.0	17.1	10.7	121	2700	2600	780	172	2960
NOV												
26...	1245	28	20300	7.0	9.5	12.9	128	2900	2800	870	183	3450
JAN												
04...	1120	26	18400	8.0	4.3	14.8	126	2800	2700	830	176	3350
FEB												
01...	1510	24	19000	7.6	7.0	12.9	119	2600	2500	770	175	3300
24...	1240	20	18100	8.2	18.3	8.8	105	2600	2500	760	173	3210
MAR												
23...	1535	3530	1450	8.2	16.1	7.5	81	300	260	95	15	175
APR												
03...	1310	37	11700	8.2	13.2	9.4	98	1900	1700	530	128	1920
MAY												
16...	1340	16	18600	7.9	26.5	8.1	114	2900	2800	820	206	3320
JUN												
06...	1135	6.0	3810	7.9	24.0	8.1	101	750	650	220	48	522
JUL												
24...	1430	8.0	19600	8.0	32.9	7.2	110	3000	3000	880	206	3770
AUG												
14...	1318	.32	24400	8.2	30.0	7.5	111	3400	3400	1000	230	4450
SEP												
06...	1327	4.9	25700	8.6	32.1	12.4	190	3800	3800	1100	253	5310

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

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

DATE	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT											
26...	25	13	--	--	--	84	2300	4800	.44	.58	11100
NOV											
26...	28	14	--	--	--	98	2700	5700	.40	12	13000
JAN											
04...	28	13	--	--	--	140	2500	5600	.38	14	12500
FEB											
01...	28	2.8	--	--	--	130	2400	5300	.49	9.1	12000
24...	27	15	--	--	--	110	2400	5300	.46	11	11900
MAR											
23...	4	4.9	--	--	--	37	270	270	.18	4.4	861
APR											
03...	19	12	--	--	--	130	1700	3200	.35	4.0	7560
MAY											
16...	27	15	--	--	--	100	2600	5300	.48	2.0	12300
JUN											
06...	8	8.1	--	--	--	98	660	830	.31	8.5	2360
JUL											
24...	30	17	--	83	68	--	2400	5900	.68	2.9	13200
AUG											
14...	33	22	6	46	48	--	3100	7000	.70	1.2	15800
SEP											
06...	37	21	12	18	36	--	3400	8300	.52	.65	18300

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT											
26...	32	--	<.010	<.050	.030	--	.20	.23	<.050	<.050	<.010
NOV											
26...	31	--	<.010	<.050	.045	--	--	<.10	<.050	<.050	<.010
JAN											
04...	21	.516	.014	.530	.051	.75	.17	.22	<.050	<.050	<.010
FEB											
01...	5	--	<.010	.187	<.020	.41	--	.22	<.050	<.050	<.010
24...	32	--	<.010	<.050	.039	--	.26	.30	<.050	<.050	<.010
MAR											
23...	2020	.383	.010	.393	.028	2.9	2.5	2.6	1.30	<.050	.012
APR											
03...	57	--	<.010	.074	.033	.51	.41	.44	E.049	<.050	<.010
MAY											
16...	11	--	<.010	<.050	.057	--	.31	.37	<.050	<.050	<.010
JUN											
06...	134	--	<.010	.127	<.020	.74	--	.61	.136	<.050	<.010
JUL											
24...	17	--	<.010	<.050	.074	--	.19	.26	<.050	<.050	<.010
AUG											
14...	15	--	<.010	<.050	.060	--	.29	.35	<.050	<.050	<.010
SEP											
06...	12	--	<.010	<.050	.061	--	.34	.40	<.050	<.050	<.010

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

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
26...	--	<3	<2	46	45	<1	<80	<1	<1.0	2	<100
NOV											
26...	--	E2	E2	27	29	<1	<80	3	2.3	7	<100
JAN											
04...	--	3	3	25	2.3	<1	<8.0	<1	<.80	<1	<10
FEB											
01...	--	E2	<2	23	21	<1	<80	<20	<20	<1	<10
24...	--	4	7	51	52	<1	<80	4	<3.2	E1	<100
MAR											
23...	.04	15	3	480	76	M	<.14	34	<.80	26	E.60
APR											
03...	--	5	--	120	--	<1	--	<4	--	<4	--
MAY											
16...	--	3	<8	68	72	<1	<.56	4	<1.0	<5	<4.8
JUN											
06...	--	5	--	200	--	<1	--	6	--	4	--
JUL											
24...	--	6	4	64	62	<1	<.56	<4	<3.2	<5	<5.2
AUG											
14...	--	6	--	63	--	<1	--	2	--	<6	--
SEP											
06...	--	4	6	50	48	M	<.70	28	<4.0	3	<5.2

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
26...	<310	<100	<1	<1000	<28	<22	<.10	<.2	<390	<400	4
NOV											
26...	E210	<100	<1	<1000	15000	E20	<.30	<.2	<390	<400	10
JAN											
04...	20	<100	2	<1000	12	E1.6	<.60	<.2	<39	<40	10
FEB											
01...	20	<100	E1	<1000	3	E13	<.30	<.2	<39	<400	10
24...	480	<100	2	<1000	39	30	<.30	<.2	<39	<400	10
MAR											
23...	19000	<10	17	<1.0	700	12	<.30	<.2	52	<1.4	E1
APR											
03...	810	--	<4	--	38	--	<.30	--	<39	--	9
MAY											
16...	<20	<90	<4	<4.0	10	E15	<.30	<.2	<7	<5.6	3
JUN											
06...	2000	--	2	--	91	--	<.30	--	<39	--	E2
JUL											
24...	<160	<100	<4	<4.0	E12	33	<.30	<.2	<7	<5.6	3
AUG											
14...	<460	--	<5	--	21	--	<.30	--	--	--	E3
SEP											
06...	<310	<200	<5	<5.0	12	12	<.30	<.2	<9	<5.6	5

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

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

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
OCT											
26...	E2	<1	<4.0	<310	<200	--	--	--	--	--	--
NOV											
26...	7	<1	<1.0	E180	<200	--	--	--	--	--	--
JAN											
04...	10	<1	<1.0	<31	<20	--	--	--	--	--	--
FEB											
01...	7	<1	<4.0	<31	<20	--	--	--	--	--	--
24...	6	<4	<4.0	<31	<200	--	--	--	--	--	--
MAR											
23...	E1	<4	<1.0	85	<20	--	--	--	--	--	--
APR											
03...	--	<4	--	<31	--	--	--	--	--	--	--
MAY											
16...	<10	<4	<4.0	<31	<180	--	--	--	--	--	--
JUN											
06...	--	<1	--	E22	--	<.040	<.10	<1.00	<.100	<.100	<.100
JUL											
24...	<2	<4	<4.0	<160	<200	--	--	--	--	--	--
AUG											
14...	--	<5	--	<460	--	<.040	<.10	<1.00	<.100	<.100	<.100
SEP											
06...	6	<5	<5.0	<310	<400	--	--	--	--	--	--

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT											
26...	--	--	--	--	--	--	--	--	--	--	--
NOV											
26...	--	--	--	--	--	--	--	--	--	--	--
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
FEB											
01...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
23...	--	--	--	--	--	--	--	--	--	--	--
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	--	--	--	--	--	--	--	--	--	--	--
JUN											
06...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	118	<2.00
JUL											
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	--	<2.00
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

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

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
26...	--	--	--	--	--	--	--	--	--	--	--
NOV											
26...	--	--	--	--	--	--	--	--	--	--	--
JAN											
04...	--	--	--	--	--	--	--	--	--	--	--
FEB											
01...	--	--	--	--	--	--	--	--	--	--	--
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
23...	--	--	--	--	--	--	--	--	--	--	--
APR											
03...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	--	--	--	--	--	--	--	--	--	--	--
JUN											
06...	<.100	<.030	101	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUL											
24...	--	--	--	--	--	--	--	--	--	--	--
AUG											
14...	<.100	<.030	150	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP											
06...	--	--	--	--	--	--	--	--	--	--	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	733	15820	10690	21160	4500	8910	2300	4580	2600
NOV.	1999	645	19460	13190	22960	5700	10000	2700	4620	3000
DEC.	1999	924	18620	12610	31450	5400	13570	2600	6480	2900
JAN.	2000	787	18210	12320	26180	5300	11230	2600	5460	2900
FEB.	2000	662	17920	12130	21670	5200	9280	2500	4530	2800
MAR.	2000	5025	3880	2590	35150	970	13180	690	9320	770
APR.	2000	779	12090	8120	17090	3200	6800	2000	4110	2200
MAY	2000	1001	10800	7270	19640	2900	7910	1700	4640	1900
JUNE	2000	3416	4880	3260	30050	1200	10980	900	8260	1000
JULY	2000	445.4	15590	10530	12660	4400	5280	2300	2790	2600
AUG.	2000	167.3	23910	16290	7360	7500	3380	2900	1300	3200
SEPT	2000	157.5	26660	18220	7750	8600	3670	3000	1260	3300
TOTAL		14742.2	**	**	253100	**	104200	**	57340	**
WTD.AVG.		40	9430	6360	**	2600	**	1400	**	1600

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21400	21000	21200	18800	17500	18200	20400	19600	20000	18400	18100	18200
2	21600	21300	21400	19100	18800	18900	20500	19800	20200	18100	17900	18000
3	22200	21600	21900	19300	18800	19100	20000	19800	19900	18300	17900	18100
4	22200	21400	21800	19200	18900	18300	19900	19600	19700	18500	18200	18300
5	21500	21100	21300	18900	18000	18400	19900	19600	19800	18400	18200	18300
6	21400	21000	21200	18500	17800	18000	20200	19800	20000	18500	18300	18400
7	21400	21100	21200	19100	18500	18900	20000	19700	19900	18600	18200	18400
8	21200	13900	20500	19600	19100	19400	19900	19000	19600	18200	18000	18100
9	19500	6430	12500	19600	19500	19500	19300	18600	18800	18100	17800	18000
10	11600	8050	9600	19700	19300	19500	18600	18000	18300	18100	17900	17900
11	14500	9040	12400	19300	18900	19100	18500	18000	18200	18000	17800	17900
12	17300	14300	15500	19100	19000	19000	18600	18200	18500	18000	17700	17800
13	19000	17300	18100	19200	19000	19100	18500	17500	18100	18000	17800	17900
14	19400	18700	19100	19300	19100	19200	17500	16600	16900	18100	17900	18000
15	20000	19100	19500	19400	19200	19300	16800	16200	16500	18200	17900	18000
16	21000	20000	20700	19500	19400	19400	17700	16200	16700	18000	17700	17900
17	20800	17400	19400	19500	19400	19400	18300	17700	18100	17900	17800	17900
18	17400	15400	16200	19600	19400	19500	18500	18200	18300	18100	17900	18000
19	17000	15500	16000	19800	19500	19700	19400	18500	19000	18700	18100	18300
20	18500	17000	18100	20000	19800	19900	19600	18900	19300	19000	18400	18700
21	18500	17100	17800	20000	19800	19900	18900	18700	18800	18500	18300	18400
22	17100	16300	16600	20000	19900	19900	18700	18500	18600	18300	18100	18200
23	16300	16000	16200	20100	19900	20000	18800	18500	18600	18400	18100	18200
24	16200	16000	16100	20800	20100	20400	18600	18200	18400	18400	18200	18300
25	16500	16100	16300	21100	20500	20900	18300	18000	18100	18400	18300	18300
26	17000	16500	16600	20500	20100	20300	18300	18100	18100	18400	18300	18400
27	17800	17000	17400	20200	19900	20000	18500	18300	18400	18500	18300	18400
28	17800	17400	17600	20100	19700	19900	18600	18300	18400	18600	18500	18500
29	17800	16500	17600	20000	19700	19800	18400	18200	18300	18600	18300	18500
30	16900	10800	15600	19700	19400	19500	18300	17900	18200	18700	18400	18500
31	17600	11000	16700	---	---	---	18500	18300	18300	18600	18300	18500
MONTH	22200	6430	17800	21100	17500	19400	20500	16200	18600	19000	17700	18200

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	18300	18100	18200	17800	17600	17700	9740	7480	9160	8340	2980	5100
2	18900	18200	18600	17600	6610	14700	10300	7930	9340	8800	6240	7580
3	18900	18200	18500	14300	11400	12600	12800	10300	11600	7370	6260	7000
4	18800	18300	18500	13400	11100	12300	13200	12100	12600	7790	7050	7270
5	19200	18700	18900	13600	12200	13200	13400	13000	13300	10500	7790	8980
6	18700	18400	18600	12200	9880	10800	13500	11800	13000	11600	10500	11000
7	18900	18600	18700	13400	9960	11700	11800	11100	11300	11800	11200	11500
8	18700	18400	18500	14900	13400	14100	12200	11400	11700	11300	10900	11000
9	18700	18400	18500	15600	14900	15200	14000	12200	13400	13100	11300	12100
10	18600	18300	18500	16400	15600	16100	14000	12400	13200	14900	13100	14100
11	18700	18500	18600	16500	15900	16200	12400	12100	12300	15800	14900	15200
12	18900	18600	18800	16000	15600	15800	13600	11700	12500	16700	15800	16200
13	18800	18500	18700	15600	14900	15200	12300	10500	11400	17500	16700	17000
14	18800	18500	18700	15600	15100	15300	12100	10600	11600	18200	17500	17800
15	18600	18300	18500	15900	15500	15700	10600	3340	8840	18500	18200	18300
16	19400	18600	19100	17000	15900	16300	12200	4970	9210	19000	18500	18700
17	19400	18600	19000	17400	16900	17100	12000	10500	11200	19200	18800	19000
18	18900	18600	18700	17700	17300	17500	12200	10900	11600	19300	18900	19100
19	19400	18900	19200	17900	17500	17700	13600	12200	12900	19400	19100	19300
20	19400	19200	19300	17900	17500	17700	14800	13600	14200	19400	19000	19200
21	19400	19100	19300	17800	17600	17700	15200	14800	15000	19200	13600	18000
22	19400	9230	17700	17800	1560	16000	15300	14200	15000	19200	16100	18000
23	17500	4040	10900	4170	1740	2660	14400	12100	13600	18900	17000	18400
24	18300	17500	18000	2620	1380	1810	14100	13100	13700	19600	16600	18900
25	18300	10100	15200	2900	1690	2290	15300	14100	14600	17000	10300	15300
26	16800	11600	16000	4420	2900	3610	15700	14300	15000	16600	2540	7380
27	17200	16800	17000	5660	4420	5070	15100	14600	14800	12400	7730	8930
28	17600	17200	17500	6760	5660	6210	15400	15100	15300	15500	12400	13900
29	17700	17500	17600	7800	6760	7280	15800	14100	15500	18400	15300	17200
30	---	---	---	8610	7800	8210	15200	3820	10800	19100	18300	18700
31	---	---	---	9460	8620	9070	---	---	---	18300	15900	17000
MONTH	19400	4040	18000	17900	1380	12300	15800	3340	12600	19600	2540	14400

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15900	14900	15300	13500	7830	12000	20600	19900	20300	26600	26400	26500
2	14900	4490	11700	13800	12200	13100	21000	20600	20900	26800	26400	26500
3	7440	1620	3570	14100	13200	13600	21500	21000	21300	26700	26300	26500
4	8960	1320	2720	14200	13700	14000	22000	21500	21700	26700	26300	26400
5	3150	1620	2300	13700	13000	13400	22400	21900	22200	26800	26400	26600
6	4020	3150	3700	13400	12900	13000	22700	22400	22500	26800	26500	26700
7	5020	4020	4480	14600	13400	13900	23100	22600	22800	27100	26600	26800
8	6060	5020	5550	15300	14600	14800	23400	22900	23100	27000	26500	26700
9	6800	6060	6470	16000	15100	15700	23600	23200	23400	26900	26500	26700
10	7520	6800	7140	16200	15900	16000	23800	23400	23600	26800	26500	26700
11	8240	7520	7910	16600	16200	16400	24000	23600	23800	27000	26700	26800
12	8970	8240	8590	17200	16600	16900	24100	23800	23900	27000	26800	26900
13	9720	8970	9310	18400	5950	13400	24400	23900	24100	27200	26700	26900
14	10500	9720	10100	18100	6040	12200	24600	23800	24400	27000	26500	26700
15	11200	10500	10800	19000	17500	18100	24800	24400	24600	27100	26600	26800
16	12100	11200	11700	18900	16200	17000	25000	24600	24800	27100	26500	26800
17	12400	1350	5700	18200	16600	17300	25100	24600	24800	27000	26500	26800
18	4170	1370	3120	18700	17500	18200	25200	24800	24900	27100	26600	26800
19	5960	3930	4810	17500	16400	16800	25300	24900	25100	27000	26600	26800
20	5440	2850	3630	17700	16700	17200	25700	25200	25400	27100	26800	27000
21	7040	4580	6210	18900	17700	18400	25900	25400	25500	27200	26700	27000
22	8410	7040	7640	19600	18900	19300	25800	25500	25600	26800	26400	26600
23	8790	8410	8700	19700	19400	19600	25800	25500	25700	26800	26500	26700
24	9030	8590	8750	19800	19100	19500	26000	25500	25700	27100	26700	26900
25	10800	9030	9790	19700	19400	19500	25900	25600	25700	27200	26700	27000
26	12100	10800	11700	19800	19500	19600	26000	25700	25800	27000	26500	26800
27	12800	11900	12400	19700	19100	19400	26000	25800	25900	26900	26200	26600
28	13800	12800	13400	19200	18400	18800	26300	25900	26100	26600	26000	26300
29	13800	11500	12400	18600	18300	18400	26300	26000	26200	26400	25900	26200
30	13200	11000	12300	19100	18500	18800	26500	26200	26300	26400	26000	26200
31	---	---	---	19900	19100	19500	26600	26200	26400	---	---	---
MONTH	15900	1320	8060	19900	5950	16600	26600	19900	24300	27200	25900	26700
YEAR	27200	1320	17300									

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.1	15.3	19.2	18.3	12.9	15.4	14.1	10.1	12.1	11.2	6.3	8.8
2	22.1	16.3	19.4	14.9	11.1	13.0	15.5	11.8	13.3	11.7	8.1	10.1
3	20.7	15.8	18.2	14.5	9.0	11.8	13.2	9.3	11.6	10.5	6.6	9.0
4	18.8	14.1	16.2	15.4	9.9	12.8	11.6	7.9	10.2	7.1	3.4	5.5
5	22.0	14.2	18.0	18.2	12.3	15.2	8.0	5.2	6.7	7.3	2.8	5.2
6	24.6	18.0	21.0	19.9	14.7	17.3	7.4	2.7	5.3	7.2	3.2	5.4
7	23.7	18.0	20.7	19.5	14.9	17.3	9.5	4.8	7.1	7.1	3.4	5.6
8	23.7	18.9	20.9	19.1	14.9	16.8	11.5	6.4	9.1	11.2	7.1	8.8
9	21.1	17.8	19.5	19.0	14.6	16.9	10.7	5.6	8.0	10.1	6.7	8.5
10	23.2	17.6	20.4	19.8	14.9	17.4	7.0	3.2	5.4	9.9	5.2	7.6
11	24.1	18.1	21.2	19.6	14.8	17.3	7.4	4.3	6.0	10.5	6.3	8.4
12	24.9	18.7	21.9	19.2	14.2	16.8	9.0	6.5	7.7	11.5	6.3	8.8
13	25.0	18.6	21.9	19.6	14.7	17.3	8.1	3.8	6.1	10.3	6.7	8.5
14	24.4	18.6	21.6	19.5	14.8	17.2	8.0	4.9	6.3	8.8	4.5	6.9
15	25.2	19.4	22.1	18.2	14.2	16.2	6.4	2.2	4.4	12.6	6.2	9.3
16	22.0	17.7	20.1	17.6	12.9	15.4	6.1	1.9	4.0	14.5	10.0	12.2
17	17.7	12.2	14.1	17.1	12.5	15.0	7.7	3.8	5.7	14.9	10.0	12.4
18	14.5	10.9	12.8	17.7	13.4	15.7	7.7	4.2	5.9	12.7	9.5	11.1
19	16.2	9.9	13.1	16.1	12.5	14.5	7.3	4.4	5.7	13.1	7.6	10.4
20	17.1	10.6	13.9	14.1	9.8	12.2	6.4	3.7	5.2	11.0	7.6	9.2
21	18.7	11.9	15.4	14.6	10.5	12.6	6.8	3.5	5.0	10.2	5.6	8.1
22	19.2	13.2	16.2	13.8	10.3	11.8	6.7	2.6	4.6	12.5	8.5	10.4
23	18.4	12.9	15.7	12.7	9.4	11.0	7.1	2.4	4.8	11.5	7.3	9.5
24	17.8	12.0	15.0	10.7	7.1	9.1	8.0	3.4	5.7	8.9	5.5	7.6
25	18.6	12.9	15.9	10.3	6.2	8.5	7.4	3.4	5.8	8.4	5.8	7.1
26	19.1	13.0	16.2	11.1	6.1	8.8	10.7	6.7	8.4	6.7	3.8	5.3
27	19.2	13.9	16.6	12.6	7.8	10.2	9.4	5.5	7.6	3.8	2.7	3.1
28	21.2	16.5	18.6	12.7	8.5	10.6	9.8	4.7	7.3	2.7	1.5	2.2
29	22.1	16.6	19.1	12.2	8.5	10.3	9.9	5.8	8.0	5.2	.1	2.4
30	17.7	14.8	16.4	13.3	9.6	11.3	10.6	7.0	8.7	5.5	.6	3.3
31	14.9	13.6	14.3	---	---	---	9.6	5.4	7.7	6.2	1.5	4.0
MONTH	25.2	9.9	17.9	19.9	6.1	13.9	15.5	1.9	7.1	14.9	.1	7.6

07311700 NORTH WICHITA RIVER NEAR TRUSCOTT, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.3	4.9	5.8	16.6	11.1	14.0	14.2	11.2	12.4	20.9	16.9	18.7
2	8.6	2.6	5.7	17.8	13.2	15.2	17.2	10.5	13.5	20.2	17.1	18.4
3	11.2	5.1	8.0	14.1	10.2	12.3	16.4	13.2	14.6	24.7	17.1	20.6
4	9.0	5.8	7.5	16.0	8.4	12.3	18.0	10.0	14.0	25.9	19.9	22.6
5	9.2	3.8	6.5	17.0	11.1	14.0	21.9	14.2	17.8	27.0	21.4	23.9
6	10.8	5.0	7.9	20.3	14.1	17.3	24.0	16.1	19.9	31.4	22.4	26.4
7	12.4	6.1	9.1	21.2	16.4	18.5	22.9	17.5	20.0	31.1	23.6	27.1
8	13.1	6.6	9.9	18.1	11.8	15.1	20.6	13.6	17.1	30.6	23.4	26.7
9	14.2	8.6	11.5	19.1	11.8	15.3	21.0	13.8	17.2	28.5	21.2	24.9
10	16.0	9.9	12.8	19.6	13.1	15.7	22.0	15.9	18.9	29.2	20.8	24.6
11	13.0	9.3	11.1	17.3	9.6	13.4	19.8	14.9	17.3	31.3	22.9	26.8
12	11.5	5.8	9.0	18.1	9.7	14.0	15.0	13.9	14.4	27.4	22.4	24.9
13	13.9	8.9	11.2	19.5	11.5	15.6	20.0	12.5	15.7	25.9	18.1	22.0
14	13.1	7.4	10.4	22.3	15.0	18.4	24.2	16.5	20.0	26.4	17.6	21.9
15	14.8	8.6	11.6	24.0	16.2	19.8	24.4	16.4	20.5	28.1	19.2	23.6
16	13.5	9.1	11.5	19.5	9.2	14.1	22.1	16.5	18.9	28.9	22.5	25.2
17	17.5	10.6	13.8	11.5	7.4	9.0	23.1	16.9	19.8	27.2	22.0	23.9
18	16.1	11.1	13.8	15.6	7.4	11.0	27.2	19.5	23.1	27.1	19.6	23.0
19	12.7	7.4	10.2	18.4	9.3	13.8	27.6	21.5	24.2	22.1	17.5	19.0
20	12.5	9.4	10.7	20.4	11.3	15.8	24.5	17.8	21.1	26.8	15.4	20.8
21	15.4	10.0	12.4	17.1	15.4	16.1	23.9	16.7	20.2	30.3	19.8	25.1
22	16.5	13.1	14.6	15.5	13.3	14.5	21.4	17.2	19.2	31.6	23.0	27.1
23	16.2	8.4	12.3	16.2	13.3	14.6	23.4	16.2	19.6	31.7	23.2	27.5
24	19.1	11.5	15.4	17.8	14.8	16.1	26.1	17.3	21.4	33.8	23.9	28.6
25	18.0	14.8	16.4	20.2	16.0	18.0	25.7	19.3	22.4	32.0	25.1	28.5
26	16.1	10.8	13.6	22.9	17.5	20.1	27.4	19.0	23.1	28.9	21.7	25.1
27	16.3	9.3	12.9	22.7	17.7	20.3	23.9	20.4	22.5	30.9	24.9	27.7
28	16.3	10.6	13.5	20.5	17.2	19.1	25.4	17.5	21.2	31.7	24.5	28.0
29	16.8	11.4	14.1	20.4	16.7	18.5	25.7	19.1	22.3	32.8	25.2	28.8
30	---	---	---	19.8	14.3	17.0	22.4	17.3	20.2	33.2	25.5	29.1
31	---	---	---	16.8	14.2	15.0	---	---	---	32.4	24.8	28.3
MONTH	19.1	2.6	11.1	24.0	7.4	15.6	27.6	10.0	19.1	33.8	15.4	24.8

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.7	24.2	27.5	28.2	25.1	26.5	32.9	24.4	28.6	33.5	24.5	28.7
2	27.2	24.4	25.2	33.0	25.1	28.6	34.2	24.9	29.4	33.9	25.0	28.9
3	24.4	22.1	23.2	33.5	27.0	30.0	34.2	25.7	29.9	34.0	25.2	28.9
4	26.0	22.2	24.1	33.1	26.2	29.6	34.8	26.9	30.4	34.3	25.1	29.3
5	28.1	23.9	25.8	32.5	25.9	29.1	34.4	26.7	30.1	34.8	25.1	29.0
6	29.2	23.0	26.0	32.9	25.6	29.2	35.1	26.7	30.4	33.2	25.5	28.7
7	30.5	23.2	26.7	33.8	26.0	29.6	35.0	26.9	30.5	31.9	23.9	27.5
8	30.4	23.1	26.6	33.3	26.4	29.7	35.2	27.0	30.5	32.1	23.7	27.3
9	29.1	24.3	26.2	33.5	25.9	29.6	34.7	26.5	30.0	32.5	23.9	27.5
10	29.9	24.5	26.6	33.8	26.1	29.7	34.8	26.7	30.2	32.7	24.8	28.0
11	30.5	25.1	27.2	34.1	26.5	30.2	35.4	26.3	30.6	30.0	24.9	27.0
12	31.8	25.4	28.2	34.3	27.8	30.6	35.6	26.7	30.7	31.7	23.5	26.9
13	31.9	25.3	28.3	31.8	27.7	29.5	36.2	27.3	30.9	31.5	23.9	27.3
14	27.9	24.1	25.8	33.9	26.1	30.0	34.3	25.9	29.3	32.8	23.8	27.8
15	31.1	21.5	26.3	34.7	27.1	31.0	34.5	24.8	29.2	29.9	23.3	26.2
16	28.4	25.0	26.5	34.5	28.2	31.2	34.8	26.5	29.9	29.5	20.9	24.7
17	25.0	16.9	19.9	33.1	26.4	29.4	34.7	25.7	29.7	28.8	20.9	24.2
18	20.4	18.5	19.3	34.0	25.6	29.5	34.6	25.1	29.5	28.5	19.2	23.5
19	24.8	20.2	22.0	34.8	26.7	30.6	34.0	26.3	29.6	27.7	19.9	23.3
20	28.1	22.9	25.1	35.3	27.1	31.0	33.4	24.2	28.2	26.2	20.5	22.6
21	28.3	24.8	26.6	34.6	25.7	30.1	34.1	25.1	28.8	27.1	18.3	22.1
22	31.5	24.5	27.8	32.5	25.6	28.9	33.9	25.5	28.7	29.6	21.7	24.9
23	30.7	26.2	28.4	34.1	25.5	29.1	33.9	25.1	29.0	26.5	21.5	23.9
24	33.7	25.7	29.3	33.9	25.6	29.2	34.2	25.4	29.5	22.0	16.4	19.4
25	33.1	26.5	29.7	31.3	25.2	27.7	35.1	25.6	29.9	21.0	13.4	16.8
26	28.9	25.0	26.6	33.4	25.3	28.6	35.0	26.6	30.4	21.5	12.7	17.0
27	29.9	24.3	26.6	32.7	26.2	28.2	34.3	26.6	30.0	23.2	14.1	18.5
28	27.5	25.0	25.9	31.6	24.9	27.8	33.9	25.8	29.2	23.9	15.1	19.3
29	25.9	24.2	25.0	32.8	25.5	28.6	33.6	25.6	29.1	24.2	16.5	20.1
30	28.6	23.4	26.0	32.2	24.8	28.1	33.4	25.4	28.8	24.4	17.3	20.5
31	---	---	---	32.4	24.7	28.3	32.9	25.4	28.4	---	---	---
MONTH	33.7	16.9	25.9	35.3	24.7	29.3	36.2	24.2	29.7	34.8	12.7	24.7
YEAR	36.2	.1	18.9									

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX

LOCATION.--Lat 33°37′19", long 100°12′31", King County, Hydrologic Unit 11130205, on right bank 1.0 mi downstream from ranch road crossing, 2.9 mi upstream from Willow Creek, 6.6 mi east of Guthrie, and 91.5 mi upstream from mouth.

DRAINAGE AREA.--223 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1984 to Sep 1985, May 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,590.0 ft above sea level. Satellite telemeter at station.

REMARKS.--Discharge represents flow diverted by pumping from South Wichita River at Low Flow Dam near Guthrie (station 07311782) via pipeline to Truscott Brine Lake near Truscott (station 07311669). Flow is determined from digital recorder monitoring flowmeter in pipeline.

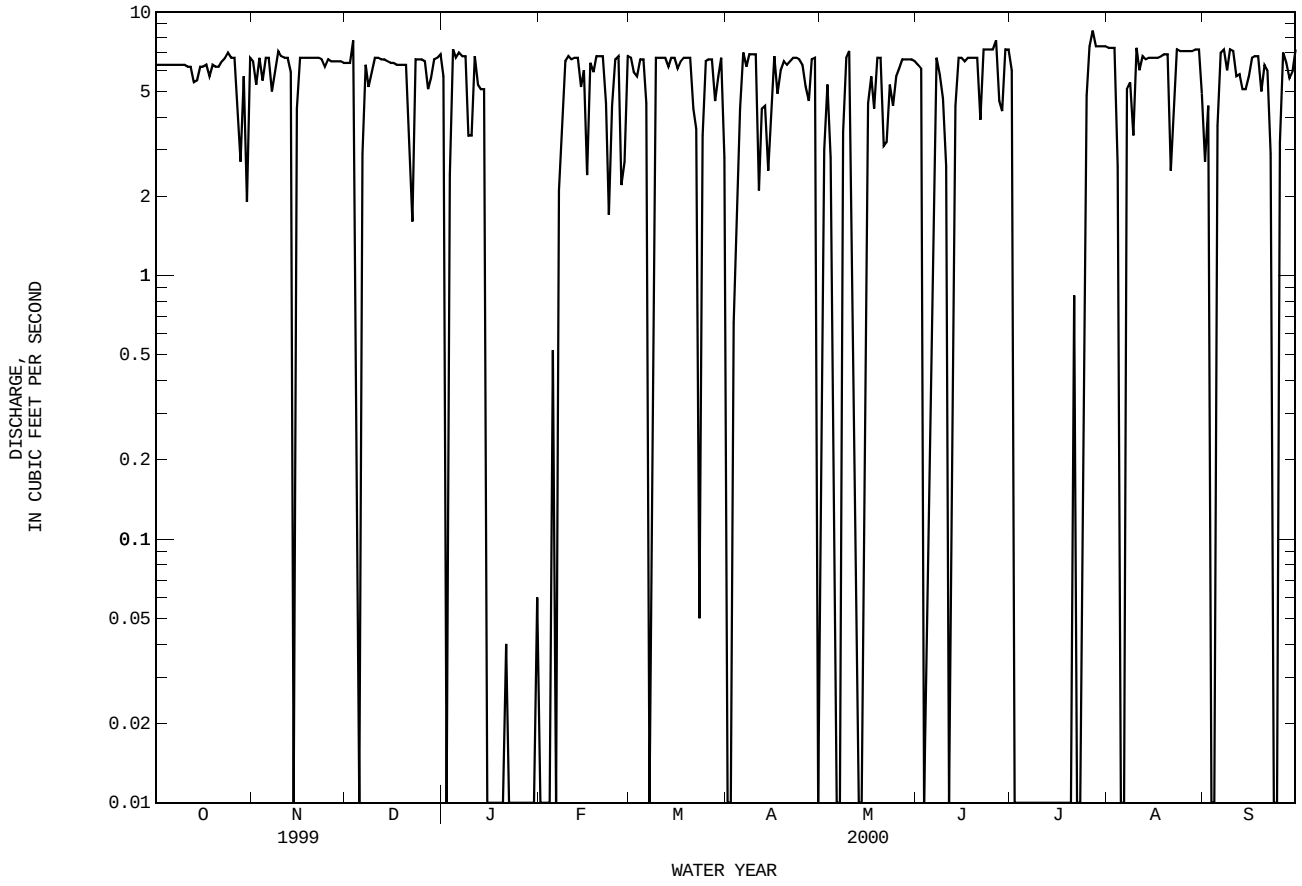
COOPERATION.--Discharge data furnished by the U.S. Army Corps of Engineers, Tulsa District.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.3	6.5	e6.4	5.7	.00	6.7	.00	1.0	6.3	6.0	7.3	2.7
2	6.3	5.3	e6.4	.00	.00	5.9	.00	3.0	6.1	.00	7.3	4.4
3	6.3	6.7	7.8	2.4	.00	5.7	.66	5.3	.00	.00	7.3	.00
4	6.3	5.5	.07	7.2	.00	6.6	2.0	2.8	.16	.00	2.6	.01
5	6.3	6.7	.00	6.7	.52	6.6	4.3	.22	.98	.00	.00	3.7
6	6.3	6.7	2.9	7.0	.00	4.5	e7.0	.00	3.1	.00	.00	7.0
7	6.3	5.0	6.3	6.8	2.1	.00	e6.2	.00	6.7	.00	5.1	7.2
8	6.3	6.0	5.2	6.8	4.0	1.1	e6.9	3.5	5.8	.00	5.4	6.0
9	6.3	7.1	5.9	e3.4	6.5	6.7	e6.9	6.7	4.7	.00	3.4	7.2
10	6.3	6.8	6.7	e3.4	6.8	6.7	e6.9	7.1	2.6	.00	7.3	7.1
11	6.2	6.7	6.7	6.8	6.6	6.7	2.1	2.5	.00	.00	6.0	5.7
12	6.2	6.7	6.6	e5.3	6.7	6.7	4.3	.67	.69	.00	6.8	5.8
13	5.4	5.9	6.6	5.1	6.7	6.2	4.4	.00	4.4	.00	6.6	5.1
14	5.5	.00	6.5	5.1	5.2	6.7	2.5	.00	6.7	.00	6.7	5.1
15	6.2	4.3	6.4	.00	6.0	6.7	4.0	1.2	6.7	.00	6.7	5.7
16	6.2	6.7	6.4	.00	2.4	6.1	6.8	4.5	6.5	.00	6.7	6.7
17	6.3	6.7	6.3	.00	6.4	6.5	4.9	e5.7	6.7	.00	6.7	6.8
18	5.7	6.7	6.3	.00	5.9	6.7	6.0	4.3	6.7	.00	6.8	6.8
19	6.3	6.7	6.3	.00	6.8	6.7	6.5	6.7	6.7	.00	6.9	5.0
20	6.2	6.7	6.3	.00	6.8	6.7	6.3	6.7	6.7	.00	6.9	6.3
21	6.2	6.7	3.2	.04	6.8	4.3	6.5	3.1	3.9	.84	2.5	6.0
22	6.5	6.7	1.6	.00	4.5	3.6	6.7	e3.2	7.2	.00	4.3	2.9
23	6.7	6.6	6.6	.00	1.7	.05	6.7	e5.3	7.2	.00	7.2	.00
24	7.0	6.2	6.6	.00	4.4	3.4	6.6	4.4	7.2	.81	7.1	.00
25	6.7	6.6	6.6	.00	6.6	6.5	6.3	5.7	7.2	4.8	e7.1	3.2
26	6.7	6.5	6.5	.00	6.8	6.6	5.2	6.1	7.8	7.4	e7.1	7.0
27	4.2	6.5	5.1	.00	2.2	6.6	4.6	6.6	4.6	8.5	e7.1	6.4
28	2.7	6.5	5.6	.00	2.7	4.6	6.6	6.6	4.2	7.4	e7.1	5.6
29	5.7	e6.5	6.6	.00	6.8	5.7	6.7	6.6	7.2	7.4	7.2	5.9
30	1.9	e6.4	e6.7	.00	---	6.7	.00	6.6	7.2	7.4	7.2	7.2
31	6.7	---	e6.9	.06	---	2.8	---	6.5	---	7.4	4.9	---
TOTAL	184.2	184.60	174.07	71.80	121.92	167.05	144.56	122.59	151.93	57.95	181.30	148.51
MEAN	5.94	6.15	5.62	2.32	4.20	5.39	4.82	3.95	5.06	1.87	5.85	4.95
MAX	7.0	7.1	7.8	7.2	6.8	6.7	7.0	7.1	7.8	8.5	7.3	7.2
MIN	1.9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	365	366	345	142	242	331	287	243	301	115	360	295

e Estimated

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued



07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1984 to current year.
PESTICIDE DATA: Sep 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1984 to current year. Oct 1986 to Apr 1987, published as “South Wichita River below Low Flow Dam near Guthrie” (station 07311783).
WATER TEMPERATURE: Oct 1984 to current year. Oct 1986 to Apr 1987, published as “South Wichita River below Low Flow Dam near Guthrie” (station 07311783).

INSTRUMENTATION.--Water-quality monitor since Oct 1984.

REMARKS.--Records fair. Interruption in the record was caused by malfunction of the instrument or when the pumps were not running. Where maximum and minimum specific conductance values are not shown, mean values are sometimes estimated. Temperature and specific conductance values for days of zero flow through the pipeline are published if water is present behind the low flow dam. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1991 to 2000. The standard error of estimate for dissolved solids is 9%, chloride is 11%, sulfate is 8% and for hardness is 7%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. Samples for chemical analyses are collected a half a mile upstream from the collection pool. No flow through the pipeline Oct 25, Apr 24,25, May 27,29-31, Jun 7-9,14,19,20, Sep 1,2,5 and 16.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 49,800 microsiemens, Aug 30, 2000; minimum, 200 microsiemens, Jul 3, 1986.
WATER TEMPERATURE: Maximum, 36.0°C, Jul 5, 11-13, 21, 1996; minimum, 0.0°C, Dec 23, 1989, Dec 22, 1990.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 49,800 microsiemens, Aug 30; minimum, 4,390 microsiemens, Mar 23.
WATER TEMPERATURE: Maximum, 33.6°C, Aug 3; minimum, 6.2°C, Dec 6.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT											
06...	1500	6.3	51400	8.3	22.0	16.5	242	4500	4300	1300	317
NOV											
12...	1140	6.7	49200	7.9	16.9	11.3	148	4500	4400	1300	306
JAN											
03...	1205	2.4	48700	7.7	11.4	9.1	108	4500	4400	1300	309
19...	1415	.01	51700	7.8	14.2	10.2	130	4200	4100	1200	300
FEB											
28...	1200	2.7	50300	7.9	14.0	9.3	117	4100	4000	1200	295
MAR											
13...	1225	6.2	50600	7.8	14.9	13.1	167	4700	4600	1300	325
MAY											
02...	1215	3.0	49300	7.8	18.8	5.8	80	4400	4300	1200	315
15...	1310	1.2	51800	7.9	23.2	--	--	4500	4400	1300	329
JUN											
27...	1330	4.6	49300	7.5	26.0	6.4	98	4200	4000	1200	289
JUL											
20...	1235	.01	54000	7.3	27.9	4.2	68	4600	4500	1300	329
AUG											
09...	1255	3.4	55900	7.6	27.7	6.0	97	4500	4400	1300	329
SEP											
12...	1320	5.8	56800	7.8	25.3	10.0	158	5300	5200	1400	418

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA- LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)
OCT											
06...	10800	71	46	--	--	120	3200	18000	.45	4.7	33600
NOV											
12...	10900	71	44	--	--	110	3000	17000	.45	4.5	32800
JAN											
03...	10400	67	42	--	--	120	3200	18000	.37	37	33000
19...	10600	71	43	--	--	120	3100	18000	.41	13	33200
FEB											
28...	11000	75	43	--	--	110	3200	19000	.49	5.9	34400
MAR											
13...	11500	73	43	--	--	110	3000	18000	.43	4.4	34600
MAY											
02...	11300	74	40	--	--	98	3100	18000	.43	2.1	34300
15...	11500	75	42	--	--	99	3200	19000	.54	2.2	35200
JUN											
27...	8470	57	32	--	--	160	2900	14000	.47	11	26900
JUL											
20...	12300	79	44	125	102	--	3200	19000	.51	7.7	36700
AUG											
09...	11900	77	46	120	98	--	3200	20000	.75	7.8	36800
SEP											
12...	13300	79	50	118	97	--	3200	20000	.48	6.9	38600

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS- PENDED (MG/L) (00530)	NITRO- GEN, NITRATE DIS- SOLVED (MG/L AS N) (00618)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, TOTAL (MG/L AS N) (00600)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS- PHORUS TOTAL (MG/L AS P) (00665)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
OCT											
06...	72	.156	.027	.183	.227	.33	--	.15	<.050	<.050	.105
NOV											
12...	54	.118	.074	.192	.118	.29	--	.10	<.050	<.050	<.010
JAN											
03...	42	.222	.120	.342	.234	.57	--	.22	<.050	<.050	.019
19...	33	.191	.113	.304	.252	.78	.22	.47	<.050	<.050	.021
FEB											
28...	21	.156	.092	.248	.193	.60	.16	.35	E.032	<.050	<.010
MAR											
13...	29	.127	.094	.221	.151	.49	.12	.27	<.050	<.050	<.010
MAY											
02...	34	--	<.010	<.050	.136	--	.19	.32	<.050	<.050	<.010
15...	21	--	<.010	<.050	.146	--	.01	.16	<.050	<.050	<.010
JUN											
27...	100	--	<.010	<.050	.250	--	.34	.59	E.031	<.050	<.010
JUL											
20...	58	.097	.058	.155	.369	.75	.23	.60	E.030	<.050	<.010
AUG											
09...	46	.147	.048	.195	.314	.65	.14	.46	<.050	<.050	.012
SEP											
12...	25	.183	.055	.238	.174	.55	.14	.31	<.050	<.050	<.010

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
06...	.32	<4	<4	32	E20	<20	<400	15	<2.0	<20	<500
NOV											
12...	--	<4	<4	33	E26	M	<240	<1	<1.0	2	<300
JAN											
03...	.06	E2	2	30	1.2	6	<8.0	<1	<.80	1	<10
19...	.06	<4	<4	25	34	<1	<200	<10	3.4	8	<250
FEB											
28...	--	<10	2	30	30	<1	<200	<10	2.7	<1	<250
MAR											
13...	--	E1	<10	E29	32	E1	<1.4	E14	2.5	E12	<13
MAY											
02...	--	<5	--	35	--	<10	--	<1	--	<1	--
15...	--	<10	<20	35	26	<1	<1.4	2	<1.6	<12	<13
JUN											
27...	--	<26	--	37	--	<1	--	<10	--	<12	--
JUL											
20...	--	<26	<20	41	38	<1	<1.4	<10	<8.0	<12	<13
AUG											
09...	.04	<10	--	37	--	<1	--	<10	--	<12	--
SEP											
12...	--	3	<8	34	33	<1	<2.8	4	<8.0	<12	<13

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
06...	<620	<500	<20	<5000	<56	<110	<.10	<.1	<780	<2000	<4
NOV											
12...	<780	<300	2	<3000	E36	E36	<.10	<.2	<980	<1200	<4
JAN											
03...	<20	<250	2	<2500	59	2.5	<.60	<.2	<39	<40	3
19...	<20	<250	9	<2500	110	111	<.60	<.2	<39	<1000	<4
FEB											
28...	<20	<250	<4	<2500	110	134	<.30	<.2	45	<1000	7
MAR											
13...	M	<250	E10	<10	E60	78	<.30	<.2	E18	<14	<5
MAY											
02...	<20	--	<20	--	44	--	<.30	--	<39	--	<5
15...	<20	<250	10	<10	36	20	<.30	.4	<18	<14	<5
JUN											
27...	<310	--	<10	--	400	--	<.30	--	<390	--	<5
JUL											
20...	<460	<250	<10	<10	150	161	<.30	<.2	<18	<14	<26
AUG											
09...	<460	--	<10	--	130	--	<.30	--	--	--	<10
SEP											
12...	<460	<300	<10	<10	62	58	<.30	<.2	<18	<14	4

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
OCT											
06...	<4	<1	<10	<620	<1000	--	--	--	--	--	--
NOV											
12...	4	<1	<1.0	<780	<600	--	--	--	--	--	--
JAN											
03...	3	<1	<1.0	<31	<20	--	--	--	--	--	--
19...	<4	<10	<1.0	220	<500	--	--	--	--	--	--
FEB											
28...	5	<10	<10	E17	<500	--	--	--	--	--	--
MAR											
13...	<12	E10	<10	<31	<500	--	--	--	--	--	--
MAY											
02...	--	<10	--	<31	--	--	--	--	--	--	--
15...	6	<10	<10	<31	<500	--	--	--	--	--	--
JUN											
27...	--	<10	--	<310	--	--	--	--	--	--	--
JUL											
20...	<24	<10	<10	<460	<500	<.040	<.10	<1.00	<.100	<.100	<.100
AUG											
09...	--	<10	--	<460	--	<.040	<.10	<1.00	<.100	<.100	<.100
SEP											
12...	<10	<10	<10	<460	<600	--	--	--	--	--	--

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	156	<2.00
AUG											
09...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	134	<2.00
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	<.100	<.030	147	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
AUG											
09...	<.100	<.030	119	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	184.2	44830	30990	15410	16100	7990	3100	1540	4300
NOV.	1999	184.6	44960	31080	15490	16100	8030	3100	1540	4300
DEC.	1999	174.07	47230	32660	15350	17000	8000	3100	1470	4400
JAN.	2000	71.8	46850	32400	6280	16900	3270	3100	606	4400
FEB.	2000	121.92	43090	29780	9800	15400	5060	3100	1000	4200
MAR.	2000	167.05	39340	27190	12260	14000	6310	2800	1280	3900
APR.	2000	144.56	40690	28120	10970	14400	5630	3000	1170	4100
MAY	2000	122.59	37800	26110	8640	13400	4440	2800	918	3800
JUNE	2000	151.93	37760	26080	10700	13300	5450	2900	1180	3900
JULY	2000	57.95	46220	31960	5000	16600	2600	3100	487	4400
AUG.	2000	181.3	47750	33030	16170	17200	8440	3100	1540	4500
SEPT	2000	148.51	47770	33030	13250	17200	6920	3100	1260	4500
TOTAL		1710.48	**	**	139300	**	72140	**	13990	**
WTD.AVG.		4.7	43640	30170	**	15600	**	3000	**	4200

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	46200	45600	45900	45500	44600	45100	---	---	e45300	48700	48300	48500
2	46100	45500	45800	46100	45500	45900	45400	45000	45200	49000	48600	48800
3	45600	45000	45300	45900	44800	45200	45400	45100	45300	48900	48200	48600
4	45500	44900	45200	45700	45000	45300	46600	45400	46000	49200	48700	49000
5	---	---	e44800	45700	44900	45200	47100	46500	46800	48700	47900	48400
6	45100	44600	44900	45200	44600	44900	47200	46700	47000	48400	47600	48100
7	45200	44500	44900	44900	44300	44600	48000	47000	47500	48100	47600	47900
8	44600	43700	44100	44600	44100	44400	48200	47200	48000	48200	47500	47900
9	44200	43800	44100	44400	43800	44200	47700	46800	47300	47500	46200	46800
10	44500	44100	44300	44400	44000	44200	47400	47000	47300	46600	44000	45200
11	44700	44100	44500	44600	44000	44300	47500	46900	47300	45200	43700	44700
12	44800	44200	44600	44500	43000	43700	47500	45500	46900	44400	43700	44200
13	44800	44200	44500	43800	43300	43500	47600	46300	46900	44400	43900	44200
14	44500	44000	44300	43900	43500	43700	47200	46300	46700	44400	43300	44100
15	44500	43800	44200	44100	43700	43900	47500	46800	47300	---	---	e44200
16	44900	44300	44600	44000	43500	43800	47400	46700	47100	---	---	e43500
17	45600	44900	45400	45700	44000	44900	47200	46900	47000	---	---	e43000
18	45700	45200	45400	45800	45100	45400	47700	47200	47500	---	---	e42500
19	45700	45200	45400	45400	45000	45100	47800	47500	47700	---	---	e42000
20	46200	45300	45800	45400	45000	45200	47900	47300	47600	43200	42500	42900
21	45900	44800	45400	45300	44800	45100	47900	47000	47500	43400	42800	43100
22	45400	44500	45000	45700	45200	45400	47700	47000	47400	43100	41900	42500
23	44900	44200	44600	45900	45400	45600	47600	46900	47400	43000	42300	42700
24	44600	44200	44400	45900	45400	45600	48100	47200	47700	43400	42500	43200
25	44600	44000	44400	45800	45100	45600	48300	48000	48200	43600	40800	42900
26	44500	44000	44200	45900	45300	45700	48200	46300	47500	44400	43500	44000
27	44200	43800	44100	46000	45200	45600	48000	47200	47800	44500	43900	44200
28	44600	44200	44400	45800	45200	45500	48100	47200	47700	44100	43200	43800
29	44800	44000	44600	---	---	e45400	48100	47500	47900	44300	43800	44000
30	45200	44000	44800	---	---	e45400	48200	47600	47900	44800	43800	44300
31	45300	45100	45200	---	---	---	48700	48200	48400	44600	44000	44400
MONTH	---	---	44800	---	---	44900	---	---	47200	---	---	45000

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	44600	44100	44300	43600	43200	43400	38100	35100	36200	42600	41600	42100
2	44500	43300	43800	43700	42400	43100	39300	38100	38800	42300	41500	42100
3	44400	42300	43200	43700	42500	43300	39100	38600	38900	42900	41900	42300
4	43900	43000	43300	45300	43000	44000	38900	37800	38400	43900	42700	43400
5	43700	43100	43400	44200	43600	43900	38500	37900	38200	44100	43300	43700
6	43600	42800	43300	44300	43600	43900	39700	38500	39200	44500	43500	43900
7	43400	42900	43200	44200	43700	43900	39700	39300	39500	44400	43000	43800
8	43400	42900	43100	44500	43700	44100	40200	39700	40000	43700	42500	43100
9	43300	42300	42800	45300	44000	44600	40600	40200	40500	43700	42700	43100
10	43100	42400	42600	44900	44100	44500	41500	40600	41000	43900	43400	43700
11	43500	42600	43100	46000	44600	45200	41400	40600	40900	44500	43700	44100
12	43700	42600	43100	45700	44800	45500	41600	40800	41300	44800	43900	44400
13	43300	42600	42900	46600	45400	46000	41600	41100	41300	45100	44600	44900
14	43500	43000	43200	45700	44500	45400	41500	41000	41200	45500	45000	45300
15	43200	42600	42900	44800	43800	44400	41500	40500	41000	45900	45300	45600
16	43600	42900	43200	44800	44200	44500	40700	40200	40500	46200	45700	46000
17	43800	42600	43300	45000	43900	44700	40800	40400	40700	46200	45500	45900
18	43700	41900	43000	44900	44200	44600	41000	40400	40600	47000	45400	45800
19	44300	43600	43900	45200	44200	44700	41000	39800	40500	47000	46100	46800
20	43900	43300	43600	44900	43700	44200	41100	39800	40300	46600	46100	46400
21	44200	42900	43700	44400	43600	44000	40800	40100	40400	46100	45000	45600
22	43400	42100	42900	44100	43600	43900	41500	40800	41100	---	---	e45200
23	42400	41700	42000	43800	4390	19100	42000	41300	41700	---	---	e44600
24	43100	42200	42800	9620	5170	7870	42000	41100	41600	44500	43800	44200
25	43000	42100	42500	16400	9620	13400	41700	40800	41300	44200	41600	43700
26	43400	42400	43000	22100	16400	19000	41700	40800	41400	43200	18100	31700
27	43400	42800	43000	27700	22100	24700	41600	41200	41400	21200	12300	13900
28	43200	42900	43100	31500	27700	29600	41800	41200	41500	22900	15300	19200
29	43500	42800	43200	34000	31500	32300	41900	41000	41600	24500	22200	23600
30	---	---	---	35900	34000	34800	42200	41400	41700	25800	21900	24200
31	---	---	---	37700	35200	36500	---	---	---	30200	25800	28000
MONTH	44600	41700	43200	46600	4390	38500	42200	35100	40400	---	---	40300

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	33800	26600	32000	42400	41500	42100	46700	45700	46200	48400	47700	48100
2	37800	26600	35700	41700	41200	41400	46200	45100	45700	47900	46800	47300
3	38400	37400	37800	41300	40900	41100	---	---	e45800	47500	47100	47300
4	37700	35900	37000	41700	41000	41400	---	---	e45800	47700	47300	47500
5	36300	33000	35100	41900	41100	41500	46400	45400	45900	47700	47200	47500
6	34600	30300	33300	41900	41500	41700	46800	46300	46500	48300	47500	47900
7	33500	30300	32500	42400	41800	42100	47400	46600	47000	48700	46900	47900
8	36100	33300	34900	43200	42400	42800	48300	47400	47900	47800	46100	46700
9	37700	35100	36700	44000	43200	43700	49200	48200	48800	47200	45700	46400
10	38600	37500	38100	44400	43900	44200	49200	48100	48700	46500	45500	46000
11	39600	37700	38900	44600	43900	44300	49000	47600	48300	45900	45000	45400
12	40200	39400	39900	44600	43800	44400	48900	47400	48100	47000	45100	46100
13	40100	39300	39800	44700	44200	44400	48600	47100	48000	47600	47000	47300
14	39700	37000	38200	45100	44500	44900	48800	47900	48400	47700	47000	47400
15	40200	39300	39600	45800	45100	45500	48500	47500	48000	48700	47700	48300
16	40600	40000	40400	46200	45500	45800	47800	47000	47500	49300	48500	48900
17	41000	39700	40300	46500	45800	46200	47700	46800	47400	49000	48100	48700
18	42200	40400	41400	46400	45400	46000	47700	46500	47100	49000	47900	48500
19	42300	40300	41600	45700	45200	45500	47600	46600	47200	48600	47800	48100
20	40400	38500	39700	45500	45000	45300	---	---	e46900	49100	47700	48500
21	40000	36400	38900	45900	45300	45600	---	---	e47000	49100	47100	48500
22	36400	33800	35300	46600	45900	46200	47300	46800	47100	---	---	e47600
23	35000	33500	34400	47000	46500	46700	47900	47200	47500	48000	47400	47600
24	36300	34900	35800	47300	46800	47000	48600	46900	47900	48700	47700	48200
25	37700	36300	37000	47600	46900	47300	48800	47600	48300	48900	48600	48800
26	38100	35600	36600	47600	46400	47100	48900	48400	48700	49500	48900	49300
27	39600	37900	38900	47500	46600	47000	49200	48800	49000	49700	48600	49000
28	40100	39300	39700	47100	46200	46700	49000	48600	48800	49200	47700	48100
29	41900	39700	40900	46600	45900	46300	49600	48700	49200	48500	47200	47800
30	42300	41000	41700	46700	46100	46400	49800	48300	49000	48500	47000	47800
31	---	---	---	46600	46000	46300	49300	47600	48300	---	---	---
MONTH	42300	26600	37700	47600	40900	44700	---	---	47600	---	---	47800

e Estimated

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.1	17.0	19.1	19.2	15.2	16.9	---	---	---	---	---	---
2	---	---	---	16.7	14.1	15.4	16.2	13.8	14.6	---	---	---
3	---	---	---	15.9	11.8	14.1	15.2	12.1	13.7	---	---	---
4	---	---	---	15.9	12.9	14.5	13.6	8.4	10.7	9.9	7.0	8.4
5	---	---	---	17.8	14.0	15.8	8.8	6.6	7.8	10.6	8.1	9.4
6	23.3	18.1	20.5	19.0	15.4	17.1	8.9	6.2	7.5	11.5	8.7	9.9
7	22.6	19.2	20.9	19.2	15.8	17.4	11.5	7.9	9.7	11.6	9.1	10.3
8	23.6	19.9	21.4	18.2	15.8	17.0	12.3	10.2	11.3	13.5	11.6	12.4
9	23.9	19.4	21.4	18.8	15.6	17.2	11.5	8.6	9.8	---	---	---
10	23.4	19.0	21.2	19.6	15.9	17.7	10.2	7.8	8.9	---	---	---
11	24.2	19.2	21.5	19.8	15.7	17.7	12.2	10.0	11.1	---	---	---
12	24.3	19.3	21.6	19.5	15.0	17.2	11.9	9.8	10.6	---	---	---
13	23.9	19.3	21.5	19.5	15.0	17.3	11.6	9.1	10.3	---	---	---
14	23.8	19.4	21.4	18.6	16.5	17.7	10.6	9.2	9.9	---	---	---
15	24.1	20.3	21.9	18.4	16.4	17.5	10.3	8.0	9.0	---	---	---
16	22.0	18.9	20.4	17.9	15.2	16.5	9.8	7.6	8.8	---	---	---
17	19.3	14.6	15.9	17.5	15.2	16.5	11.7	8.4	9.7	---	---	---
18	15.3	13.5	14.3	17.7	14.9	16.3	10.3	8.4	9.4	---	---	---
19	17.1	11.6	14.1	16.7	14.5	15.6	11.0	8.4	9.6	---	---	---
20	17.6	12.0	14.6	15.3	12.8	14.2	9.9	7.2	9.2	13.8	12.1	12.8
21	18.9	12.8	15.5	16.1	12.2	14.0	9.3	7.9	8.7	12.6	11.8	12.3
22	19.4	13.7	16.4	15.6	12.1	13.6	9.7	7.5	8.6	13.1	11.0	12.4
23	19.2	14.7	16.6	14.2	11.2	12.6	10.7	7.4	8.9	14.3	11.7	12.7
24	18.8	14.7	16.5	13.5	9.3	11.4	11.2	8.5	9.7	12.7	11.0	11.7
25	19.2	15.2	17.0	13.0	8.6	10.6	11.6	10.0	10.9	11.7	8.7	10.8
26	19.8	15.7	17.4	13.3	7.8	10.5	13.3	11.6	12.2	11.0	8.6	10.0
27	19.1	15.9	17.5	14.8	9.7	11.9	12.6	10.9	11.7	8.6	7.8	8.3
28	20.0	17.2	18.4	14.7	10.5	12.4	---	---	---	9.1	8.2	8.7
29	21.5	17.1	18.9	---	---	---	---	---	---	10.3	8.5	9.3
30	19.1	16.1	17.3	---	---	---	---	---	---	11.6	9.9	10.7
31	16.7	15.1	16.0	---	---	---	13.3	10.5	11.9	12.2	10.5	11.5
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07311782 SOUTH WICHITA RIVER AT LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	12.4	11.8	12.1	17.4	13.9	15.6	16.4	14.1	15.2	22.8	18.7	20.6
2	12.8	11.2	12.1	19.1	15.0	16.5	15.7	14.6	15.1	22.5	19.5	20.8
3	12.9	10.9	12.3	15.6	12.1	14.2	15.9	13.9	14.8	22.3	19.7	20.8
4	13.2	9.7	11.2	17.7	12.7	14.7	15.4	11.8	13.7	22.9	21.2	22.3
5	12.1	9.7	11.0	18.1	14.2	16.2	16.8	15.3	16.0	23.6	22.2	23.0
6	12.8	10.1	11.3	19.2	15.9	17.7	19.9	16.6	18.4	24.9	23.1	24.1
7	13.3	10.1	11.7	19.7	16.7	18.4	21.8	18.8	20.0	26.7	24.7	25.7
8	14.0	11.6	12.7	17.2	14.3	15.9	19.4	16.9	18.3	26.8	24.6	25.5
9	14.9	12.2	13.8	17.9	14.3	15.8	19.5	16.2	17.9	27.1	23.4	25.2
10	16.4	12.1	14.2	19.2	14.6	16.3	19.6	17.6	18.6	26.4	23.1	24.7
11	14.9	12.4	13.7	18.2	13.5	15.7	20.0	16.9	18.4	27.1	24.6	25.7
12	14.2	10.9	12.7	18.1	13.7	15.8	17.3	16.1	16.7	26.7	24.4	25.6
13	15.6	12.9	14.3	17.6	14.1	15.4	18.2	15.2	16.5	25.0	22.6	23.9
14	14.9	12.5	13.7	18.7	15.8	17.1	20.7	17.6	18.9	24.7	21.9	23.4
15	16.7	13.5	14.8	21.0	16.8	18.4	22.4	19.0	20.4	25.4	22.5	23.6
16	15.5	13.5	14.7	19.4	11.6	14.8	21.2	18.3	19.9	25.7	24.2	24.9
17	17.0	13.7	15.1	14.9	10.4	12.2	22.5	19.1	20.8	25.8	24.2	24.9
18	16.6	13.4	14.9	15.2	10.4	12.7	23.8	20.8	22.1	25.9	22.2	23.9
19	14.6	11.3	13.3	17.4	11.1	13.9	25.6	21.3	23.2	23.8	20.0	21.2
20	15.8	13.6	14.7	18.8	13.1	15.6	22.8	18.2	20.6	23.4	19.0	20.7
21	16.3	13.7	14.8	18.1	15.3	16.3	21.6	17.8	19.9	24.1	21.7	22.9
22	16.7	14.9	15.8	16.8	15.3	15.8	20.9	18.3	19.7	---	---	---
23	16.0	12.0	14.3	16.3	13.7	15.5	22.0	17.2	19.6	---	---	---
24	18.1	14.4	16.2	16.9	14.4	15.1	22.7	18.1	20.4	27.2	24.8	26.1
25	18.2	15.8	17.2	18.4	16.8	17.6	23.4	19.5	21.3	29.7	25.2	27.1
26	17.0	13.9	15.5	20.8	17.0	19.3	24.8	19.6	22.0	28.4	23.1	26.0
27	16.1	12.6	14.5	21.6	19.2	20.5	24.3	21.9	22.9	29.3	25.6	27.3
28	16.2	13.5	15.0	21.0	20.2	20.6	23.9	20.0	21.9	27.6	24.9	26.2
29	16.5	14.1	15.3	21.4	19.5	20.4	24.3	20.3	22.2	28.6	26.6	27.9
30	---	---	---	20.1	19.3	19.6	24.0	20.5	21.9	28.6	26.1	27.3
31	---	---	---	19.3	15.8	18.6	---	---	---	27.6	26.8	27.2
MONTH	18.2	9.7	13.9	21.6	10.4	16.5	25.6	11.8	19.2	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	27.7	26.2	27.2	26.8	25.1	25.7	30.1	24.6	27.1	30.0	26.6	28.2
2	26.9	25.2	26.2	27.7	25.1	26.3	30.4	24.2	27.0	29.7	26.1	28.0
3	25.6	24.6	25.1	29.7	26.7	27.9	---	---	---	29.3	27.0	28.1
4	27.0	25.3	26.1	30.3	26.8	28.3	---	---	---	28.9	27.1	28.1
5	28.4	26.6	27.4	29.8	26.7	28.2	30.7	27.1	28.5	30.9	27.2	28.7
6	29.4	27.7	28.4	29.2	26.4	27.7	30.1	27.4	28.6	30.7	27.2	28.7
7	27.8	26.3	27.1	29.4	27.3	28.3	31.1	27.4	29.0	29.9	26.4	28.1
8	27.9	26.5	27.4	30.0	27.4	28.6	31.4	27.6	29.2	30.4	25.8	27.9
9	27.4	26.4	26.8	30.1	26.9	28.3	31.0	27.3	28.9	30.9	25.5	28.0
10	26.8	25.9	26.2	30.4	26.9	28.5	30.4	26.5	28.6	30.4	25.9	27.6
11	27.1	25.8	26.5	30.9	27.6	29.1	31.3	26.9	28.9	29.5	25.4	26.9
12	28.3	26.6	27.2	32.6	28.8	30.1	32.2	27.1	29.6	29.9	23.8	26.4
13	28.5	27.0	27.8	31.4	28.5	29.8	31.7	27.5	29.4	29.8	24.0	26.4
14	28.0	24.3	25.9	30.3	28.4	29.3	31.1	26.1	28.3	30.4	23.9	26.8
15	27.4	24.2	25.8	30.6	28.8	29.8	31.2	25.5	28.1	28.7	23.9	26.0
16	26.9	25.3	26.0	31.1	29.2	30.2	30.9	26.2	28.3	28.4	22.3	24.9
17	25.5	22.0	23.5	30.4	27.5	28.8	31.2	25.7	28.2	27.6	21.6	23.8
18	23.4	21.7	22.7	29.8	26.9	28.2	31.5	25.1	28.1	27.8	20.1	23.2
19	23.1	21.9	22.6	30.7	27.7	29.2	30.7	24.9	27.6	26.2	17.0	22.4
20	25.0	22.9	23.6	30.4	28.4	29.5	---	---	---	26.5	20.0	22.3
21	26.8	24.6	25.6	30.6	27.6	29.0	---	---	---	27.1	19.1	22.0
22	28.5	26.5	27.4	30.8	27.9	29.3	29.4	26.3	27.6	---	---	---
23	28.3	26.8	27.7	30.4	27.7	29.2	31.1	25.2	27.8	25.3	22.2	23.6
24	28.9	27.4	28.1	30.8	27.8	29.2	30.2	26.0	27.7	22.2	18.6	20.6
25	29.6	27.8	28.8	29.6	27.3	28.1	30.4	24.8	27.5	19.7	16.1	17.9
26	28.5	25.6	27.1	29.7	26.5	27.8	29.8	27.2	28.3	20.7	16.0	18.2
27	28.8	26.7	27.8	28.8	26.4	27.6	29.5	27.1	28.2	22.3	16.0	19.1
28	28.9	26.0	27.3	29.6	25.4	27.3	29.8	26.5	28.0	23.0	15.8	19.7
29	27.4	26.1	26.7	30.8	25.8	27.9	29.9	26.5	28.0	22.6	17.7	20.4
30	26.9	24.7	26.2	30.1	25.7	27.8	30.2	25.8	27.9	22.9	18.1	20.5
31	---	---	---	30.2	25.2	27.6	29.5	25.8	27.7	---	---	---
MONTH	29.6	21.7	26.4	32.6	25.1	28.5	---	---	---	---	---	---

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX

LOCATION.--Lat 33°37′19", long 100°12′31", King County, Hydrologic Unit 11130205, on right bank 1.1 mi downstream from ranch road crossing, 2.8 mi upstream from Willow Creek, 6.6 mi east of Guthrie, and 91.4 mi upstream from mouth.

DRAINAGE AREA.--223 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Sep 1985 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,590.0 ft above sea level. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. No known regulation. Low-flow diversions from South Wichita River at low-flow dam near Guthrie (station 07311782) via pipeline to Truscott Brine Lake near Truscott (station 07311669) began in May 1987. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1950, 20.8 ft in May 1954, at South Fork Wichita River near Guthrie (station 07311780) located about 1.1 mi upstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft^3/s:

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e.02	e.02	.02	.20	6.4	.03	3.9	2.4	.04	.02	e.01	e.01
2	e.03	e.03	.03	3.9	6.3	.03	6.5	3.7	8.3	5.6	e.01	e.01
3	e.02	e.03	.04	5.4	6.3	.04	4.6	1.2	12	6.9	e.01	2.3
4	e.03	e.03	.04	.05	6.3	.04	.23	3.8	9.2	6.8	e.01	5.1
5	e.03	e.02	1.1	.05	5.8	.03	.19	7.7	8.1	6.7	e.02	2.6
6	e.04	e.03	4.5	.05	6.4	.03	.90	7.7	6.6	6.6	.65	e.03
7	e.03	e.03	.04	.06	4.4	4.1	.16	7.7	.65	6.6	2.1	e.03
8	e.03	e.03	.07	.08	3.0	5.7	.03	4.5	.70	6.7	e.06	e.02
9	e.04	e.02	1.1	.12	.04	.07	.02	.04	3.6	6.4	.75	e.02
10	e.03	e.03	.04	.12	.04	.03	1.4	.04	4.1	6.5	e.04	e.01
11	e.02	e.03	.04	.12	.04	.04	.74	.04	7.6	6.5	e.02	e.01
12	e.02	.02	.04	.09	.04	.04	2.9	4.0	7.3	6.4	e.02	e.01
13	e.03	.02	.04	.08	.04	.04	2.1	7.2	3.6	6.5	e.02	e.01
14	e.03	.02	.04	.06	.05	.04	4.1	7.2	.03	6.5	e.02	e.01
15	e.02	.04	.04	4.1	.05	.04	3.1	6.6	.03	6.6	e.02	.00
16	e.02	.03	.04	7.3	1.7	.04	.03	2.7	.03	6.4	e.02	e.01
17	e.03	.03	.05	e7.4	.04	.04	4.9	1.5	1.6	6.2	e.02	e.01
18	e.03	.03	.05	e6.9	.05	.04	.01	2.7	1.0	6.1	e.02	e.01
19	e.03	.03	.05	6.4	.06	.04	3.3	.09	4.7	6.0	e.02	e.01
20	e.03	.03	.05	6.3	.05	.04	.01	.06	6.5	6.1	e.02	e.01
21	e.02	.03	.05	6.3	.04	.04	e.02	.68	9.0	5.5	e.02	e.01
22	e.02	.03	4.0	6.3	.04	.15	.01	e6.0	1.5	6.2	e.01	e.01
23	e.03	.03	.05	6.3	3.3	115	e.02	e.20	.03	6.0	e.01	e.01
24	e.03	.03	.05	6.3	1.9	23	e.02	2.0	.02	3.8	e.01	.01
25	e.03	.03	.05	6.4	.31	5.8	e.02	3.1	.02	.03	e.01	2.5
26	e.02	.03	.05	6.3	.04	3.7	e.01	42	.02	e.02	e.01	e.02
27	e.02	.03	.09	6.4	2.1	.68	e.02	8.6	.03	e.02	e.01	e.02
28	e.03	.03	.12	6.4	4.1	2.3	e.02	7.8	2.9	e.01	1.1	e.02
29	e.03	.03	.13	6.3	.03	1.3	e.03	5.8	.02	e.01	e.02	e.02
30	e.02	e.03	.14	6.3	---	.06	2.1	2.5	.03	e.02	e.02	e.02
31	e.02	---	.20	6.3	---	1.9	---	.25	---	e.02	e.02	---
MEAN	.027	.028	.40	3.82	2.03	5.30	1.38	4.83	3.31	4.64	.16	.43
MAX	.04	.04	4.5	7.4	6.4	115	6.5	42	12	6.9	2.1	5.1
MIN	.02	.02	.02	.05	.03	.03	.01	.04	.02	.01	.01	.00
AC-FT	1.6	1.7	24	235	117	326	82	297	197	285	10	26

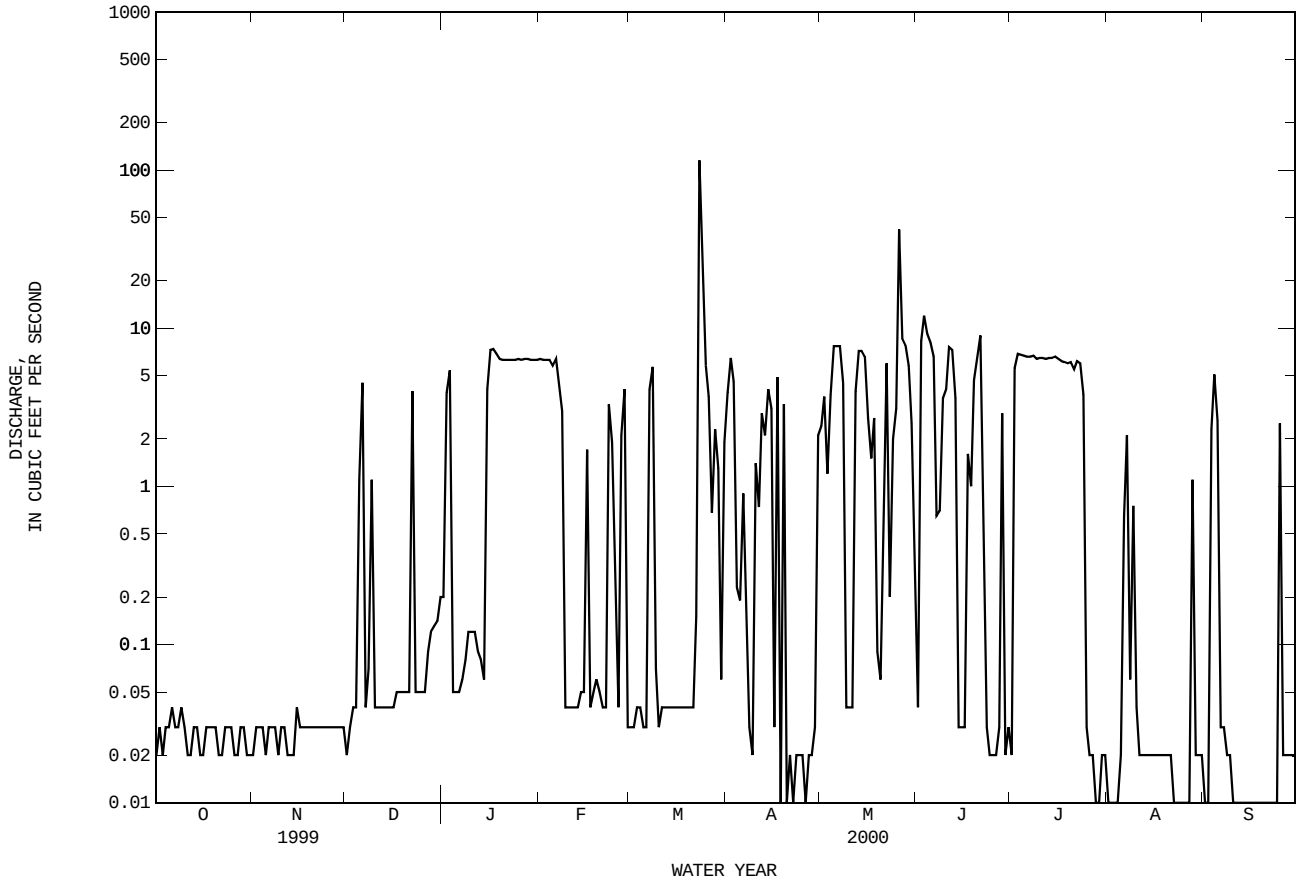
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1986 - 2000, BY WATER YEAR (WY)

MEAN	4.53	1.25	2.20	2.73	2.93	1.83	2.21	8.33	4.00	12.4	3.21	12.5
MAX	30.6	8.51	9.34	9.16	17.8	5.30	10.4	53.2	13.8	154	15.7	90.1
(WY)	1987	1987	1992	1990	1992	2000	1997	1987	1991	1986	1995	1996
MIN	.027	.018	.028	.073	.038	.016	.011	.043	.097	.025	.021	.016
(WY)	2000	1997	1989	1989	1995	1991	1996	1988	1998	1993	1994	1990

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1986 - 2000	
ANNUAL MEAN	2.90		2.21		4.85	
HIGHEST ANNUAL MEAN					20.8	1986
LOWEST ANNUAL MEAN					.75	1988
HIGHEST DAILY MEAN	316	May 26	115	Mar 23	3520	Jul 3 1986
LOWEST DAILY MEAN	.01	Feb 28	.00	Sep 15	.00	Jan 4 1986
ANNUAL SEVEN-DAY MINIMUM	.01	Feb 28	.01	Sep 10	.01	Sep 10 2000
INSTANTANEOUS PEAK FLOW			283	Mar 23	13100	Jul 3 1989
INSTANTANEOUS PEAK STAGE			6.06	Mar 23	19.01	Jul 3 1989
ANNUAL RUNOFF (AC-FT)	2100		1600		3520	
10 PERCENT EXCEEDS	3.9		6.4		7.1	
50 PERCENT EXCEEDS	.05		.04		.06	
90 PERCENT EXCEEDS	.02		.02		.02	

e Estimated

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued



07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: May 1987 to Sep 1989, Oct 1990 to Sep 1991, Oct 1996 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: May 1987 to Sep 1989.
WATER TEMPERATURE: May 1987 to Sep 1989.

INSTRUMENTATION.--Water-quality monitor May 1987 to Sep 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 41,600 microsiemens, Aug 17, 1989; minimum, 350 microsiemens, May 28, 1987.
WATER TEMPERATURE: Maximum, 34.5°C, Jun 8, 1988; minimum, 0.0°C, Feb 5-8, 1989.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT											
06...	1300	.04	40100	7.9	21.3	12.2	169	4100	4000	1200	278
NOV											
12...	1005	.02	38600	7.6	17.8	7.7	98	4400	4300	1300	285
JAN											
03...	1125	7.2	42000	7.8	10.7	8.6	97	4300	4200	1200	300
19...	1045	6.8	42400	7.7	12.6	8.2	97	4100	4000	1200	290
FEB											
28...	1100	.03	45000	8.1	14.3	10.4	128	4100	4000	1200	287
MAR											
13...	1140	.04	41700	7.9	17.9	9.2	120	4600	4400	1300	311
MAY											
02...	1155	5.6	42200	7.9	19.9	8.2	112	4200	4100	1200	298
15...	1245	7.2	44900	7.8	22.7	--	--	4700	4600	1300	336
JUN											
27...	1245	.03	43300	7.1	22.7	2.7	37	4200	4100	1200	304
JUL											
20...	1115	6.1	45300	7.6	28.6	5.0	79	4100	4000	1200	293
AUG											
09...	1220	1.7	47400	7.6	28.2	5.4	85	4200	4100	1300	251
SEP											
12...	1235	.01	43400	7.7	26.7	9.8	148	4300	4100	1200	286

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT											
06...	7810	53	40	--	--	140	3100	14000	.48	11	26300
NOV											
12...	8150	53	36	--	--	140	3100	14000	.47	12	27000
JAN											
03...	9530	63	37	--	--	130	3100	15000	.41	21	29500
19...	9140	62	35	--	--	140	3000	15000	.47	17	28900
FEB											
28...	9120	62	37	--	--	110	3000	16000	.48	2.2	29700
MAR											
13...	9230	59	36	--	--	120	3000	15000	.43	7.5	29100
MAY											
02...	9410	63	34	--	--	100	3000	15000	.47	1.9	29200
15...	10500	67	36	--	--	100	3200	16000	.60	3.3	31300
JUN											
27...	10400	70	37	--	--	110	2800	17000	.45	7.6	31500
JUL											
20...	9490	64	39	124	101	--	3100	16000	.57	9.0	29900
AUG											
09...	10100	68	41	--	109	--	3100	16000	.78	7.4	31200
SEP											
12...	8920	59	39	185	151	--	3000	15000	.48	13	28400

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT											
06...	79	--	<.010	<.050	.207	--	.03	.24	<.050	E.034	.167
NOV											
12...	63	--	<.010	<.050	.125	--	.19	.31	<.050	<.050	<.010
JAN											
03...	30	.127	.056	.183	.142	.55	.22	.36	<.050	<.050	.013
19...	62	.123	.057	.180	.232	.69	.28	.51	<.050	<.050	.016
FEB											
28...	25	--	.014	<.050	.092	--	.22	.31	<.050	<.050	<.010
MAR											
13...	31	--	<.010	<.050	.269	--	.16	.43	E.031	<.050	<.010
MAY											
02...	29	--	<.010	<.050	.116	--	.46	.58	<.050	<.050	<.010
15...	41	--	<.010	<.050	.130	--	.41	.54	<.050	<.050	<.010
JUN											
27...	66	.077	.059	.136	.329	.44	--	.31	<.050	<.050	<.010
JUL											
20...	32	--	.010	<.050	.134	--	.39	.52	<.050	<.050	<.010
AUG											
09...	35	--	.012	<.050	.224	--	.64	.86	E.035	<.050	.011
SEP											
12...	39	--	<.010	<.050	.115	--	.74	.86	E.045	<.050	<.010

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
OCT											
06...	.51	<4	<2	34	47	<10	<320	7	<2.0	<10	<400
NOV											
12...	--	<4	<4	34	30	<10	<120	<10	<1.0	<10	<150
JAN											
03...	.04	E2	<4	28	<20	<1	<160	<1	<.80	<1	<200
19...	.05	<4	<4	25	26	<1	<200	<10	<1.0	4	<250
FEB											
28...	--	6	4	27	E24	<1	<500	<1	3.5	<1	<250
MAR											
13...	--	E9	<10	E30	E24	E1	<1.4	E13	3.2	E12	<13
MAY											
02...	--	9	--	36	--	<10	--	<1	--	<1	--
15...	--	<10	<20	35	49	<1	<1.4	4	<1.6	<12	<12
JUN											
27...	--	<26	--	41	--	<1	--	<10	--	<12	--
JUL											
20...	--	<26	<10	29	38	<1	<1.4	<10	<8.0	<12	<13
AUG											
09...	.03	<10	--	35	--	1	--	<10	--	<12	--
SEP											
12...	--	5	<8	39	35	<1	<2.8	4	<8.0	3	<13

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DATE	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
OCT											
06...	E450	<400	<10	<4000	240	197	<.10	<.1	<780	<1600	<4
NOV											
12...	E470	<150	<10	<1500	320	305	<.10	<.2	<980	<600	<4
JAN											
03...	<20	310	2	<2000	25	<44	<.60	<.2	E21	<800	5
19...	150	<250	4	<2500	77	84	<.60	<.2	<39	<1000	<4
FEB											
28...	70	<250	<4	<2500	100	108	<.30	<.2	<39	<1000	10
MAR											
13...	E830	<250	E10	<10	E300	351	<.30	<.2	E18	<14	7
MAY											
02...	<20	--	<20	--	80	--	<.30	--	<39	--	<5
15...	<20	<250	<10	<10	63	20	<.30	E.1	<18	<14	<5
JUN											
27...	<370	--	<10	--	130	--	<.30	--	<470	--	<5
JUL											
20...	<370	<250	<10	<10	71	E54	<.30	.6	<18	<14	<5
AUG											
09...	<460	--	<10	--	180	--	<.30	--	--	--	<10
SEP											
12...	<310	<300	<10	<10	260	252	<.30	<.2	10	<14	6

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)
OCT											
06...	<2	<1	<10	<620	<800	--	--	--	--	--	--
NOV											
12...	<4	<10	<1.0	<780	<300	--	--	--	--	--	--
JAN											
03...	<4	<1	<1.0	<31	<400	--	--	--	--	--	--
19...	<4	<10	<1.0	190	<500	--	--	--	--	--	--
FEB											
28...	7	<1	<10	<31	<500	--	--	--	--	--	--
MAR											
13...	7	E10	<10	<20	<500	--	--	--	--	--	--
MAY											
02...	--	<10	--	<31	--	--	--	--	--	--	--
15...	5	<10	<10	<31	<500	--	--	--	--	--	--
JUN											
27...	--	<10	--	<370	--	--	--	--	--	--	--
JUL											
20...	<12	<10	<10	<370	<500	<.040	<.10	<1.00	<.100	<.100	<.100
AUG											
09...	--	<10	--	<370	--	<.040	<.10	<1.00	<.100	<.100	<.100
SEP											
12...	<10	<10	<10	<310	370	--	--	--	--	--	--

07311783 SOUTH WICHITA RIVER BELOW LOW FLOW DAM NEAR GUTHRIE, TX--Continued

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

DATE	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	151	<2.00
AUG											
09...	<.100	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	137	<2.00
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

DATE	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT											
06...	--	--	--	--	--	--	--	--	--	--	--
NOV											
12...	--	--	--	--	--	--	--	--	--	--	--
JAN											
03...	--	--	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--	--	--
FEB											
28...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
MAY											
02...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
27...	--	--	--	--	--	--	--	--	--	--	--
JUL											
20...	<.100	<.030	156	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
AUG											
09...	<.100	<.030	124	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP											
12...	--	--	--	--	--	--	--	--	--	--	--

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX

LOCATION.--Lat 33°38′39", long 99°48′02", Knox County, Hydrologic Unit 11130205, on right bank at upstream side of bridge on State Highway 6, 2 mi downstream from Panhandle and Santa Fe Railway Co. bridge, 4 mi north of Benjamin, and 41 mi upstream from mouth.

DRAINAGE AREA.--584 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-57 (occasional low-flow measurements), Dec 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,334.23 ft above sea level. Prior to Jan 2, 1960, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records fair. No known regulation. There are low flow diversions upstream on the South Wichita River at Low Flow Dam near Guthrie (station 07311782) to Truscott Brine Lake near Truscott (station 07311669). There were other minor diversions upstream from station during the year. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1903 occurred in Sep 1919 (stage and discharge unknown), from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	1030	2,780	15.83	Jul 2	0830	1,180	12.08
Mar 24	0600	2,410	15.41				

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	115	3.4	2.1	.17	.00	.00
2	.00	.00	.00	.00	.00	.00	37	1.2	e92	507	.00	.00
3	.00	.00	.00	.00	.00	.00	19	1.0	e73	22	.00	.00
4	.00	.00	.00	.00	.00	.00	15	.84	29	.99	.00	.00
5	.00	.00	.00	.00	.00	.00	15	.67	41	.23	.00	.00
6	.00	.00	.00	.00	.00	.00	13	.84	22	.03	.00	.00
7	.00	.00	.00	.00	.00	.00	9.2	.52	12	e.02	.00	.00
8	.00	.00	.00	.00	.00	.00	3.8	.44	4.8	e.02	.00	.00
9	.00	.00	.00	.00	.00	.00	3.6	1.6	6.8	e.01	.00	.00
10	.00	.00	.00	.00	.00	.00	3.6	4.2	1.4	e.01	.00	.00
11	.00	.00	.00	.00	.00	.00	4.9	1.7	8.5	e.01	.00	.00
12	.00	.00	.00	.00	.00	.00	15	5.4	.74	e.01	.00	.00
13	.00	.00	.00	.00	.00	.00	8.9	e14	.38	1.4	.00	.00
14	.00	.00	.00	.00	.00	.00	7.9	1.4	.22	58	.00	.00
15	.00	.00	.00	.00	.00	.00	7.3	.81	.17	1.1	.00	.00
16	.00	.00	.00	.00	.00	.00	6.3	.68	.25	.62	.00	.00
17	.00	.00	.00	.00	.00	.00	4.2	.54	211	.31	.00	.00
18	.00	.00	.00	.00	.00	.00	4.7	.49	25	.05	.00	.00
19	.00	.00	.00	.00	.00	.00	4.9	e.48	44	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	2.7	e.47	20	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	4.2	e.47	.95	.00	.00	.00
22	.00	.00	.00	.00	.00	84	3.5	e.46	1.4	.00	.00	.00
23	.00	.00	.00	.00	.00	2210	4.0	.51	.98	.00	.00	.00
24	.00	.00	.00	.00	.00	1800	2.6	.41	.76	.00	.00	.00
25	.00	.00	.00	.00	13	172	2.2	.36	.70	.00	.00	.00
26	.00	.00	.00	.00	.43	91	1.7	59	.49	.00	.00	.00
27	.00	.00	.00	.00	.00	59	1.5	6.0	.31	.00	.00	.00
28	.00	.00	.00	.00	.00	43	1.3	e35	.24	.00	.00	.00
29	.00	.00	.00	.00	.00	36	1.5	29	.20	.00	.00	.00
30	.00	.00	.00	.00	---	28	26	13	.16	.00	.00	.00
31	.00	---	.00	.00	---	24	---	4.8	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	13.43	4547.00	349.5	189.69	600.55	591.98	0.00	0.00
MEAN	.000	.000	.000	.000	.46	147	11.6	6.12	20.0	19.1	.000	.000
MAX	.00	.00	.00	.00	13	2210	115	59	211	507	.00	.00
MIN	.00	.00	.00	.00	.00	.00	1.3	.36	.16	.00	.00	.00
AC-FT	.00	.00	.00	.00	27	9020	693	376	1190	1170	.00	.00
IN.	.00	.00	.00	.00	.00	.29	.02	.01	.04	.04	.00	.00

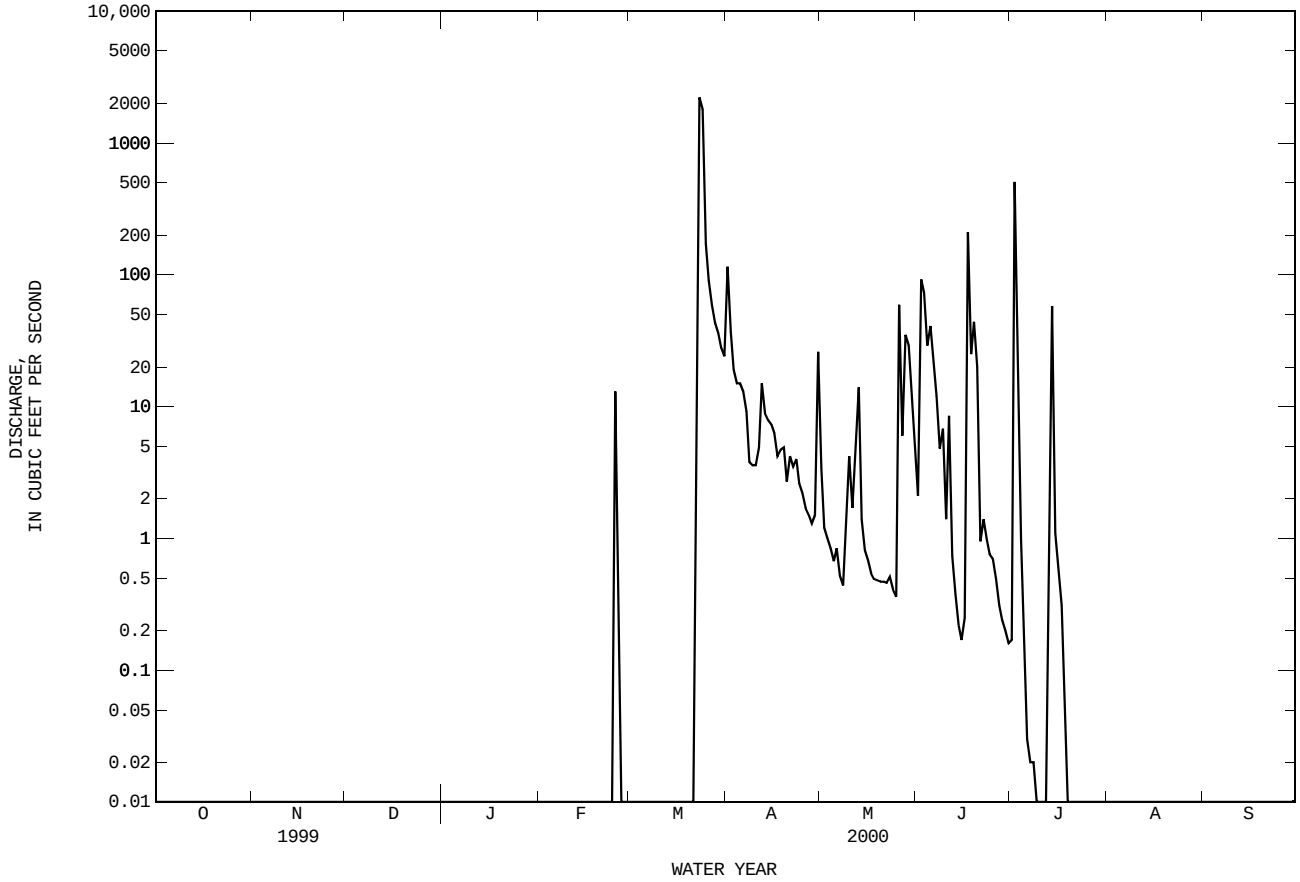
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000, BY WATER YEAR (WY)

MEAN	71.0	17.5	11.9	11.5	18.0	24.7	29.9	76.6	80.7	23.4	45.9	76.6
MAX	656	65.1	77.5	60.3	172	147	187	256	458	162	578	502
(WY)	1984	1987	1992	1992	1992	2000	1990	1989	1990	1986	1995	1966
MIN	.000	.000	.000	.000	.46	.97	.073	.92	1.49	.013	.000	.000
(WY)	2000	2000	1999	2000	2000	1989	1989	1988	1976	1965	1963	1998

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	9641.08		6292.15			
ANNUAL MEAN	26.4		17.2		41.1	
HIGHEST ANNUAL MEAN					107	1966
LOWEST ANNUAL MEAN					11.2	1988
HIGHEST DAILY MEAN	2030	May 27	2210	Mar 23	8260	Oct 20 1983
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	May 24 1960
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Jun 27 1960
INSTANTANEOUS PEAK FLOW			2780	Mar 23	14900	Jun 1 1990
INSTANTANEOUS PEAK STAGE			15.83	Mar 23	17.07	Jun 1 1990
INSTANTANEOUS LOW FLOW					.00	May 24 1960
ANNUAL RUNOFF (AC-FT)	19120		12480		29780	
ANNUAL RUNOFF (INCHES)	.61		.40		.96	
10 PERCENT EXCEEDS	32		12		46	
50 PERCENT EXCEEDS	.00		.00		6.7	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated



07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jul 1949 to Mar 1959, Jul 1966 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1967 to current year.
WATER TEMPERATURE: Oct 1967 to current year.

INSTRUMENTATION.--Water-quality monitor since Aug 1968.

REMARKS.--Records fair. Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1991 to 2000. The standard error of estimate for dissolved solids is 5%, chloride is 24%, sulfate is 15% and for hardness is 12%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. No flow Oct 1-Feb 24, Feb 27-Mar 21, and Jul 19-Sep 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 48,900 microsiemens, May 13, 1971; minimum, 384 microsiemens, Sep 18, 1996.
WATER TEMPERATURE: Maximum, 39.0°C, Jul 31, 1989; minimum, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 25,300 microsiemens, May 29; minimum, 690 microsiemens, Mar 23.
WATER TEMPERATURE: Maximum, 38.3°C, Jul 20; minimum, 5.9°C, Apr 1.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	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)
MAR											
23...	1350	2490	775	8.3	15.0	7.9	83	250	220	81	11
APR											
03...	1425	18	8750	8.1	12.9	7.0	71	2000	1800	560	135
20...	1400	2.3	18300	8.0	23.9	7.8	101	3300	3100	870	272
MAY											
09...	1425	1.2	18700	8.1	29.8	6.6	97	3500	3300	900	293
22...	1325	.37	20300	7.9	32.5	6.3	98	3900	3700	970	352
JUN											
06...	1300	22	10600	7.9	25.9	9.0	119	1800	1700	530	111
JUL											
18...	1230	.09	4100	8.1	33.2	6.3	92	1200	1100	380	59

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
MAR											
23...	49	1	3.9	--	--	29	230	66	.18	4.6	464
APR											
03...	1230	12	12	--	--	100	1600	2200	.16	5.0	5780
20...	3110	24	19	--	--	170	2600	5300	.20	5.6	12300
MAY											
09...	2990	22	22	--	--	170	2800	5400	.16	5.2	12500
22...	3180	22	23	--	--	170	3000	5600	.12	2.9	13300
JUN											
06...	1860	19	16	--	--	75	1500	3300	.34	4.1	7350
JUL											
18...	482	6	11	98	80	--	1000	900	.24	9.1	2920

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	ARSENIC TOTAL (UG/L AS AS) (01002)
MAR											
23...	2840	<.010	.432	<.020	3.2	--	2.8	1.82	<.050	<.010	21
APR											
03...	238	<.010	.173	.058	.61	.38	.44	.148	<.050	<.010	8
20...	35	<.010	<.050	.061	--	.17	.23	<.050	<.050	<.010	8
MAY											
09...	47	<.010	<.050	.053	--	.33	.38	E.031	<.050	<.010	9
22...	15	<.010	<.050	.105	--	.19	.29	<.050	<.050	<.010	8
JUN											
06...	90	<.010	<.050	.050	--	.41	.46	.131	<.050	<.010	<3
JUL											
18...	20	<.010	.149	<.020	.50	--	.35	<.050	<.050	<.010	7

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

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

DATE	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
MAR										
23...	5	640	56	M	<.14	40	<.80	40	E.90	20000
APR										
03...	4	190	168	<1	<.22	5	2.2	7	<2.6	4700
20...	--	81	--	<1	--	<4	--	<5	--	50
MAY										
09...	9	96	101	<1	<.56	7	<3.2	<5	<5.2	340
22...	6	57	63	<1	<.56	5	<1.6	<5	<5.2	<20
JUN										
06...	--	140	--	<1	--	11	--	16	--	3500
JUL										
18...	6	150	163	<1	<.56	<1	<3.2	3	<5.2	170

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)
MAR										
23...	<10	23	<1.0	900	14	<.30	<.2	72	<1.4	E1
APR										
03...	<50	2	<2.0	85	E7.8	<.30	<.2	10	<2.8	7
20...	--	<4	--	13	--	<.30	--	E24	--	4
MAY										
09...	<200	<4	<4.0	26	121	<.30	<.2	<7	<5.6	5
22...	<200	<4	<4.0	31	E43	<.30	<.2	<7	<5.6	E2
JUN										
06...	--	E1	--	67	--	<.30	--	<120	--	<3
JUL										
18...	<30	<1	<4.0	10	E4.9	<.30	<.2	<2	<5.6	E2

DATE	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	ALPHA BHC TOTAL (UG/L) (39337)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)
MAR										
23...	<2	<4	<1.0	140	<20	--	--	--	--	--
APR										
03...	4	<2	<2.0	<31	<100	--	--	--	--	--
20...	--	<4	--	E21	--	--	--	--	--	--
MAY										
09...	E2	<4	<4.0	<31	<400	<.040	<.030	<.030	<.100	<.020
22...	<2	<4	<4.0	<31	<400	--	--	--	--	--
JUN										
06...	--	<4	--	120	--	--	--	--	--	--
JUL										
18...	<2	<1	<4.0	<93	<60	--	--	--	--	--

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

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

DATE	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)	LINDANE TOTAL (UG/L) (39340)	TOX-APHENE, TOTAL (UG/L) (39400)
MAR										
23...	--	--	--	--	--	--	--	--	--	--
APR										
03...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
MAY										
09...	<.060	<.030	<.800	<1.00	<.100	<.100	<.100	<.100	<.030	<2.00
22...	--	--	--	--	--	--	--	--	--	--
JUN										
06...	--	--	--	--	--	--	--	--	--	--
JUL										
18...	--	--	--	--	--	--	--	--	--	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	0	--	--	--	--	--	--	--	--
NOV.	1999	0	--	--	--	--	--	--	--	--
DEC.	1999	0	--	--	--	--	--	--	--	--
JAN.	2000	0	--	--	--	--	--	--	--	--
FEB.	2000	13.43	1070	780	28.3	200	7.3	320	11.4	350
MAR.	2000	4547	2570	1850	22770	530	6460	690	8510	780
APR.	2000	349.5	10630	7450	7030	2700	2530	2100	2020	2500
MAY	2000	189.69	11000	7640	3910	2900	1500	2000	1010	2400
JUNE	2000	600.55	8530	6030	9780	2000	3280	1900	3080	2200
JULY	2000	591.98	9240	6530	10440	2200	3500	2100	3290	2400
AUG.	2000	0	--	--	--	--	--	--	--	--
SEPT	2000	0	--	--	--	--	--	--	--	--
TOTAL		6292.15	**	**	53960	**	17290	**	17920	**
WTD.AVG.		17	4460	3180	**	1000	**	1100	**	1200

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
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12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
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22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
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30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	12200	1820	6770	5490	2520	3710
2	---	---	---	---	---	---	7870	2680	5020	7070	5490	6540
3	---	---	---	---	---	---	9740	7870	8550	8640	5740	7000
4	---	---	---	---	---	---	12600	9740	11200	11200	8640	10200
5	---	---	---	---	---	---	13900	12500	13300	12700	11200	12000
6	---	---	---	---	---	---	14300	12200	13900	15400	12700	13800
7	---	---	---	---	---	---	15900	11200	13800	17500	15400	16500
8	---	---	---	---	---	---	15400	15000	15200	18700	17100	18000
9	---	---	---	---	---	---	15200	15100	15200	18900	18200	18700
10	---	---	---	---	---	---	15300	15200	15300	19100	18400	18800
11	---	---	---	---	---	---	15600	15300	15400	20100	18600	19200
12	---	---	---	---	---	---	16800	15200	16100	21400	19900	20600
13	---	---	---	---	---	---	16700	10700	13500	21600	21100	21300
14	---	---	---	---	---	---	12000	10300	10800	21700	21100	21400
15	---	---	---	---	---	---	16100	12000	13800	21400	20400	20900
16	---	---	---	---	---	---	17200	16100	16900	20900	20400	20700
17	---	---	---	---	---	---	17200	16400	16900	21200	20500	20800
18	---	---	---	---	---	---	17300	16800	17000	21100	20200	20700
19	---	---	---	---	---	---	17700	17300	17600	21100	20300	20800
20	---	---	---	---	---	---	18300	16300	17700	20900	20400	20700
21	---	---	---	---	---	---	18700	18200	18500	20700	19800	20400
22	---	---	---	---	---	e1140	18900	17700	18600	21100	20200	20600
23	---	---	---	2800	690	1050	18800	18100	18400	21100	20000	20500
24	---	---	---	7880	1420	3270	19100	18500	18800	21400	20000	20600
25	---	---	e1000	8180	4540	6130	19000	18700	18800	20800	10200	19500
26	---	---	e3200	6100	4540	5180	18900	18600	18700	17600	1640	6480
27	---	---	---	8350	6100	7210	19100	18600	18800	2860	1980	2260
28	---	---	---	10000	8350	9250	19000	18700	18800	10900	1850	4040
29	---	---	---	11600	9240	10800	18900	12400	18100	25300	8590	15200
30	---	---	---	12600	11600	12100	19800	2000	12000	23700	17900	19900
31	---	---	---	13200	12200	12900	---	---	---	17900	15400	16400
MONTH	---	---	---	---	---	---	19800	1820	15100	25300	1640	16100

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	15400	14500	14900	---	---	e16000	---	---	---	---	---	---
2	15100	5010	9960	---	---	e10100	---	---	---	---	---	---
3	14600	7320	9530	9790	9190	9610	---	---	---	---	---	---
4	15900	12600	15000	9760	9240	9590	---	---	---	---	---	---
5	16000	12000	14600	9240	7910	8600	---	---	---	---	---	---
6	12000	9640	10700	7910	6880	7430	---	---	---	---	---	---
7	9650	9150	9400	6880	6360	6620	---	---	---	---	---	---
8	9920	9420	9710	6360	6090	6240	---	---	---	---	---	---
9	10000	3140	8410	6090	5850	5980	---	---	---	---	---	---
10	5080	3220	4160	5850	5660	5770	---	---	---	---	---	---
11	6400	2310	4610	5660	5460	5560	---	---	---	---	---	---
12	---	---	e7000	5460	5270	5370	---	---	---	---	---	---
13	---	---	e11000	5420	5000	5130	---	---	---	---	---	---
14	---	---	e16000	5810	1460	1870	---	---	---	---	---	---
15	16600	16100	16400	1720	1630	1680	---	---	---	---	---	---
16	18300	16200	16600	4400	1640	2930	---	---	---	---	---	---
17	18400	846	8020	---	---	e4500	---	---	---	---	---	---
18	3150	1970	2140	---	---	---	---	---	---	---	---	---
19	2680	2180	2430	---	---	---	---	---	---	---	---	---
20	2520	1980	2170	---	---	---	---	---	---	---	---	---
21	2100	2060	2080	---	---	---	---	---	---	---	---	---
22	2790	2100	2400	---	---	---	---	---	---	---	---	---
23	4840	2790	3800	---	---	---	---	---	---	---	---	---
24	6390	4840	5600	---	---	---	---	---	---	---	---	---
25	7820	6390	7200	---	---	---	---	---	---	---	---	---
26	8660	7820	8150	---	---	---	---	---	---	---	---	---
27	9550	8660	9280	---	---	---	---	---	---	---	---	---
28	---	---	e10900	---	---	---	---	---	---	---	---	---
29	---	---	e12000	---	---	---	---	---	---	---	---	---
30	---	---	e15600	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	8990	---	---	---	---	---	---	---	---	---

e Estimated

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
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10	---	---	---	---	---	---	---	---	---	---	---	---
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12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07311800 SOUTH WICHITA RIVER NEAR BENJAMIN, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	---	---	---	---	---	---	14.1	5.9	9.7	24.6	17.0	20.5
2	---	---	---	---	---	---	17.6	6.9	11.8	24.4	17.6	19.5
3	---	---	---	---	---	---	16.2	11.3	13.1	29.6	16.8	22.0
4	---	---	---	---	---	---	18.6	8.5	13.7	30.1	19.3	23.2
5	---	---	---	---	---	---	22.0	12.8	17.8	30.7	21.0	24.3
6	---	---	---	---	---	---	24.2	15.0	20.0	34.1	21.9	26.7
7	---	---	---	---	---	---	23.3	16.7	19.4	32.7	22.4	26.5
8	---	---	---	---	---	---	19.2	11.6	15.9	33.4	22.5	26.3
9	---	---	---	---	---	---	19.2	12.5	16.3	31.4	19.3	24.4
10	---	---	---	---	---	---	21.4	15.8	18.7	32.7	19.1	24.6
11	---	---	---	---	---	---	19.9	14.6	17.2	32.8	22.3	26.2
12	---	---	---	---	---	---	15.3	13.3	14.4	30.4	19.4	24.6
13	---	---	---	---	---	---	22.0	12.7	16.6	29.4	16.7	21.7
14	---	---	---	---	---	---	25.5	16.7	20.7	30.5	15.6	21.8
15	---	---	---	---	---	---	25.7	18.4	21.2	32.2	17.8	23.8
16	---	---	---	---	---	---	23.7	15.7	19.4	31.0	20.8	24.1
17	---	---	---	---	---	---	24.9	17.3	20.6	29.9	18.6	22.8
18	---	---	---	---	---	---	28.6	20.8	24.0	31.2	16.5	21.8
19	---	---	---	---	---	---	28.1	21.3	24.4	17.2	14.3	15.8
20	---	---	---	---	---	---	25.9	17.6	20.9	34.2	12.9	22.3
21	---	---	---	---	---	---	25.1	16.9	20.4	36.6	18.4	25.5
22	---	---	---	17.8	7.9	13.1	24.0	18.0	19.9	33.2	18.8	25.0
23	---	---	---	17.2	9.5	14.0	25.3	16.2	20.1	34.0	19.4	25.2
24	---	---	---	18.4	13.8	16.0	27.8	18.0	22.1	37.0	19.0	26.1
25	---	---	---	20.5	16.1	18.2	29.1	19.6	23.0	35.1	21.6	27.4
26	---	---	---	23.5	17.6	20.3	29.6	19.1	23.6	29.4	21.7	25.4
27	---	---	---	23.6	17.5	20.4	26.1	19.5	22.7	33.6	24.3	27.9
28	---	---	---	21.7	16.5	19.2	28.5	17.3	21.9	33.3	22.4	27.7
29	---	---	---	21.4	16.1	18.8	30.4	18.6	23.3	34.1	24.4	29.0
30	---	---	---	19.8	13.5	17.0	24.8	20.1	22.2	33.5	24.8	28.9
31	---	---	---	17.8	13.7	14.5	---	---	---	32.9	24.0	28.2
MONTH	---	---	---	---	---	---	30.4	5.9	19.2	37.0	12.9	24.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	32.7	24.0	27.6	32.4	24.6	27.2	---	---	---	---	---	---
2	---	---	---	28.7	24.0	26.1	---	---	---	---	---	---
3	---	---	---	32.3	26.9	29.3	---	---	---	---	---	---
4	29.3	25.2	26.9	32.1	26.6	29.4	---	---	---	---	---	---
5	31.4	25.4	28.1	32.6	26.5	29.1	---	---	---	---	---	---
6	31.9	23.1	27.3	33.7	25.8	29.2	---	---	---	---	---	---
7	32.4	23.3	27.7	30.4	25.9	28.0	---	---	---	---	---	---
8	31.2	22.9	27.1	30.4	25.0	27.2	---	---	---	---	---	---
9	29.2	24.9	26.7	30.7	24.5	27.0	---	---	---	---	---	---
10	31.7	24.3	27.0	30.6	24.1	26.7	---	---	---	---	---	---
11	30.6	25.4	27.3	30.9	24.4	27.2	---	---	---	---	---	---
12	32.8	24.5	27.7	32.7	25.5	28.6	---	---	---	---	---	---
13	30.1	23.4	26.7	32.3	27.0	29.1	---	---	---	---	---	---
14	30.1	22.1	24.7	32.4	25.7	29.3	---	---	---	---	---	---
15	35.5	19.2	26.5	33.5	27.9	30.7	---	---	---	---	---	---
16	28.9	23.4	25.7	---	---	---	---	---	---	---	---	---
17	23.4	16.9	19.9	---	---	---	---	---	---	---	---	---
18	21.3	19.1	20.0	---	---	---	---	---	---	---	---	---
19	26.9	21.1	23.3	37.4	23.7	28.2	---	---	---	---	---	---
20	30.3	23.4	26.1	38.3	22.9	30.3	---	---	---	---	---	---
21	27.8	25.7	26.8	---	---	---	---	---	---	---	---	---
22	31.8	25.2	28.3	---	---	---	---	---	---	---	---	---
23	31.9	26.6	29.0	---	---	---	---	---	---	---	---	---
24	34.1	26.5	29.6	---	---	---	---	---	---	---	---	---
25	35.6	26.5	29.9	---	---	---	---	---	---	---	---	---
26	31.5	26.1	27.7	---	---	---	---	---	---	---	---	---
27	34.0	25.4	28.6	---	---	---	---	---	---	---	---	---
28	33.8	25.0	28.3	---	---	---	---	---	---	---	---	---
29	29.0	25.5	26.8	---	---	---	---	---	---	---	---	---
30	33.7	24.0	27.9	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07311900 WICHITA RIVER NEAR SEYMOUR, TX

LOCATION.--Lat 33°42′01", long 99°23′18", Baylor County, Hydrologic Unit 11130206, on left bank at downstream side of bridge on Farm Road 1919, 6 mi upstream from the head of Lake Kemp (07312000), 10 mi downstream from the confluence of the North and South Forks of the Wichita River, and 10.5 mi northwest of Seymour.

DRAINAGE AREA.--1,874 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1952 to Sep 57 (occasional low-flow measurements made 4 mi downstream), Nov 1959 to Sep 1979, Oct 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,152.7 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. No flow at times.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 23	1800	5,750	14.97	No other peak greater than base discharge.			

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.4	25	10	16	17	15	171	155	19	101	4.4	.00
2	5.4	15	9.6	15	16	15	401	236	16	107	4.0	.00
3	5.2	12	9.8	17	15	14	222	98	302	190	3.6	.00
4	4.8	10	20	15	15	42	129	58	608	193	3.0	.00
5	13	9.9	14	15	15	34	109	44	751	53	1.9	.00
6	9.7	9.4	11	15	15	25	88	35	250	33	.35	.00
7	6.6	9.3	11	15	14	21	74	29	135	25	.05	.00
8	6.4	8.9	11	20	14	18	62	24	89	21	.02	.00
9	6.8	9.0	330	17	15	16	57	22	61	18	.00	.00
10	44	9.3	70	17	14	16	53	20	54	16	.00	.00
11	53	9.1	27	18	14	14	51	19	41	15	.00	.00
12	33	9.0	27	18	14	14	84	17	31	29	.00	.00
13	20	9.0	22	16	14	14	85	16	40	14	.00	.00
14	15	8.9	20	16	14	14	76	15	24	14	.00	.00
15	13	8.8	18	16	14	14	69	15	20	24	.00	.00
16	10	8.5	17	16	14	14	272	15	18	25	.00	.00
17	9.1	8.8	16	16	13	14	85	13	683	16	.00	.00
18	8.7	8.6	16	16	13	14	56	13	1440	12	.00	.00
19	9.1	8.2	16	16	13	14	43	12	587	11	.00	.00
20	8.7	8.2	15	15	13	13	34	13	292	9.7	.00	.00
21	8.1	8.3	15	15	14	14	31	16	275	8.8	.00	.00
22	8.1	8.5	16	16	15	76	38	16	130	8.1	.00	.00
23	7.6	8.5	16	16	83	4720	47	14	79	7.5	.00	.00
24	7.5	8.4	16	16	41	4120	32	12	58	7.2	.00	.00
25	7.5	8.1	16	17	39	2680	29	10	42	6.6	.00	.00
26	7.4	8.5	16	17	57	1650	28	225	32	6.3	.00	.00
27	7.0	9.0	16	17	23	667	25	225	29	5.8	.00	.00
28	6.6	9.5	16	17	19	305	24	104	33	5.5	.00	.00
29	6.9	9.6	16	17	17	204	23	62	27	5.2	.00	.00
30	28	10	16	16	---	156	24	42	30	4.9	.00	.00
31	63	---	15	17	---	131	---	27	---	4.7	.00	---
TOTAL	444.6	293.3	864.4	506	594	15078	2522	1622	6196	997.3	17.32	0.00
MEAN	14.3	9.78	27.9	16.3	20.5	486	84.1	52.3	207	32.2	.56	.000
MAX	63	25	330	20	83	4720	401	236	1440	193	4.4	.00
MIN	4.8	8.1	9.6	15	13	13	23	10	16	4.7	.00	.00
AC-FT	882	582	1710	1000	1180	29910	5000	3220	12290	1980	34	.00

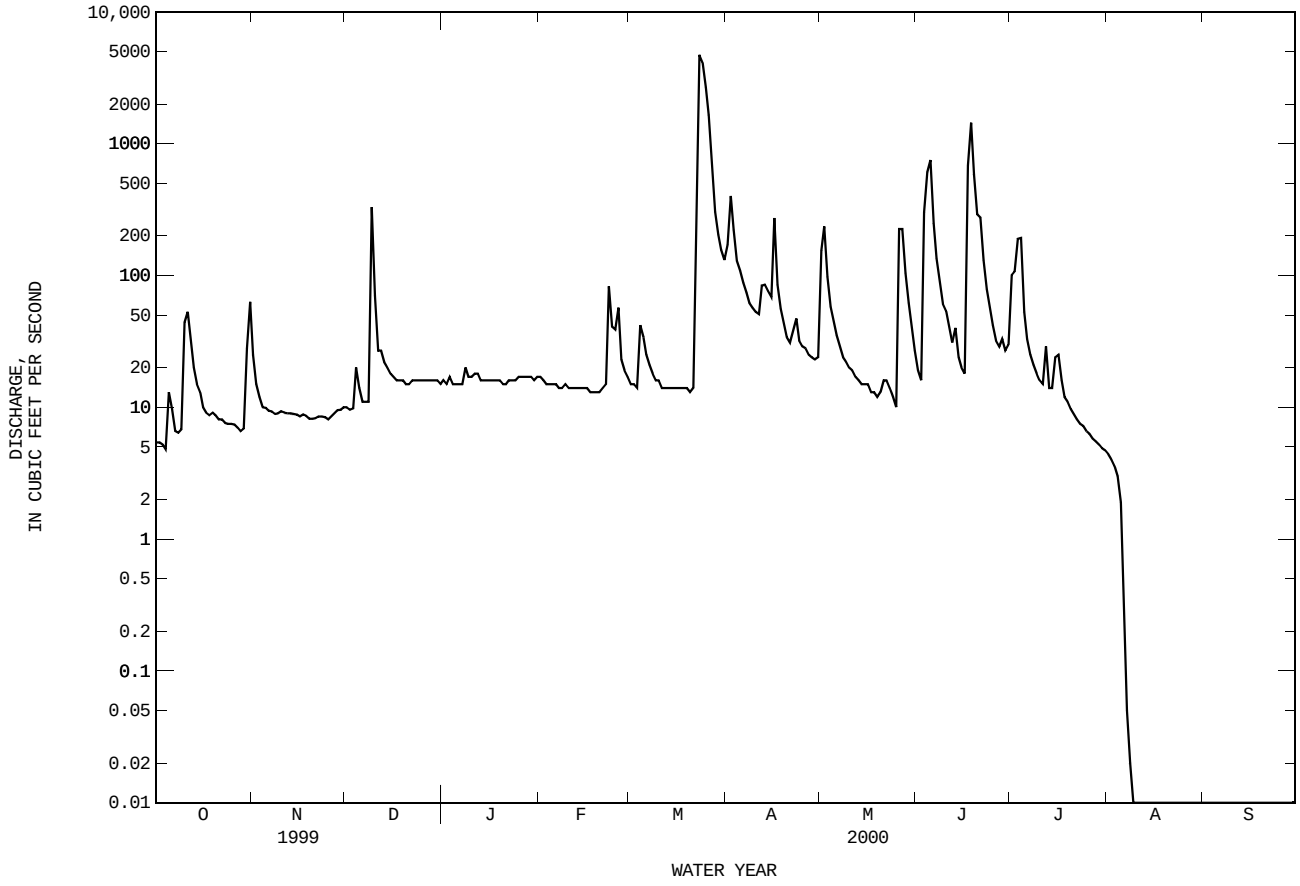
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000h, BY WATER YEAR (WY)

MEAN	212	83.5	47.9	52.8	61.2	119	155	263	274	135	166	318
MAX	1464	262	222	375	299	486	664	778	979	726	1353	1492
(WY)	1961	1973	1960	1968	1998	2000	1967	1999	1967	1967	1966	1966
MIN	2.89	9.29	13.5	11.5	12.5	8.10	7.36	32.3	18.4	1.11	.56	.000
(WY)	1964	1971	1971	1964	1971	1965	1964	1962	1970	1964	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000h	
ANNUAL TOTAL	55025.3		29134.92			
ANNUAL MEAN	151		79.6		157	
HIGHEST ANNUAL MEAN					389	1966
LOWEST ANNUAL MEAN					71.6	1976
HIGHEST DAILY MEAN	5240	May 28	4720	Mar 23	16100	Oct 19 1965
LOWEST DAILY MEAN	4.1	Sep 12	.00	Aug 9	.00	Jul 18 1964
ANNUAL SEVEN-DAY MINIMUM	4.6	Sep 7	.00	Aug 9	.00	Jul 18 1964
INSTANTANEOUS PEAK FLOW			5750	Mar 23	23100	Sep 20 1965
INSTANTANEOUS PEAK STAGE			14.97	Mar 23	17.75	Sep 20 1965
ANNUAL RUNOFF (AC-FT)	109100		57790		113700	
10 PERCENT EXCEEDS	332		99		224	
50 PERCENT EXCEEDS	17		15		30	
90 PERCENT EXCEEDS	6.7		.00		6.1	

h See PERIOD OF RECORD paragraph.

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued



07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1967 to Sep 1979, Oct 1996 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1979, Oct 1996 to current year.
WATER TEMPERATURE: Oct 1967 to Sep 1979, Oct 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Aug 1968 to Sep 1979, Oct 1996 to current year.

REMARKS.--Records fair. Interruption in the record was caused by malfunctions of the instrument. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1997 to 2000. The standard error of estimate for dissolved solids is 5%, chloride is 17%, sulfate is 12% and for hardness is 13%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request. No flow Aug 9 to Sep 30, 2000.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 30,800 microsiemens, Feb 12, 1969; minimum, 211 microsiemens, Dec 9, 1999.
WATER TEMPERATURE: Maximum, 39.4°C, Jul 13-14, 1998; minimum, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 19,700 microsiemens, Oct 5; minimum, 211 microsiemens, Dec 9.
WATER TEMPERATURE: Maximum, 38.4°C, Jul 15; minimum, 0.2°C, Jan 29.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT											
14...	1420	15	12000	8.2	27.7	9.2	126	1700	1700	510	111
NOV											
19...	1530	7.3	16800	8.1	18.4	11.4	133	2600	2500	750	182
DEC											
21...	1050	15	15100	7.9	5.4	12.8	110	2400	2200	670	173
JAN											
25...	1420	17	17200	7.6	9.1	11.6	111	2700	2600	770	188
FEB											
24...	1415	38	4510	8.1	20.7	9.2	110	760	710	230	46
MAR											
09...	1205	17	11800	8.0	16.2	11.7	129	2100	2000	600	148
APR											
18...	1420	57	7590	8.1	26.5	9.7	128	1300	1200	370	94
MAY											
16...	1510	15	12900	8.1	28.1	8.8	124	2200	2100	610	170
JUN											
26...	1130	33	6840	8.1	25.2	7.9	102	1200	1100	360	82
JUL											
11...	1100	15	12400	8.1	27.8	7.1	98	2100	2000	600	149

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
OCT											
14...	1860	20	12	--	--	60	1700	3200	.35	11	7540
NOV											
19...	3000	25	15	--	--	92	2500	5300	.34	12	11800
DEC											
21...	2790	25	15	--	--	130	2200	4400	.35	2.7	10300
JAN											
25...	3200	27	13	--	--	110	2300	5100	.43	9.8	11700
FEB											
24...	673	11	7.3	--	--	57	670	1100	.36	5.7	2770
MAR											
09...	2430	23	14	--	--	100	2000	4100	.36	.41	9350
APR											
18...	1170	14	8.4	--	--	96	1200	1800	.30	5.6	4730
MAY											
16...	2090	19	13	--	--	120	2000	3400	.37	3.1	8340
JUN											
26...	1010	12	1.8	--	--	110	1100	1600	.37	8.5	4210
JUL											
11...	2140	20	13	130	107	--	1800	3400	.25	7.4	8220

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

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

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT											
14...	18	--	<.010	<.050	<.020	--	--	.26	<.050	E.039	<.010
NOV											
19...	39	--	<.010	<.050	.033	--	--	E.09	<.050	<.050	<.010
DEC											
21...	20	--	<.010	<.050	.038	--	.06	.10	<.050	<.050	<.010
JAN											
25...	8	--	<.010	<.050	.046	--	.05	.10	<.050	<.050	<.010
FEB											
24...	2140	.717	.020	.737	.042	2.9	2.1	2.2	1.35	<.050	<.010
MAR											
09...	14	--	<.010	<.050	<.020	--	--	.22	<.050	<.050	<.010
APR											
18...	190	--	<.010	.094	<.020	.58	--	.49	.130	<.050	<.010
MAY											
16...	26	--	<.010	<.050	.041	--	.22	.26	E.032	<.050	<.010
JUN											
26...	37	--	<.010	<.050	<.020	--	--	.28	<.050	<.050	<.010
JUL											
11...	28	--	<.010	<.050	.059	--	.22	.28	<.050	<.050	<.010

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT											
14...	E2	E1	74	79	<1	<80	7	1.8	4	<100	80
NOV											
19...	4	3	38	39	<1	<80	<1	<1.0	3	<100	<310
DEC											
21...	4	3	34	32	<4	<8.0	<1	<1.0	<4	22	90
JAN											
25...	4	2	26	27	<4	<72	<1	<20	<4	<90	30
FEB											
24...	17	--	510	--	<1	--	25	--	8	--	14000
MAR											
09...	7	5	69	72	<1	<.28	<4	1.6	2	<2.6	60
APR											
18...	6	--	240	--	<1	--	5	--	2	--	2400
MAY											
16...	4	<20	78	80	<1	<.56	<3	<1.0	<5	<5.2	100
JUN											
26...	6	--	160	--	<1	--	<4	--	<2	--	380
JUL											
11...	6	4	100	103	<1	<.28	<1	<.80	<2	<2.4	<90

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT											
14...	<100	2	<1000	33	24	<.10	<.2	<39	<400	<3	<2
NOV											
19...	<100	<1	<1000	43	39	<.15	<.2	<390	<400	6	4
DEC											
21...	<10	<4	<500	8	81	<.30	<.2	<390	<40	8	6
JAN											
25...	<90	<4	<900	40	45	<.30	<.2	<39	<360	8	6
FEB											
24...	--	10	--	450	--	<.30	--	39	--	E2	--
MAR											
09...	<90	<1	<2.0	58	54	<.30	.8	<2	<2.8	8	7
APR											
18...	--	<2	--	65	--	<.30	--	<39	--	E2	--
MAY											
16...	<90	<4	<4.0	70	59	<.30	E.2	<7	<5.6	<3	<24
JUN											
26...	--	<4	--	42	--	<.30	--	<120	--	<3	--
JUL											
11...	<100	<2	<2.0	110	45	<.30	.3	<4	<2.8	3	<2

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

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

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
OCT											
14...	<1	<2.0	<31	E166	--	--	--	--	--	--	--
NOV											
19...	<1	<1.0	<310	<200	--	--	--	--	--	--	--
DEC											
21...	<4	<2.0	99	94	--	--	--	--	--	--	--
JAN											
25...	<4	<4.0	<31	<180	--	--	--	--	--	--	--
FEB											
24...	<1	--	74	--	--	--	--	--	--	--	--
MAR											
09...	<2	<2.0	<31	<180	--	--	--	--	--	--	--
APR											
18...	<2	--	<31	--	--	--	--	--	--	--	--
MAY											
16...	<2	<2.0	<31	<180	--	--	--	--	--	--	--
JUN											
26...	<2	--	<93	--	<.040	<.10	<1.00	<.100	<.100	<.100	<.100
JUL											
11...	<2	<2.0	<93	<200	--	--	--	--	--	--	--

DATE	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
NOV											
19...	--	--	--	--	--	--	--	--	--	--	--
DEC											
21...	--	--	--	--	--	--	--	--	--	--	--
JAN											
25...	--	--	--	--	--	--	--	--	--	--	--
FEB											
24...	--	--	--	--	--	--	--	--	--	--	--
MAR											
09...	--	--	--	--	--	--	--	--	--	--	--
APR											
18...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	--	--	--	--	--	--	--	--	--	--	--
JUN											
26...	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	141	<2.00	<.100
JUL											
11...	--	--	--	--	--	--	--	--	--	--	--

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

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

DATE	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT										
14...	--	--	--	--	--	--	--	--	--	--
NOV										
19...	--	--	--	--	--	--	--	--	--	--
DEC										
21...	--	--	--	--	--	--	--	--	--	--
JAN										
25...	--	--	--	--	--	--	--	--	--	--
FEB										
24...	--	--	--	--	--	--	--	--	--	--
MAR										
09...	--	--	--	--	--	--	--	--	--	--
APR										
18...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	--	--	--	--	--	--	--	--	--	--
JUN										
26...	<.030	132	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUL										
11...	--	--	--	--	--	--	--	--	--	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	444.6	13780	9460	11360	4000	4740	2100	2480	2400
NOV.	1999	293.3	14720	10120	8010	4200	3360	2200	1730	2500
DEC.	1999	864.4	8230	5620	13120	2300	5350	1300	3010	1500
JAN.	2000	506	16640	11480	15680	4900	6690	2400	3250	2800
FEB.	2000	594	13420	9210	14780	3800	6170	2000	3220	2300
MAR.	2000	15078	1990	1330	54140	480	19500	380	15490	430
APR.	2000	2522	6790	4570	31130	1700	11730	1200	8280	1400
MAY	2000	1622	7440	5030	22020	1900	8460	1300	5660	1500
JUNE	2000	6196	2170	1440	24160	510	8510	430	7130	490
JULY	2000	997.3	5590	3760	10110	1400	3800	1000	2710	1100
AUG.	2000	17.32	5650	3780	177	1400	64.7	1100	49.3	1200
SEPT	2000	0	--	--	--	--	--	--	--	--
TOTAL		29134.92	**	**	204700	**	78370	**	53010	**
WTD.AVG.		80	3860	2600	**	1000	**	670	**	770

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	19000	18500	18700	7070	4110	5550	16300	16000	16200	16800	16500	16600
2	19100	18900	19000	14300	7070	11200	16300	16100	16200	17000	16600	16800
3	19100	18800	19000	14900	12900	14000	16200	16000	16100	16700	16200	16500
4	19000	18700	18900	14500	13300	13900	16100	5160	11300	16800	16400	16600
5	19700	16700	18900	15300	14400	15000	13600	10300	12300	17400	16600	17000
6	16700	11800	12800	15400	14000	14500	13800	10100	11800	17400	17100	17200
7	13300	10800	11600	15900	15400	15700	15100	13800	14500	17300	16000	17000
8	16200	13300	15000	16400	15700	16100	15800	14600	15500	16100	14300	15300
9	16900	16100	16500	16500	13900	16100	14700	211	2070	16100	15800	15900
10	19100	16200	17500	16600	16300	16400	2830	780	1420	16800	16100	16500
11	18900	13200	16400	16600	16200	16400	5980	2830	4170	17000	16800	16900
12	15700	8500	10500	16300	15800	16100	9190	5980	7640	17100	16900	17000
13	12500	8620	11100	15900	15600	15800	10800	9190	10100	17200	17000	17100
14	12400	11800	12100	16300	15900	16100	12000	10800	11400	17300	17000	17200
15	12100	11800	11900	16600	16300	16400	13000	12000	12500	17200	16900	17100
16	13700	12100	12700	16700	16500	16500	13700	13000	13300	17000	16700	16900
17	14700	13700	14300	16700	16500	16600	14400	13700	14000	16800	16600	16700
18	15300	14700	15000	16700	16500	16600	15100	14400	14800	16700	16400	16600
19	15600	15200	15400	16800	16000	16500	15600	15100	15300	16700	16400	16500
20	16700	15600	16100	16200	15900	16000	15800	15600	15700	16700	16500	16600
21	17100	16500	16800	16200	15700	16100	15900	15100	15500	17000	16500	16700
22	17700	17100	17400	16100	15800	15900	15200	15000	15100	17200	16800	17000
23	18100	17600	17800	16100	15800	15900	15800	15100	15500	17100	16800	17000
24	18700	18000	18200	16100	15900	16000	16300	15800	16000	17200	16800	17000
25	18700	18000	18400	16000	15400	15900	16800	16200	16500	17200	16400	16800
26	18100	16600	17200	16000	15800	15900	17000	16700	16900	17000	16600	16800
27	16700	16000	16400	16100	15900	16000	17000	16700	16800	16900	16200	16500
28	16900	16300	16600	16100	15900	16000	16800	16600	16700	16300	16100	16200
29	17400	15500	17100	16100	16000	16000	16900	16600	16800	16200	15900	16100
30	15500	6110	11200	16100	15900	16000	16800	16600	16700	16200	15900	16100
31	9750	4450	6320	---	---	---	16900	16500	16700	16300	16000	16100
MONTH	19700	4450	15400	16800	4110	15400	17000	211	13400	17400	14300	16700

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	16100	15400	15700	15700	14100	15400	6550	5020	5840	12000	4920	9190
2	16500	15400	15900	15400	12600	13800	6700	2720	4600	10600	4120	6030
3	16700	16400	16600	15100	13300	14600	5730	3860	4400	6080	4950	5540
4	16900	16600	16800	16700	15000	16000	6070	4440	5600	8180	5890	7080
5	17200	16900	17000	16700	11800	14700	7420	5740	6360	9440	7580	8350
6	17300	16900	17100	12900	11200	12000	8320	7420	7880	9740	8960	9470
7	17100	16800	16900	13300	12000	12600	9210	8320	8810	9480	8550	9020
8	17100	16900	17000	13000	12300	12800	9420	9210	9300	10500	9340	9910
9	17500	17100	17400	12800	11600	12000	9910	9320	9590	10300	9490	9920
10	17500	17100	17200	13200	12100	12800	10200	9900	10000	10800	9460	10100
11	17800	17200	17500	13200	12400	13000	10100	9740	10000	11600	10300	10900
12	17900	17400	17600	12400	11300	11800	9740	7880	9170	12100	11000	11500
13	17700	17400	17500	12700	11300	11800	8860	7150	7830	12300	10800	11500
14	17900	17500	17700	13800	12700	13300	9270	6580	8340	12800	11100	12000
15	17800	17400	17600	14300	13800	14000	10300	5720	9060	13000	11500	12300
16	17900	17600	17700	14600	14300	14500	7180	3220	5270	12900	12000	12300
17	17800	17300	17600	14800	14500	14600	4260	2650	3440	12900	12400	12500
18	18000	17300	17700	14700	14500	14600	7730	4260	6510	13600	12900	13100
19	18200	17900	18000	14700	14600	14700	7410	5250	6210	13800	13600	13700
20	18100	17700	17900	15100	14300	14700	8130	7060	7570	13800	13400	13600
21	17800	17400	17600	15400	15100	15200	9710	8130	8950	13800	11700	13400
22	17500	16400	17200	15300	597	14300	10100	3510	9250	13500	8690	10900
23	17000	5350	12000	1890	441	931	9780	4920	7710	14900	10200	13100
24	8820	3880	5560	1810	893	1300	10400	9400	9860	15800	14900	15400
25	13500	8820	10700	---	---	e1870	11200	10400	10800	15700	14600	15100
26	9320	4930	7210	---	---	e2300	11500	10600	11000	15600	890	10300
27	5380	3640	4310	---	---	e2660	12200	11300	11700	4380	950	2870
28	13300	5380	9400	3910	3160	3540	12600	11700	12100	4230	1890	2860
29	14200	11700	13100	4740	3910	4320	12600	12000	12300	5250	2940	4310
30	---	---	---	5450	4740	5100	12300	11600	12000	6360	4350	5520
31	---	---	---	5970	5450	5720	---	---	---	7100	6360	6610
MONTH	18200	3640	15200	---	---	10700	12600	2650	8380	15800	890	9950

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	8070	7100	7500	7540	4250	5480	---	---	e5300	---	---	---
2	8430	8070	8310	5520	4560	4760	---	---	e5500	---	---	---
3	8820	1190	5890	8940	1980	4340	---	---	e5700	---	---	---
4	4710	710	2260	2770	1960	2220	---	---	e5900	---	---	---
5	---	---	e1710	4040	2770	3390	---	---	e6100	---	---	---
6	---	---	e900	5620	4040	4820	---	---	e6300	---	---	---
7	---	---	e1040	7340	5620	6360	---	---	e6500	---	---	---
8	2550	1130	1910	8930	7340	8130	---	---	e6700	---	---	---
9	2220	2060	2150	10400	8930	9580	---	---	---	---	---	---
10	2060	1850	2010	11900	10400	11100	---	---	---	---	---	---
11	2140	1850	1950	12400	11900	12100	---	---	---	---	---	---
12	2550	2040	2280	12200	1800	9730	---	---	---	---	---	---
13	4840	2550	3560	6650	3380	5430	---	---	---	---	---	---
14	4470	3380	3610	7280	6310	6820	---	---	---	---	---	---
15	4400	3420	3780	12500	7030	8940	---	---	---	---	---	---
16	4770	4400	4620	10900	7360	9030	---	---	---	---	---	---
17	---	---	e2500	13800	10900	12800	---	---	---	---	---	---
18	---	---	e1100	14800	13800	14200	---	---	---	---	---	---
19	---	---	e1000	15200	14500	14800	---	---	---	---	---	---
20	---	---	e1800	15300	14100	14700	---	---	---	---	---	---
21	---	---	e2600	14100	9880	12700	---	---	---	---	---	---
22	---	---	e3300	12800	5940	10400	---	---	---	---	---	---
23	---	---	e4100	9590	5420	6770	---	---	---	---	---	---
24	---	---	e5000	6420	5040	5590	---	---	---	---	---	---
25	---	---	e5800	5220	5000	5090	---	---	---	---	---	---
26	---	---	e6700	5090	4940	5010	---	---	---	---	---	---
27	6840	6730	6800	5270	4680	5000	---	---	---	---	---	---
28	6880	6780	6830	4750	4380	4610	---	---	---	---	---	---
29	6890	6820	6850	4990	3860	4800	---	---	---	---	---	---
30	6970	6650	6830	---	---	e4950	---	---	---	---	---	---
31	---	---	---	---	---	e5100	---	---	---	---	---	---
MONTH	---	---	3820	---	---	7700	---	---	---	---	---	---

e Estimated

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	28.4	13.8	20.1	19.9	12.7	15.5	17.9	9.1	13.1	15.3	7.0	10.9
2	27.8	15.6	20.4	16.4	8.5	11.7	18.8	12.3	14.7	16.2	9.9	12.5
3	26.2	14.2	19.0	17.3	7.1	11.6	17.2	8.4	13.0	12.9	6.2	9.9
4	18.6	13.1	15.0	20.1	8.8	13.8	13.8	7.3	10.5	10.4	.9	5.6
5	26.1	11.5	17.9	22.7	11.3	16.4	11.8	3.9	7.0	10.6	.9	5.7
6	29.7	16.9	22.0	23.9	14.1	18.3	12.0	1.4	6.5	11.3	2.5	6.6
7	27.9	15.0	20.4	23.2	14.0	18.1	14.1	4.1	8.8	9.1	2.5	6.3
8	30.0	18.0	22.2	22.1	14.0	17.1	17.3	7.7	12.4	14.4	8.3	10.5
9	30.0	17.9	22.7	21.8	13.1	16.8	14.4	6.7	9.7	13.4	6.3	9.4
10	26.1	16.4	21.6	24.2	13.9	18.4	11.0	3.3	7.0	13.9	5.0	9.1
11	27.9	17.8	22.5	23.9	14.1	18.3	9.9	6.2	8.2	14.6	6.3	10.0
12	28.6	18.3	23.0	23.4	12.9	17.7	12.9	8.0	10.4	16.0	7.1	10.9
13	29.5	18.1	23.1	23.6	14.1	18.2	12.7	3.8	8.2	13.6	6.7	9.6
14	28.0	17.6	22.4	24.3	14.1	18.4	12.2	5.2	8.1	11.4	2.9	7.1
15	28.5	18.7	22.6	22.0	12.8	16.8	10.9	1.0	5.9	16.1	6.0	10.6
16	23.4	15.7	19.6	21.7	11.4	16.1	10.5	1.4	6.0	18.5	10.4	13.8
17	15.7	10.7	12.7	20.4	12.0	15.6	12.5	6.0	8.9	18.9	9.9	13.9
18	15.7	10.3	12.9	21.1	12.6	16.2	12.0	5.6	8.5	13.3	9.1	11.1
19	21.3	8.4	14.0	18.5	11.0	14.1	12.2	6.1	8.8	15.8	6.1	10.4
20	21.6	8.6	14.5	17.6	7.6	12.1	9.9	3.3	7.0	12.1	5.2	8.4
21	24.3	10.5	16.3	19.0	9.4	13.3	10.5	3.8	6.4	12.3	4.1	8.1
22	23.7	11.5	16.8	17.8	9.8	13.3	10.7	1.7	5.9	14.8	8.3	11.0
23	22.3	10.5	15.6	16.4	8.7	11.8	11.4	1.4	6.2	14.2	6.4	9.9
24	22.3	9.7	15.2	13.0	5.3	8.9	12.2	3.2	7.4	11.2	3.7	7.2
25	23.2	10.9	16.2	14.1	4.6	8.9	11.6	3.2	7.5	9.0	4.9	6.6
26	24.2	11.5	17.1	15.7	5.0	9.7	15.3	8.3	11.0	5.7	2.6	4.2
27	23.8	12.4	17.2	17.6	7.0	11.6	13.2	6.0	9.2	2.9	1.9	2.3
28	25.4	15.1	19.0	16.9	7.5	11.7	14.1	4.5	8.9	2.1	1.0	1.6
29	25.6	15.4	19.4	16.3	7.8	11.5	13.1	5.8	9.5	---	---	---
30	17.5	13.8	15.2	16.9	9.6	12.3	14.6	7.5	10.3	9.8	.3	4.5
31	14.1	12.4	13.3	---	---	---	13.9	5.4	9.2	9.6	1.9	5.7
MONTH	30.0	8.4	18.4	24.3	4.6	14.5	18.8	1.0	8.8	---	---	---

07311900 WICHITA RIVER NEAR SEYMOUR, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.3	5.7	7.3	19.1	9.4	13.5	14.5	11.4	12.6	22.7	16.6	19.2
2	11.7	2.0	6.6	21.4	11.8	15.4	17.0	10.1	13.1	20.0	16.4	18.0
3	14.4	4.2	8.1	15.5	6.8	10.4	15.1	11.6	13.0	26.1	16.5	20.8
4	11.3	4.2	7.2	18.1	6.1	11.5	18.0	8.5	13.0	26.9	18.9	22.4
5	12.6	2.8	6.8	18.0	9.1	13.1	21.8	12.0	16.7	27.3	20.3	23.2
6	13.2	3.6	8.0	21.7	12.5	16.8	25.1	14.1	19.2	31.9	21.4	25.8
7	16.1	5.4	9.8	22.5	14.3	17.6	22.9	15.6	19.3	31.3	22.0	26.0
8	16.6	5.4	10.5	18.7	9.2	13.8	21.1	11.3	15.8	31.6	22.0	26.0
9	16.7	7.6	11.9	21.4	9.3	14.6	21.2	11.9	16.3	29.0	19.8	24.2
10	20.3	9.2	13.9	21.6	9.5	14.4	22.1	14.6	18.1	30.9	19.1	24.2
11	15.2	7.3	10.8	19.2	6.0	11.9	19.2	14.5	17.1	31.7	21.7	26.1
12	13.8	4.0	8.9	20.6	7.7	13.4	15.0	13.5	14.1	29.5	20.3	24.9
13	16.8	8.4	11.7	22.5	8.6	14.8	22.1	12.4	16.2	26.3	16.4	20.8
14	16.6	6.0	10.6	22.6	13.2	17.3	25.3	15.2	19.7	27.8	15.5	21.1
15	19.8	8.4	13.7	26.0	13.4	18.6	24.5	15.7	19.7	29.4	16.6	22.6
16	15.8	9.0	12.2	17.0	6.6	11.5	20.3	12.8	16.3	29.2	21.0	24.0
17	21.4	10.8	15.2	10.3	5.4	7.3	23.2	14.8	18.5	28.2	21.1	23.3
18	18.1	8.4	13.9	18.2	5.6	10.6	28.1	18.7	22.8	28.6	19.5	22.9
19	15.7	5.3	10.0	20.6	6.5	12.9	28.1	20.2	23.8	19.5	15.9	16.9
20	14.2	8.4	10.9	22.4	8.1	14.5	24.9	16.4	20.4	30.3	14.6	21.7
21	20.0	9.4	13.9	17.1	13.6	14.7	25.0	15.4	19.8	32.5	20.0	25.7
22	21.4	14.1	16.4	16.2	12.2	13.9	21.2	15.4	18.2	31.4	21.4	26.0
23	18.0	9.8	13.7	15.3	12.1	13.5	24.1	14.6	18.9	32.0	20.5	25.7
24	21.3	10.8	15.7	16.5	14.2	15.4	27.5	16.0	21.2	33.9	21.4	26.7
25	19.6	13.5	16.3	18.8	16.1	17.4	27.9	17.9	22.5	34.2	23.6	28.2
26	17.0	9.6	13.1	22.1	18.7	20.6	29.9	18.4	23.6	27.8	22.6	25.6
27	18.3	7.8	12.4	23.1	19.3	21.0	24.8	19.6	22.0	30.1	23.9	26.6
28	18.7	8.2	12.8	21.9	17.5	19.8	27.0	16.5	21.3	31.7	23.4	27.1
29	19.3	10.5	14.3	21.4	16.9	19.0	26.6	17.4	21.7	32.5	22.5	27.1
30	---	---	---	20.2	13.9	16.7	25.5	18.8	21.6	32.8	23.1	27.4
31	---	---	---	16.4	13.5	14.6	---	---	---	32.6	22.4	26.8
MONTH	21.4	2.0	11.6	26.0	5.4	14.9	29.9	8.5	18.5	34.2	14.6	24.1

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	32.0	21.8	26.2	29.1	23.7	26.4	36.0	21.8	28.5	---	---	---
2	26.3	23.4	24.5	33.9	25.1	28.8	36.5	21.4	29.0	---	---	---
3	24.8	22.7	23.6	30.6	25.4	28.0	36.4	22.3	29.4	---	---	---
4	27.2	24.0	25.3	32.0	24.6	27.9	35.7	23.9	29.4	---	---	---
5	27.4	23.5	25.6	33.2	23.1	27.5	31.7	23.9	27.8	---	---	---
6	28.4	21.8	24.8	34.5	23.6	28.3	33.1	24.0	28.9	---	---	---
7	30.4	21.3	25.5	35.1	23.5	28.5	35.0	24.5	30.5	---	---	---
8	29.9	20.5	25.2	34.4	23.2	28.3	34.1	25.6	30.1	---	---	---
9	28.4	23.3	25.5	34.8	22.9	28.1	---	---	---	---	---	---
10	28.0	23.0	24.9	35.1	23.1	28.4	---	---	---	---	---	---
11	29.5	23.5	26.0	35.6	23.7	29.1	---	---	---	---	---	---
12	30.9	23.6	26.6	32.1	24.0	27.1	---	---	---	---	---	---
13	31.5	23.2	26.7	36.6	25.1	29.2	---	---	---	---	---	---
14	27.3	22.9	24.6	37.2	25.2	30.7	---	---	---	---	---	---
15	32.8	20.3	26.1	38.4	25.3	31.1	---	---	---	---	---	---
16	29.5	23.4	26.2	35.9	26.5	30.1	---	---	---	---	---	---
17	25.8	18.2	20.7	34.4	23.2	27.8	---	---	---	---	---	---
18	19.6	18.5	19.1	36.1	22.6	28.4	---	---	---	---	---	---
19	25.6	19.6	22.0	37.7	23.6	29.7	---	---	---	---	---	---
20	28.1	22.9	25.1	37.9	24.0	30.1	---	---	---	---	---	---
21	28.2	24.4	26.1	37.3	23.0	29.0	---	---	---	---	---	---
22	32.5	23.7	27.6	35.5	23.4	28.1	---	---	---	---	---	---
23	31.0	24.3	27.4	36.1	23.0	28.1	---	---	---	---	---	---
24	34.1	24.2	28.4	36.9	22.2	28.4	---	---	---	---	---	---
25	34.5	23.9	28.3	33.7	22.0	26.5	---	---	---	---	---	---
26	28.4	24.1	25.8	36.7	22.3	28.5	---	---	---	---	---	---
27	31.8	24.1	27.2	35.1	23.1	27.3	---	---	---	---	---	---
28	28.8	24.6	26.6	34.3	22.8	27.6	---	---	---	---	---	---
29	27.6	24.3	25.7	33.5	23.6	27.5	---	---	---	---	---	---
30	31.4	23.4	27.0	33.2	21.5	27.0	---	---	---	---	---	---
31	---	---	---	34.9	21.1	27.5	---	---	---	---	---	---
MONTH	34.5	18.2	25.5	38.4	21.1	28.4	---	---	---	---	---	---

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07312000 LAKE KEMP NEAR MABELLE, TX

LOCATION.--Lat 33°45′30", long 99°09′03", Baylor County, Hydrologic Unit 11130206, in outlet gate tower near center of dam on Wichita River, 6.2 mi north of Mabelle, 13 mi northeast of Seymour, and 126.7 mi upstream from mouth.

DRAINAGE AREA.--2,086 mi^2.

PERIOD OF RECORD.--Oct 1922 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Oct 1, 1972, nonrecording gage at different site and at datum 2.40 ft higher. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 8,890 ft long. The original dam was completed Aug 25, 1923, but deliberate impoundment had begun Oct 1, 1922. Enlargement of the dam was completed in Nov 1973. The 3,000-foot-wide uncontrolled spillway is located approximately 600 ft to right and slightly upstream from right end of dam. The controlled outlet works near center of dam consist of two hydraulically operated slide gates 5 ft 8-in by 13 ft with a 13-foot-diameter conduit and spillway basin. The dam and lake are owned by the city of Wichita Falls and the Wichita County Water Improvement District No. 2. Water is used for irrigation in the Wichita River Valley, oil field operation, municipal, and industrial uses. The capacity table is based on a resurvey made in 1973. Conservation pool storage is 319,600 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,183.0
Crest of spillway	1,160.0
Top of flood-control pool	1,156.0
Top of conservation pool	1,147.1
Lowest gated outlet (invert)	1,090.0

COOPERATION.--Capacity table No. 4-C was provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 420,900 acre-ft, Jun 30, 1941, elevation, 1,152.0 ft, present datum; minimum since first appreciable storage, 26,160 acre-ft, Jun 30, 1953, elevation, 1,108.0 ft, present datum.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 173,800 acre-ft, Apr 20, elevation, 1,136.78 ft; minimum contents, 100,200 acre-ft, Sep 30, elevation, 1,126.69 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

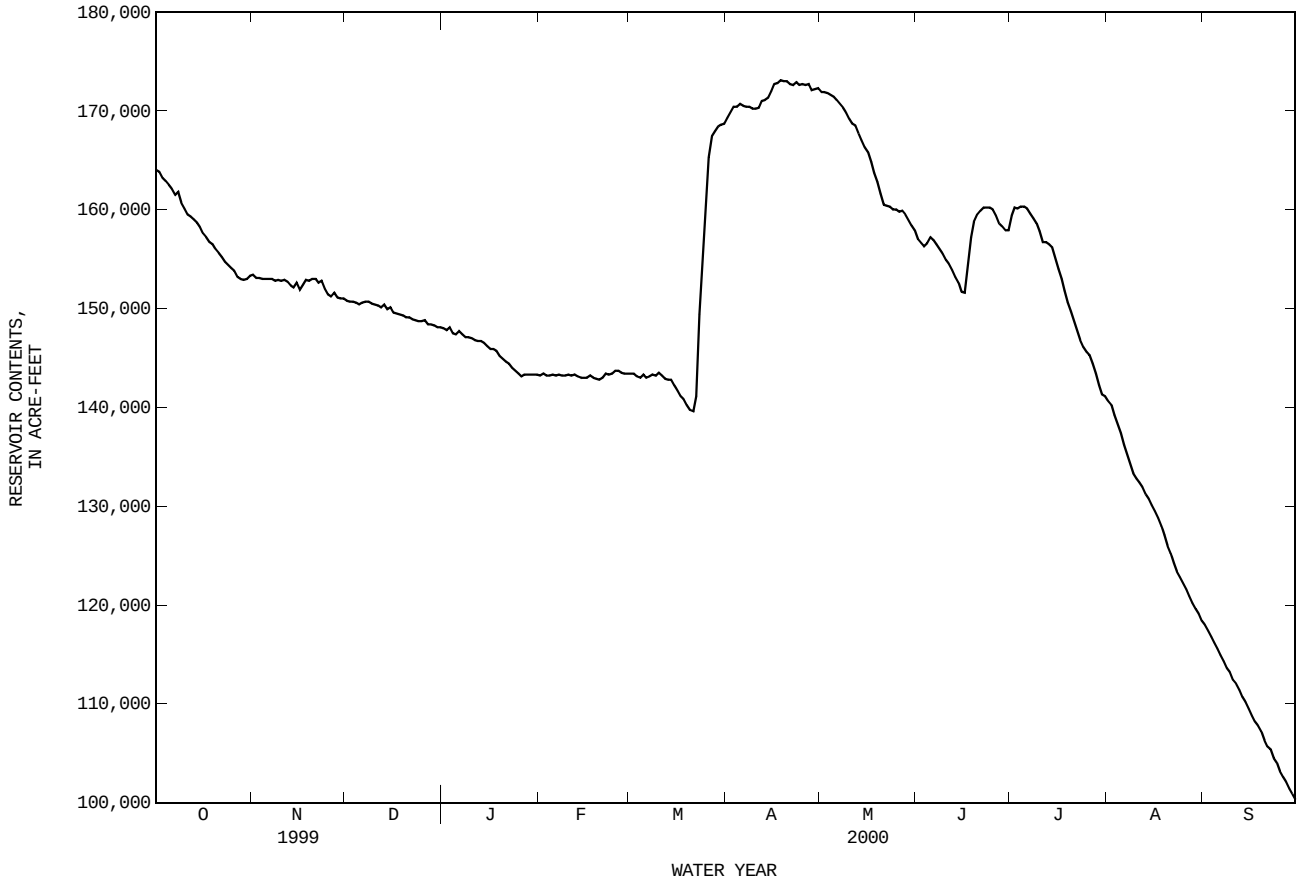
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	164000	153400	150800	148000	143200	143400	169300	171900	157000	159400	140600	118000
2	163800	153100	150700	147800	143400	143400	169900	171900	156600	160200	140200	117400
3	163200	153100	150700	148100	143200	143100	170400	171800	156300	160100	139200	116800
4	162900	153000	150600	147500	143200	143000	170400	171600	156600	160300	138300	116200
5	162500	153000	150400	147400	143300	143300	170700	171400	157200	160300	137400	115600
6	162100	153000	150600	147700	143200	143000	170500	171100	156900	160100	136200	114900
7	161500	153000	150700	147400	143300	143100	170400	170700	156500	159600	135300	114300
8	161800	152800	150700	147100	143200	143300	170400	170300	156000	159100	134300	113600
9	160700	e152900	150500	147100	143200	143200	170200	169800	155500	158600	133300	113200
10	160100	152800	150400	147000	143300	143500	170200	169200	154900	157800	132800	112400
11	159500	152900	150300	146800	143200	143200	170300	168700	154500	156700	132400	112000
12	159300	152700	150100	146700	143300	142900	171000	168500	153900	156700	131900	111400
13	159000	152300	150400	146700	143100	142800	171100	167700	153200	156500	131200	110700
14	158700	152100	149900	146500	143000	142800	171300	167000	152600	156200	130700	110200
15	158200	152600	150100	146200	143000	142200	172000	166300	151700	155100	130100	109500
16	157600	151900	149600	145900	143000	141700	172700	165800	151600	154000	129500	108800
17	157200	152400	149500	145900	143200	141100	172800	164800	154300	153000	128800	108200
18	156700	152900	149400	145700	143000	140800	173100	163700	157200	151800	128000	107800
19	156500	152800	149300	145200	142900	140200	173000	162800	158800	150600	127100	107200
20	156000	153000	149100	144900	142800	139700	173000	161600	159500	149700	126000	106300
21	155600	153000	149100	144600	143000	139600	172700	160500	159900	148700	125200	105700
22	155200	152600	148900	144400	143400	141100	172600	160400	160200	147800	124200	105400
23	154700	152800	148800	144000	143300	149400	172900	160300	160200	146800	123400	104500
24	154400	152000	148700	143700	143400	155100	172600	160000	160200	146100	122800	104000
25	154100	151400	148700	143400	143700	161000	172700	160000	160000	145600	122200	103200
26	153800	151200	148800	143100	143700	165300	172600	159800	159400	145300	121600	102600
27	153200	151600	148400	143300	143500	167400	172700	159900	158600	144400	120900	102100
28	153000	151100	148400	143300	143400	167900	172100	159500	158300	143400	120200	101400
29	152900	151000	148300	e143300	143400	168400	172200	158900	157900	142200	119600	100900
30	153000	151000	148100	143300	---	168600	172300	158400	157900	141300	119100	100300
31	153300	---	148100	143300	---	168700	---	157900	---	141100	118400	---
MAX	164000	153400	150800	148100	143700	168700	173100	171900	160200	160300	140600	118000
MIN	152900	151000	148100	143100	142800	139600	169300	157900	151600	141100	118400	100300
(+)	1134.53	1134.25	1133.89	1133.27	1133.28	1136.26	1136.62	1135.08	1135.08	1132.99	1129.69	1126.70
(@)	-11200	-2300	-2900	-4800	+100	+25300	+3600	-14400	0	-16800	-22700	-18100

CAL YR 1999 MAX 244500 MIN 143700 (@) +1700
WTR YR 2000 MAX 173800 MIN 100300 (@) -64200

(e) Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07312000 LAKE KEMP NEAR MABELLE, TX--Continued



07312100 WICHITA RIVER NEAR MABELLE, TX

LOCATION.--Lat 33°45′36", long 99°08′33", Baylor County, Hydrologic Unit 11130206, near left bank at downstream side of bridge on U.S. Highways 183 and 283, 0.3 mi downstream from Lake Kemp Dam, 6.2 mi north of Mabelle, and 13 mi northeast of Seymour.

DRAINAGE AREA.--2,086 mi^2, all of which is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--1952-58 (occasional discharge measurements), Oct 1959 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,062.72 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in Oct 1959, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 07312000, conservation pool storage 319,600 acre-ft). Water is released from Lake Kemp to supply Lake Diversion, 12.5 mi downstream. Water from Lake Diversion is released for mining, recreation, and for irrigation in the vicinity of Wichita Falls.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	120	1.8	1.3	.97	.70	.54	.87	123	232	91	80	124
2	120	1.6	1.2	.84	.62	.62	.81	124	257	.96	227	228
3	120	1.4	1.2	54	.58	.60	.81	123	286	.64	318	227
4	120	1.5	1.3	120	.59	.60	.63	121	286	.58	400	228
5	120	1.5	1.3	120	.56	.75	.55	120	264	.58	398	226
6	118	1.6	1.3	121	.58	.75	.54	119	223	.58	398	223
7	118	1.6	1.3	122	.58	.80	.64	119	223	79	400	180
8	204	1.5	1.3	121	.58	.71	.62	119	218	113	403	229
9	247	1.5	1.4	120	.55	.80	.54	122	235	116	400	224
10	247	1.5	1.3	120	.56	.88	.55	121	251	213	209	234
11	247	1.6	1.3	120	.58	.88	.68	121	251	384	69	237
12	176	1.6	1.4	121	.57	.89	.75	122	250	280	221	238
13	122	1.6	65	123	.58	.92	.58	123	249	3.2	222	215
14	121	1.6	123	122	.57	87	.56	122	250	e150	120	238
15	119	1.6	124	121	.58	222	.56	156	239	e473	229	232
16	119	1.6	123	120	.57	224	.68	259	80	e473	231	149
17	121	1.4	123	120	.51	222	.58	337	137	e150	318	196
18	118	1.3	122	118	.46	220	.58	338	9.5	142	270	175
19	118	1.4	123	119	.47	156	.57	380	8.3	473	399	206
20	120	1.4	49	119	.47	118	.58	448	6.8	254	398	226
21	118	1.4	1.3	118	.46	119	.54	417	5.0	285	398	146
22	118	1.4	1.1	119	.51	123	.54	1.9	3.0	409	395	241
23	118	1.4	1.1	119	.47	56	.56	.72	2.3	407	396	229
24	118	1.4	1.1	119	.43	1.1	.54	.62	2.0	312	235	e146
25	118	1.4	1.0	120	.50	1.0	.57	.67	1.7	176	229	e146
26	119	1.4	1.0	47	.47	.92	.55	100	161	1.7	230	e146
27	122	1.4	1.0	.98	.49	.84	18	174	276	321	231	e146
28	122	1.4	.98	.92	.50	.83	116	174	224	504	230	e146
29	122	1.4	.99	.84	.52	.82	121	174	141	585	228	e146
30	122	1.4	.97	.75	---	.77	121	174	139	578	228	e146
31	51	---	.95	.69	---	.76	---	197	---	227	229	---
TOTAL	4163	44.6	879.09	2748.99	15.61	1563.78	391.98	5030.91	4910.6	7203.24	8739	5873
MEAN	134	1.49	28.4	88.7	.54	50.4	13.1	162	164	232	282	196
MAX	247	1.8	124	123	.70	224	121	448	286	585	403	241
MIN	51	1.3	.95	.69	.43	.54	.54	.62	1.7	.58	69	124
AC-FT	8260	88	1740	5450	31	3100	777	9980	9740	14290	17330	11650

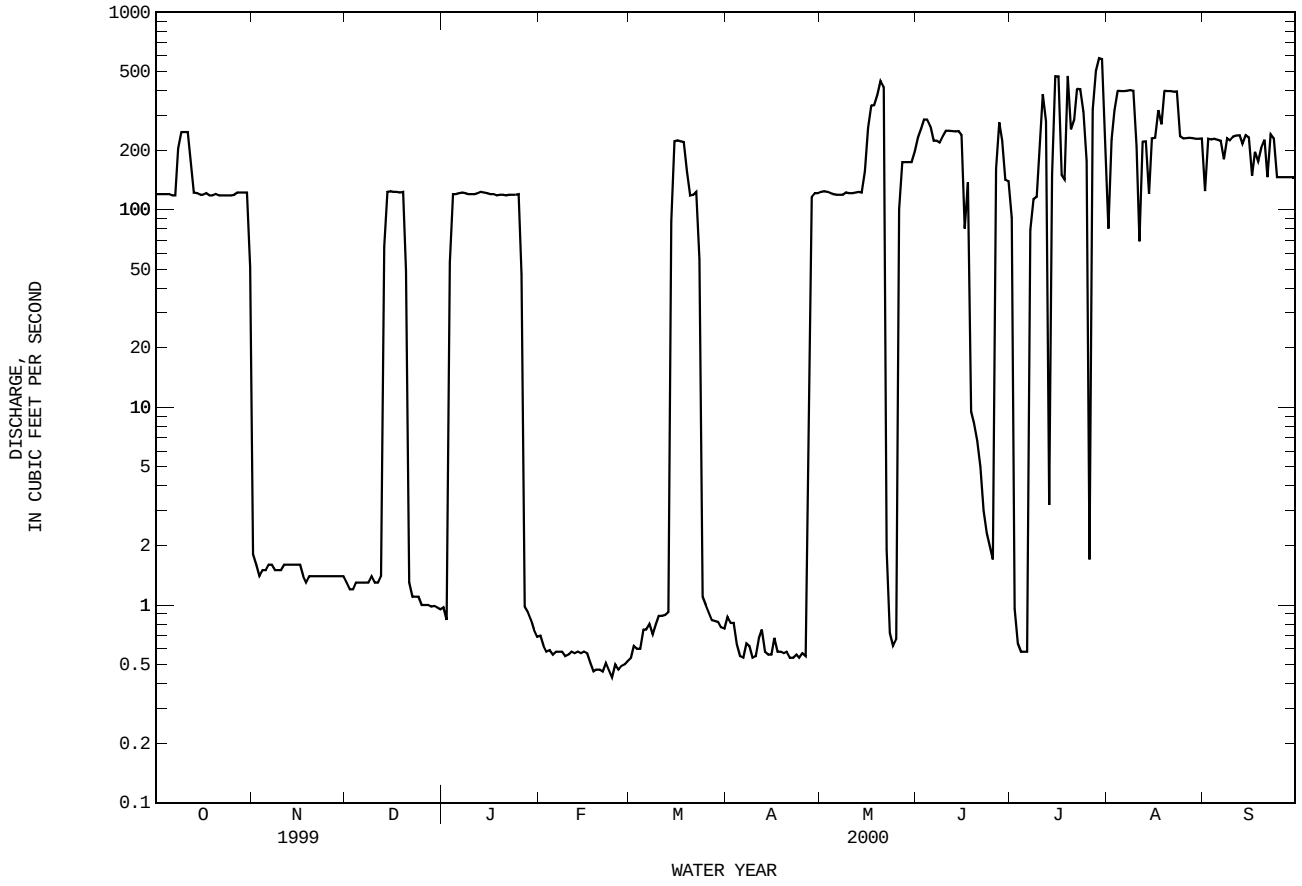
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000, BY WATER YEAR (WY)

MEAN	134	99.7	40.3	62.0	65.6	141	163	171	299	315	284	177
MAX	952	1271	247	648	769	659	659	1246	1810	923	1742	915
(WY)	1987	1987	1987	1992	1992	1968	1968	1990	1992	1967	1995	1986
MIN	.66	.39	.24	.60	.51	.50	.89	6.53	2.59	140	30.9	1.66
(WY)	1985	1974	1997	1979	1979	1989	1981	1977	1989	1975	1978	1974

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	35200.04		41563.80			
ANNUAL MEAN	96.4		114		163	
HIGHEST ANNUAL MEAN					522	1987
LOWEST ANNUAL MEAN					59.9	1981
HIGHEST DAILY MEAN	415	Aug 23	585	Jul 29	3530	Jun 24 1992
LOWEST DAILY MEAN	.47	Feb 26	.43	Feb 24	.09	May 8 1989
ANNUAL SEVEN-DAY MINIMUM	.50	Feb 22	.47	Feb 18	.14	May 7 1989
INSTANTANEOUS PEAK FLOW			602	Jul 28	4290	Mar 24 1976
INSTANTANEOUS PEAK STAGE			5.07	Jul 28	10.47	Mar 24 1976
ANNUAL RUNOFF (AC-FT)	69820		82440		118200	
10 PERCENT EXCEEDS	336		260		397	
50 PERCENT EXCEEDS	2.0		118		13	
90 PERCENT EXCEEDS	.62		.58		.70	

e Estimated

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec 1965 to May 1993, Oct 1994 to current year.
PESTICIDE DATA: Oct 1996 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jul 1968 to May 1993(local observer), Oct 1994 to current year.
WATER TEMPERATURE: Jul 1968 to May 1993(local observer), Oct 1994 to current year.

INSTRUMENTATION.--Water-quality monitor since Oct 1994.

REMARKS.--Records fair. Mean monthly and annual concentrations and loads for selected chemical constituents have been computed using the daily (or continuous) records of specific conductance and a regression relation between each chemical constituent and specific conductance. New regression equations were developed based on data from water years 1990 to 2000. The standard error of estimate for dissolved solids is 3%, chloride is 4%, sulfate is 12% and for hardness is 5%. Regression equations developed for this station may be obtained from the U.S. Geological Survey Texas District Office upon request.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,110 microsiemens, May 13, 14, 1980; minimum daily, 561 microsiemens, May 28, 1975.
WATER TEMPERATURE: Maximum, 34.9°C, Jul 14, 2000; minimum daily, 0.0°C, Dec 20, 1973, Feb 9, 17, 1980.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 6,020 microsiemens, May 26; minimum, 3,170 microsiemens, Mar 23.
WATER TEMPERATURE: Maximum, 34.9°C, Jul 14; minimum, 5.5°C, Dec 6.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT											
14...	1240	121	5220	8.2	20.5	11.2	130	930	850	250	76
NOV											
08...	1020	1.5	5070	7.9	16.6	9.5	102	1000	880	280	79
DEC											
02...	1245	1.2	5260	8.2	16.7	12.9	141	1000	880	270	84
20...	1345	2.4	5170	6.7	11.8	11.9	115	950	790	250	78
FEB											
25...	1425	.48	5370	8.1	20.6	9.9	117	1000	840	260	89
MAR											
13...	1430	.90	5130	7.9	21.4	10.9	130	1000	830	260	87
APR											
25...	1410	.57	5300	7.8	26.0	9.1	117	990	790	260	84
MAY											
04...	1050	121	5190	8.1	19.2	7.3	83	950	850	260	73
JUN											
05...	1435	284	5370	8.3	25.0	9.5	120	960	860	260	74
JUL											
10...	1500	282	5380	8.3	27.6	7.3	98	980	890	270	75
AUG											
09...	1110	402	5430	8.1	27.0	8.2	108	950	870	260	73
SEP											
07...	1535	255	5360	8.0	27.2	8.1	107	1000	920	280	77

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	CAR-BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT											
14...	703	10	8.9	--	--	--	82	910	1200	.32	8.1
NOV											
08...	706	10	1.6	--	--	--	130	830	1200	.36	8.0
DEC											
02...	797	11	7.4	--	--	--	130	830	1200	.35	8.7
20...	745	11	8.0	--	--	--	160	820	1200	.31	14
FEB											
25...	768	11	6.5	--	--	--	160	790	1200	.37	9.4
MAR											
13...	788	11	6.4	--	--	--	180	750	1200	.35	9.4
APR											
25...	765	11	5.1	--	--	--	200	770	1200	.40	11
MAY											
04...	760	11	8.5	--	--	--	99	830	1200	.33	7.4
JUN											
05...	791	11	8.8	--	--	--	100	860	1200	.34	7.6
JUL											
10...	794	11	7.9	6	92	85	--	880	1200	.20	7.1
AUG											
09...	770	11	9.1	--	--	--	85	880	1200	.53	7.7
SEP											
07...	824	11	9.1	--	105	86	--	920	1300	.33	8.2

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

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

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	PHOS-PHORUS TOTAL (MG/L AS P) (00665)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
OCT											
14...	3220	14	<.010	<.050	<.020	--	--	.35	<.050	.054	<.010
NOV											
08...	3160	6	<.010	<.050	.115	--	.28	.39	E.031	<.050	<.010
DEC											
02...	3260	9	<.010	<.050	.092	--	.33	.42	<.050	<.050	<.010
20...	3180	8	<.010	<.050	.235	--	.25	.49	<.050	<.050	<.010
FEB											
25...	3250	15	<.010	<.050	.193	--	.57	.76	E.031	<.050	<.010
MAR											
13...	3260	40	<.010	<.050	.167	--	.29	.46	<.050	<.050	<.010
APR											
25...	3230	52	<.010	<.050	.236	--	.32	.56	E.042	<.050	<.010
MAY											
04...	3180	5	<.010	.095	<.020	.40	--	.30	<.050	<.050	<.010
JUN											
05...	3310	<10	<.010	.078	<.020	.50	--	.42	<.050	<.050	<.010
JUL											
10...	3320	<10	<.010	<.050	<.020	--	--	.37	<.050	<.050	<.010
AUG											
09...	3300	<10	<.010	<.050	<.020	--	--	.43	<.050	<.050	<.010
SEP											
07...	3490	<10	<.010	<.050	<.020	--	--	.55	<.050	<.050	<.010

DATE	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOV-ERABLE (UG/L AS BA) (01007)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	CADMIUM WATER UNFLTRD TOTAL (UG/L AS CD) (01027)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)
OCT											
14...	3	4	120	126	<1	<24	1	<1.0	3	<30	50
NOV											
08...	4	3	78	71	<1	<24	<1	<1.0	1	<30	160
DEC											
02...	5	5	73	66	<2	<24	<1	2.5	4	<10	210
20...	5	4	60	54	<1	<8.0	2	<1.0	2	<10	260
FEB											
25...	6	6	36	29	<1	<24	1	<.80	E1	<30	560
MAR											
13...	7	4	34	23	<1	<.14	<1	<.80	<1	<1.3	840
APR											
25...	8	--	34	--	<1	--	2	--	E1	--	1100
MAY											
04...	4	3	110	124	<1	E.10	<1	<.80	<1	E1.1	<20
JUN											
05...	E2	--	120	--	<1	--	E1	--	1	--	<20
JUL											
10...	3	2	120	119	<1	<.14	<1	<.80	<1	<1.3	<20
AUG											
09...	5	--	120	--	<1	--	1	--	<1	--	<90
SEP											
07...	5	4	130	120	<1	<.14	<1	<.80	2	<1.3	<90

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

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)
OCT											
14...	<30	E1	<300	17	<6.6	<.10	<.2	<39	<120	<3	<2
NOV											
08...	E30	<1	<300	160	142	<.10	<.2	<120	<120	<3	<2
DEC											
02...	41	3	<100	90	68	<.30	<.2	39	<40	E2	E2
20...	62	<1	<100	350	288	<.30	<.2	46	<40	<3	E2
FEB											
25...	<30	<1	<300	260	144	<.30	<.2	<39	<120	<3	<2
MAR											
13...	<30	E1	<1.0	410	164	<.30	<.2	<2	<1.4	<3	<2
APR											
25...	--	<1	--	400	--	<.30	--	E31	--	<3	--
MAY											
04...	<30	<1	1.3	6	2.5	<.30	<.2	<2	<1.4	<3	3
JUN											
05...	--	<1	--	17	--	<.30	--	<39	--	<3	--
JUL											
10...	<30	<1	<1.0	16	<2.2	<.30	E.2	<2	<1.4	E2	<2
AUG											
09...	--	<1	--	37	--	<.30	--	--	--	<3	--
SEP											
07...	<30	<2	<1.0	33	3.2	<.30	<.2	<2	<1.4	<3	E2

DATE	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	ALDRIN, TOTAL (UG/L) (39330)	AROCLOR 1016/ 1242 PCB WATER UNFLTRD (UG/L) (81648)	AROCLOR 1221 PCB TOTAL (UG/L) (39488)	AROCLOR 1232 PCB TOTAL (UG/L) (39492)	AROCLOR 1248 PCB TOTAL (UG/L) (39500)	AROCLOR 1254 PCB TOTAL (UG/L) (39504)	AROCLOR 1260 PCB TOTAL (UG/L) (39508)
OCT											
14...	<1	<1.0	<31	<60	--	--	--	--	--	--	--
NOV											
08...	<1	<1.0	<93	<60	--	--	--	--	--	--	--
DEC											
02...	<2	<1.0	33	<20	--	--	--	--	--	--	--
20...	<2	<1.0	57	<20	--	--	--	--	--	--	--
FEB											
25...	<1	<1.0	<31	<30	--	--	--	--	--	--	--
MAR											
13...	<1	<1.0	<31	E35	--	--	--	--	--	--	--
APR											
25...	<1	--	<31	--	--	--	--	--	--	--	--
MAY											
04...	<1	<1.0	<31	<60	<.040	<.05	<1.00	<.100	<.100	<.100	<.100
JUN											
05...	<1	--	<31	--	--	--	--	--	--	--	--
JUL											
10...	<1	<1.0	<31	<60	--	--	--	--	--	--	--
AUG											
09...	<1	--	<93	--	<.040	<.10	<1.00	<.100	<.100	<.100	<.100
SEP											
07...	<1	<1.0	<93	<60	--	--	--	--	--	--	--

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

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

DATE	CHLOR-DANE, TECH-NICAL TOTAL (UG/L) (39350)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDO-SULFAN SULFATE TOTAL (UG/L) (34351)	ENDRIN WATER UNFLTRD REC (UG/L) (39390)	ENDRIN ALDE-HYDE TOTAL (UG/L) (34366)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	PCB 207 SUR SCD 1608 WATER UNFLTRD PERCENT (99781)	TOX-APHENE, TOTAL (UG/L) (39400)	ENDO-SULFAN-I WATER WHOLE REC (UG/L) (34361)
OCT											
14...	--	--	--	--	--	--	--	--	--	--	--
NOV											
08...	--	--	--	--	--	--	--	--	--	--	--
DEC											
02...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
FEB											
25...	--	--	--	--	--	--	--	--	--	--	--
MAR											
13...	--	--	--	--	--	--	--	--	--	--	--
APR											
25...	--	--	--	--	--	--	--	--	--	--	--
MAY											
04...	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	140	<2.00	<.100
JUN											
05...	--	--	--	--	--	--	--	--	--	--	--
JUL											
10...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	<.100	<.020	<.600	<.060	<.200	<.030	<.800	<.030	142	<2.00	<.100
SEP											
07...	--	--	--	--	--	--	--	--	--	--	--

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

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

DATE	ALPHA BHC TOTAL (UG/L) (39337)	ALPHA-HCH-D6 SUR SCD 1608 WATER UNFLTRD PERCENT (99778)	ENDO-SULFAN II TOTAL (UG/L) (34356)	BETA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (39338)	CHLOR-DANE CIS WATER WHOLE TOTAL (UG/L) (39062)	DELTA BENZENE HEXA-CHLOR-IDE TOTAL (UG/L) (34259)	P,P' DDD, TOTAL (UG/L) (39310)	P,P' DDE, TOTAL (UG/L) (39320)	P,P' DDT, TOTAL (UG/L) (39300)	CHLOR-DANE TRANS WATER WHOLE TOTAL (UG/L) (39065)
OCT										
14...	--	--	--	--	--	--	--	--	--	--
NOV										
08...	--	--	--	--	--	--	--	--	--	--
DEC										
02...	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--
FEB										
25...	--	--	--	--	--	--	--	--	--	--
MAR										
13...	--	--	--	--	--	--	--	--	--	--
APR										
25...	--	--	--	--	--	--	--	--	--	--
MAY										
04...	<.030	106	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
JUN										
05...	--	--	--	--	--	--	--	--	--	--
JUL										
10...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	<.030	126	<.040	<.030	<.100	<.090	<.100	<.040	<.100	<.100
SEP										
07...	--	--	--	--	--	--	--	--	--	--

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

MONTH	YEAR	DISCHARGE (CFS-DAYS)	SPECIFIC CONDUCT-ANCE (MICRO-SIEMENS)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (TONS)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED CHLORIDE (TONS)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED SULFATE (TONS)	HARDNESS (CA,MG) (MG/L)
OCT.	1999	4163	5070	3130	35170	1200	12940	810	9120	960
NOV.	1999	44.6	5080	3140	378	1200	139	810	98.0	970
DEC.	1999	879.09	5320	3290	7810	1200	2910	840	1990	1000
JAN.	2000	2748.99	5480	3400	25200	1300	9450	850	6340	1000
FEB.	2000	15.61	5220	3230	136	1200	50.5	830	34.9	990
MAR.	2000	1563.78	5350	3310	13990	1200	5220	840	3550	1000
APR.	2000	391.98	5290	3270	3460	1200	1290	830	884	1000
MAY	2000	5030.91	5510	3420	46410	1300	17420	860	11640	1000
JUNE	2000	4910.6	5330	3300	43710	1200	16280	840	11120	1000
JULY	2000	7203.24	5280	3270	63530	1200	23610	830	16220	1000
AUG.	2000	8739	5500	3410	80400	1300	30170	860	20180	1000
SEPT	2000	5873	5510	3420	54210	1300	20360	860	13590	1000
TOTAL		41563.8	**	**	374400	**	139800	**	94760	**
WTD.AVG.		114	5390	3340	**	1200	**	840	**	1000

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4950	4930	4940	5090	5000	5040	5200	5120	5170	5280	5210	5260
2	4960	4920	4940	5130	5060	5110	5210	5130	5170	5290	5000	5250
3	4940	4900	4930	5140	5070	5110	5220	5130	5190	5520	4790	5290
4	4950	4920	4940	5140	5030	5090	5230	5120	5190	5550	5510	5530
5	4960	4930	4950	5100	4980	5050	5280	5190	5230	5550	5500	5520
6	4970	4920	4950	5070	4970	5020	5280	5070	5230	5530	5500	5510
7	4990	4970	4980	5060	4940	5020	5250	4760	5110	5530	5500	5520
8	4990	4920	4960	5040	4960	5020	5170	4770	5090	5530	5400	5500
9	4920	4810	4860	5080	4980	5030	5150	4470	4880	5520	5490	5510
10	4860	4790	4830	5070	4970	5020	5100	4750	4950	5520	5490	5510
11	5330	4730	4900	5050	4940	5010	5140	5080	5110	5530	5480	5500
12	5320	5290	5310	5040	4930	5000	5170	5090	5130	5540	5490	5500
13	5320	5270	5300	5010	4830	4930	5280	5100	5180	5530	5480	5500
14	5300	5260	5280	4980	4870	4920	5350	5200	5290	5500	5480	5490
15	5270	5210	5250	5000	4910	4960	5370	5190	5290	5500	5470	5480
16	5240	5200	5220	5190	4970	5050	5380	5300	5350	5500	5460	5480
17	5220	5170	5210	5260	5170	5220	5380	5330	5360	5500	5460	5480
18	5210	5160	5190	5220	5120	5180	5390	5340	5370	5480	5460	5470
19	5190	5150	5180	5200	5100	5170	5400	5310	5360	5480	5440	5460
20	5170	5120	5160	5200	5090	5150	5390	5200	5310	5480	5450	5460
21	5160	5130	5150	5180	5100	5150	5310	5200	5270	5470	5430	5450
22	5140	5110	5120	5170	5080	5130	5330	5210	5280	5460	5430	5450
23	5130	5110	5120	5170	5090	5140	5430	5220	5310	5460	5400	5450
24	5130	5110	5120	5200	5130	5160	5450	5260	5360	5460	5410	5450
25	5140	5120	5130	5190	5110	5160	5330	5200	5280	5480	5430	5460
26	5140	5110	5120	5220	5100	5150	5290	5200	5260	5480	5270	5380
27	5150	5120	5130	5190	5120	5160	5310	5230	5280	5280	5170	5220
28	5150	5130	5140	5210	5110	5160	5320	5230	5290	5240	5170	5210
29	5170	5120	5140	5210	5120	5160	5290	5190	5250	5220	5120	5190
30	5140	5110	5130	5190	5100	5160	5320	5230	5280	5210	5120	5180
31	5120	4950	5050	---	---	---	5290	5180	5260	5220	5150	5190
MONTH	5330	4730	5080	5260	4830	5090	5450	4470	5230	5550	4790	5410

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	5210	5160	5180	5240	5170	5210	5190	4990	5080	---	---	e5340
2	5230	5050	5170	5240	5120	5190	5220	5070	5160	---	---	e5380
3	5240	5100	5190	5270	5130	5210	5280	5110	5220	---	---	e5420
4	5200	5110	5160	5200	5000	5150	5280	5160	5230	---	---	e5490
5	5210	5110	5180	5180	5070	5140	5290	5210	5240	5500	5470	5490
6	5230	5160	5190	5170	4940	5060	5330	5180	5280	5500	5470	5490
7	5200	5100	5160	5100	4610	4960	5390	5240	5300	5500	5480	5480
8	5200	5080	5160	5230	4840	5160	5390	5240	5330	5490	5470	5480
9	5420	5140	5280	5230	5020	5120	5380	5300	5330	5490	5480	5480
10	5370	5120	5230	5150	5040	5100	5360	5260	5310	5490	5460	5470
11	5240	5050	5160	5150	5000	5090	5410	5080	5320	5460	5440	5450
12	5180	5050	5120	5110	5020	5080	5330	5060	5240	5450	5430	5440
13	5260	5010	5160	5160	4990	5090	5340	5220	5300	5450	5410	5430
14	5380	5150	5240	5480	5050	5230	5350	5210	5290	5450	5420	5430
15	5460	5250	5360	5440	5370	5410	5380	4710	5250	5450	5410	5430
16	5350	5280	5320	5410	5380	5400	5370	4710	5170	5450	5420	5430
17	5340	5180	5250	5410	5380	5390	5380	5240	5320	5460	5440	5450
18	5490	5300	5390	5430	5330	5410	5360	5230	5310	5460	5430	5440
19	5370	5170	5300	5450	5390	5420	5380	5220	5320	5490	5440	5470
20	5390	5200	5310	5430	5400	5410	5480	5350	5410	5520	5440	5480
21	5370	5150	5280	5420	5400	5410	5450	5330	5400	5550	5440	5490
22	5290	3830	5080	5450	4990	5400	5450	5360	5410	5670	5470	5570
23	5410	5180	5340	5310	3170	4310	5560	5380	5480	5780	5660	5720
24	5350	5130	5240	4970	4710	4860	5500	5300	5380	5840	5650	5750
25	5310	5040	5210	4980	4710	4880	5410	5290	5350	5820	5680	5750
26	5340	5160	5270	4940	4740	4840	5400	5240	5340	6020	5740	5890
27	5260	5210	5230	4990	4760	4900	5430	5310	5370	5920	5850	5890
28	5230	5150	5200	4950	4730	4870	5330	5260	5290	5870	5670	5800
29	5280	5180	5240	5010	4840	4910	---	---	e5260	5720	5530	5640
30	---	---	---	5080	4910	5030	---	---	e5300	5670	5590	5630
31	---	---	---	5110	4990	5060	---	---	---	5670	5610	5640
MONTH	5490	3830	5230	5480	3170	5120	---	---	5300	---	---	5540

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5700	5630	5660	5250	4030	4830	---	---	e5580	5500	5350	5420
2	5700	5610	5650	5030	4930	4970	---	---	e5420	5520	5370	5440
3	5670	5430	5530	---	---	e5100	---	---	e5430	5450	5340	5380
4	5450	5360	5400	---	---	e5200	---	---	e5440	5470	5320	5380
5	5450	5200	5350	---	---	e5300	5860	5760	5810	5530	5400	5470
6	5220	4990	5140	---	---	e5330	5770	5650	5710	5560	5420	5500
7	5350	5000	5190	---	---	e5340	5660	5560	5610	5640	5450	5540
8	5370	5280	5340	5390	5320	5360	5560	5460	5520	5450	5380	5400
9	5430	5290	5360	5370	5300	5340	5500	5430	5450	5390	5360	5380
10	5390	5100	5240	5390	5280	5340	---	---	e5380	5400	5360	5380
11	5430	5230	5300	---	---	5370	---	---	e5390	5460	5390	5410
12	5460	5380	5410	---	---	5360	5680	5560	5630	5490	5440	5460
13	5440	5200	5330	---	---	5160	5730	5670	5700	5560	5490	5530
14	5290	5160	5220	5290	4030	4860	5750	5690	5740	5630	5540	5560
15	5270	4840	5120	5210	5180	5190	5810	5750	5790	5910	5630	5780
16	5200	5030	5110	5180	5150	5170	---	---	e5440	5960	5800	5910
17	5370	4630	5070	5220	5150	5170	---	---	e5460	5800	5670	5710
18	5250	4810	5060	5180	5140	5160	---	---	e5450	5680	5660	5670
19	4870	4560	4740	5150	5120	5140	5570	5500	5530	5670	5660	5670
20	5140	4610	4930	5190	5100	5130	5500	5460	5480	5660	5640	5650
21	5420	5130	5260	5460	5110	5270	5470	5420	5440	5640	5610	5620
22	5400	5260	5330	5420	5360	5400	5430	5400	5410	---	---	e5440
23	5380	5290	5340	5380	5330	5350	5410	5390	5400	---	---	e5490
24	5350	5240	5310	5420	5050	5300	5420	5290	5380	---	---	e5500
25	5360	5220	5290	5430	5130	5400	5410	5350	5380	---	---	e5490
26	5380	5290	5340	5450	5300	5370	5400	5350	5380	---	---	e5480
27	5350	5280	5310	5530	5350	5400	5400	5370	5390	5890	5840	5860
28	5290	5250	5270	5350	5310	5330	5390	5360	5370	---	---	e5320
29	5260	5230	5240	---	---	e5300	5460	5370	5420	---	---	e5360
30	5250	5230	5240	---	---	e5350	5440	5380	5410	---	---	e5390
31	---	---	---	---	---	e5380	5400	5350	5370	---	---	---
MONTH	5700	4560	5270	---	---	5250	---	---	5490	---	---	5520

e Estimated

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.8	17.4	21.4	20.1	14.8	16.8	16.4	10.8	13.3	16.7	9.7	12.7
2	21.4	20.7	21.0	17.0	11.6	13.8	17.3	13.1	14.7	17.8	11.7	13.8
3	21.2	20.4	20.7	16.9	10.2	13.2	16.9	10.6	13.6	12.6	8.5	10.0
4	20.5	19.3	20.1	18.9	11.8	15.0	14.3	9.0	12.1	8.6	7.9	8.3
5	20.6	19.8	20.1	21.4	13.8	17.1	12.4	6.4	8.8	8.4	7.5	7.9
6	20.7	19.9	20.3	21.9	15.9	18.5	12.7	5.5	8.8	7.9	7.5	7.6
7	20.5	19.5	20.0	21.8	15.8	18.5	14.5	7.4	10.1	7.8	7.3	7.5
8	19.8	19.4	19.6	20.8	15.9	17.7	16.8	10.0	13.1	8.5	7.7	8.0
9	20.4	19.3	19.7	20.5	14.6	17.2	14.9	8.8	11.3	8.2	7.4	7.8
10	20.6	20.3	20.5	22.5	15.5	18.5	13.5	6.3	9.5	8.0	7.2	7.6
11	20.7	20.1	20.4	22.9	16.0	18.8	11.9	8.4	10.1	8.1	7.6	7.8
12	21.0	19.9	20.4	22.1	15.3	18.3	13.5	10.0	11.4	8.5	7.5	7.9
13	21.0	19.9	20.4	22.2	15.8	18.5	11.6	8.2	10.3	8.0	7.4	7.6
14	21.8	19.9	20.7	22.2	15.6	18.5	11.3	10.6	11.0	8.0	7.2	7.6
15	22.1	21.2	21.7	20.7	15.2	17.6	11.0	10.1	10.5	8.8	7.4	8.1
16	21.8	20.1	20.8	20.6	14.1	17.0	10.7	9.8	10.2	8.8	8.1	8.4
17	20.1	19.2	19.5	20.2	14.2	16.8	12.9	9.9	10.4	9.6	8.5	9.1
18	19.4	18.9	19.1	19.9	14.5	16.8	10.3	9.8	10.0	9.1	8.8	8.9
19	19.0	18.3	18.7	18.6	13.6	15.7	10.2	9.6	9.9	9.4	8.6	8.9
20	18.8	17.9	18.4	18.3	11.5	14.3	12.4	9.1	10.3	9.0	8.4	8.7
21	18.6	17.8	18.3	18.6	12.1	14.6	15.4	8.3	10.6	9.1	8.4	8.8
22	18.6	17.8	18.3	17.3	12.8	14.8	15.4	7.7	10.3	9.4	8.8	9.0
23	18.1	17.5	17.7	16.5	11.0	13.2	16.5	7.3	10.8	9.4	8.7	9.0
24	18.0	17.2	17.6	13.2	9.4	11.2	15.4	7.7	10.8	9.3	8.5	8.9
25	17.8	17.0	17.5	15.4	8.5	11.3	16.1	8.1	11.3	9.3	8.7	9.1
26	18.2	17.3	17.6	16.5	8.2	11.7	17.9	10.9	13.2	8.7	6.9	8.2
27	18.1	17.4	17.7	17.3	9.8	12.9	13.4	9.2	11.2	8.0	6.4	7.0
28	18.0	17.1	17.5	17.3	10.9	13.4	16.8	7.4	11.4	8.0	6.0	6.9
29	18.3	17.2	17.7	16.6	10.9	13.0	16.1	9.5	12.3	15.5	6.4	9.0
30	17.6	16.9	17.3	16.7	11.6	13.2	15.9	9.4	12.1	---	---	---
31	16.9	15.8	16.5	---	---	---	20.5	9.0	12.0	13.4	6.8	9.6
MONTH	22.1	15.8	19.3	22.9	8.2	15.6	20.5	5.5	11.1	---	---	---

07312100 WICHITA RIVER NEAR MABELLE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	13.2	9.4	10.8	19.2	12.2	15.6	15.9	12.9	14.0	---	---	---
2	16.5	7.3	10.9	20.9	14.3	17.0	25.2	12.4	17.0	---	---	---
3	16.6	7.2	11.1	15.7	9.5	12.3	18.9	12.4	14.9	---	---	---
4	14.7	8.4	10.7	21.8	9.5	14.1	---	---	---	---	---	---
5	16.3	7.5	10.7	18.5	11.2	14.3	22.6	12.6	17.4	20.8	19.6	20.1
6	---	---	---	22.7	14.1	18.3	29.2	14.5	20.2	21.7	20.2	21.0
7	19.0	9.4	13.2	22.4	16.3	18.6	21.7	15.3	18.6	22.8	20.9	21.8
8	19.8	9.4	13.8	18.3	11.0	14.9	23.3	11.5	16.6	23.1	22.1	22.7
9	18.9	10.3	14.2	22.7	11.6	15.9	23.0	11.4	16.3	22.8	21.9	22.4
10	22.4	12.2	16.3	21.3	11.7	14.9	23.8	14.7	18.6	23.3	21.9	22.6
11	18.1	10.6	13.6	20.8	8.6	13.2	23.8	16.5	19.1	23.8	22.8	23.3
12	16.8	8.2	12.1	20.6	9.3	13.8	16.9	14.7	15.6	23.6	22.7	23.2
13	18.4	11.3	14.2	22.5	10.6	15.6	24.7	13.5	17.5	23.2	22.4	22.7
14	19.3	9.2	13.1	20.5	13.7	15.3	27.2	15.3	20.2	23.1	22.1	22.6
15	22.3	11.1	15.6	15.1	13.5	14.2	24.9	17.1	20.0	23.1	21.7	22.6
16	17.0	11.4	14.3	14.7	13.1	13.7	25.7	14.9	19.2	23.3	22.6	22.9
17	22.9	13.7	17.5	13.1	12.9	13.0	25.6	14.7	19.0	23.0	22.6	22.8
18	19.5	11.6	15.8	13.3	12.7	12.9	30.2	17.7	23.0	22.8	22.3	22.6
19	18.0	8.6	12.5	13.3	12.4	12.9	29.4	20.0	24.2	22.3	22.1	22.2
20	16.5	10.8	13.5	14.1	12.5	13.3	26.9	15.9	20.9	23.3	21.9	22.3
21	21.3	12.7	16.2	13.5	13.1	13.3	26.5	15.1	20.0	23.6	22.2	22.8
22	22.0	16.1	18.1	13.5	13.0	13.2	21.0	15.1	18.3	28.9	19.8	24.0
23	21.5	11.4	16.0	20.7	13.1	15.9	26.5	15.1	20.0	30.2	20.1	24.8
24	23.4	11.4	17.8	23.6	12.9	17.5	28.3	16.0	21.4	31.7	21.4	26.1
25	21.0	16.2	18.3	26.7	13.9	19.1	27.5	17.2	22.0	31.5	23.9	27.4
26	21.5	11.5	15.6	28.8	16.0	21.1	28.6	17.4	22.0	26.4	22.8	24.4
27	21.0	10.4	14.8	26.8	15.2	20.2	24.0	18.1	20.7	24.6	23.8	24.2
28	19.6	11.5	15.1	26.8	14.9	20.0	19.8	18.7	19.2	25.5	24.1	24.9
29	20.7	13.5	16.5	23.2	16.4	19.1	---	---	---	25.7	24.7	25.2
30	---	---	---	22.5	12.9	16.5	---	---	---	25.7	24.8	25.2
31	---	---	---	17.9	12.9	15.1	---	---	---	25.6	24.6	25.1
MONTH	---	---	---	28.8	8.6	15.6	---	---	---	---	---	---

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	25.7	24.3	25.0	25.8	25.2	25.5	---	---	---	32.5	25.5	28.2
2	25.2	24.7	24.9	25.9	24.6	25.2	---	---	---	28.9	27.3	28.0
3	25.1	24.6	24.9	---	---	---	---	---	---	28.6	27.1	27.8
4	25.1	24.6	24.8	---	---	---	---	---	---	28.4	27.3	27.8
5	24.9	24.4	24.7	---	---	---	28.1	27.0	27.6	28.4	27.0	27.9
6	25.6	24.4	24.9	---	---	---	28.2	27.2	27.7	27.7	26.9	27.2
7	25.9	24.6	25.2	---	---	---	28.4	26.9	27.6	27.9	25.3	26.9
8	25.9	24.6	25.3	27.9	26.6	27.3	28.7	26.9	27.7	27.6	26.3	26.9
9	25.6	25.0	25.3	28.3	26.9	27.6	28.7	26.8	27.7	27.7	26.1	26.8
10	26.0	25.0	25.4	28.8	27.3	27.9	---	---	---	27.6	26.4	27.0
11	26.8	25.4	25.9	28.6	27.5	28.0	---	---	---	27.3	26.3	26.7
12	27.1	25.9	26.5	29.3	23.7	26.6	27.9	27.1	27.5	27.1	26.1	26.5
13	27.2	26.1	26.7	33.0	23.5	27.1	28.0	27.0	27.4	27.0	25.9	26.4
14	26.6	26.4	26.5	34.9	24.6	28.4	---	---	---	---	---	---
15	29.3	26.4	27.3	28.4	27.9	28.1	---	---	---	---	---	---
16	29.6	25.4	27.3	29.4	28.3	28.7	---	---	---	26.6	25.4	25.9
17	27.7	24.4	26.4	31.7	26.0	28.3	---	---	---	---	---	---
18	24.4	23.3	23.9	29.0	26.8	27.7	---	---	---	---	---	---
19	26.2	23.9	24.9	28.7	27.7	28.1	28.5	27.6	28.0	---	---	---
20	26.9	25.4	26.1	33.0	25.7	28.9	28.1	27.1	27.6	---	---	---
21	---	---	---	31.3	26.3	28.0	28.1	26.9	27.5	---	---	---
22	---	---	---	27.7	26.8	27.2	27.9	26.8	27.3	---	---	---
23	---	---	---	27.4	26.8	27.1	28.6	26.6	27.4	---	---	---
24	---	---	---	31.9	25.6	27.8	32.3	26.5	28.0	---	---	---
25	---	---	---	---	---	---	28.6	27.5	28.0	---	---	---
26	---	---	---	31.8	22.6	27.5	29.0	27.0	27.9	---	---	---
27	---	---	---	27.1	23.7	26.2	28.6	27.1	27.8	21.7	20.7	21.2
28	---	---	---	28.2	26.2	26.9	28.1	26.8	27.4	---	---	---
29	26.2	25.8	25.9	---	---	---	28.5	26.8	27.5	---	---	---
30	25.8	25.5	25.7	---	---	---	28.4	26.7	27.5	---	---	---
31	---	---	---	---	---	---	28.0	26.8	27.3	---	---	---
MONTH	---	---	---	---	---	---	---	---	---	---	---	---

07312110 SOUTH SIDE CANAL NEAR DUNDEE, TX

LOCATION.--Lat 33°48′50", long 98°55′57", Archer County, Hydrologic Unit 11130206, on left bank, 125 ft downstream from Lake Diversion headgates, and 5.3 mi northwest of Dundee.

DRAINAGE AREA.--2,194 mi^2 (for Lake Diversion on Wichita River, provided by Wichita County Water Improvement District No. 2).

PERIOD OF RECORD.--Oct 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,039.70 ft above sea level (Wichita County Water Improvement District benchmark). Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Records of discharge are of water released from Lake Diversion into a canal system for mining, industrial, recreation, and irrigation use. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	126	32	2.7	1.9	1.9	1.9	3.4	25	101	43	140	152
2	125	7.3	2.7	1.9	1.9	1.9	3.4	26	112	3.0	145	153
3	124	7.0	2.7	12	1.9	1.9	3.4	40	111	3.1	163	154
4	124	6.7	2.4	22	1.9	2.3	3.4	49	85	34	164	154
5	122	6.1	2.3	47	1.9	2.3	3.4	45	85	76	164	156
6	124	5.8	2.3	60	1.9	2.3	3.2	41	87	94	166	156
7	125	5.5	2.3	33	1.9	2.3	2.9	40	87	93	166	158
8	124	5.3	2.3	33	1.9	2.3	2.4	45	96	94	167	159
9	105	5.0	2.3	32	1.9	2.3	1.8	57	110	93	173	160
10	86	4.8	2.3	45	1.9	2.3	1.5	73	113	104	178	162
11	86	4.4	2.3	56	1.9	2.3	1.3	82	129	125	177	170
12	87	3.8	2.2	55	1.9	2.3	.99	82	131	150	176	177
13	85	3.4	2.0	56	1.9	2.6	.83	84	130	151	178	176
14	85	3.1	1.9	56	2.0	15	.69	85	115	151	177	169
15	85	2.9	1.9	56	2.0	45	.67	e87	105	158	177	164
16	84	2.8	1.9	52	2.0	49	.74	e97	97	162	174	163
17	84	2.8	1.9	41	2.0	38	.73	99	87	164	173	164
18	82	2.8	1.9	55	1.9	26	.67	98	54	164	174	163
19	81	2.7	1.9	65	1.9	26	.69	100	53	167	173	163
20	81	2.7	1.9	65	1.9	39	.67	102	53	171	174	155
21	80	2.7	1.9	e64	1.9	62	.74	103	54	172	175	148
22	81	2.7	1.9	e53	1.9	71	.74	104	53	172	172	146
23	80	2.7	1.9	e47	1.9	33	.60	105	53	174	168	145
24	80	2.7	1.8	e19	1.9	2.7	.64	112	75	176	168	146
25	84	2.7	1.9	e1.5	1.9	2.7	.68	120	78	177	150	144
26	96	2.7	1.9	1.6	1.9	2.7	.73	110	88	176	142	140
27	103	2.7	1.9	1.9	1.9	2.7	.78	94	110	173	148	135
28	107	2.7	1.9	1.9	1.9	2.7	.75	94	102	159	149	135
29	107	2.7	1.9	1.9	1.9	2.9	.94	95	83	138	149	133
30	105	2.7	1.9	1.9	---	3.0	15	95	71	140	150	133
31	79	---	1.9	1.9	---	3.0	---	97	---	142	152	---
TOTAL	3027	143.9	64.9	1040.4	55.5	455.4	58.38	2486	2708	3999.1	5102	4633
MEAN	97.6	4.80	2.09	33.6	1.91	14.7	1.95	80.2	90.3	129	165	154
MAX	126	32	2.7	65	2.0	71	15	120	131	177	178	177
MIN	79	2.7	1.8	1.5	1.9	1.9	.60	25	53	3.0	140	133
AC-FT	6000	285	129	2060	110	903	116	4930	5370	7930	10120	9190

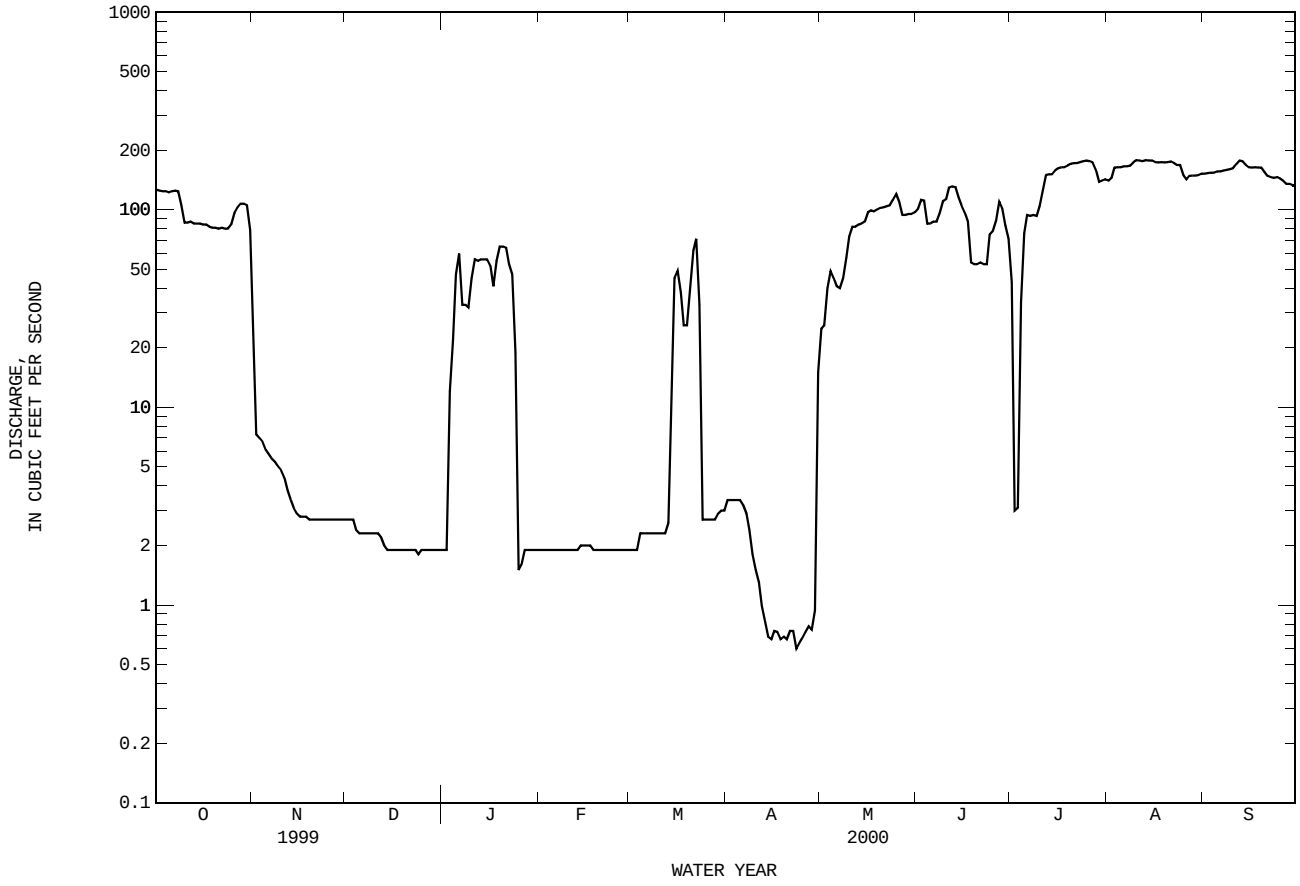
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2000, BY WATER YEAR (WY)

MEAN	76.7	10.8	14.0	20.2	11.5	27.3	61.3	80.5	126	200	183	121
MAX	141	41.0	76.3	66.1	52.2	127	150	218	240	344	282	219
(WY)	1978	1978	1978	1989	1975	1996	1972	1984	1984	1974	1980	1983
MIN	3.10	.000	.000	.000	.000	.000	1.94	17.6	20.1	124	50.8	3.39
(WY)	1977	1985	1985	1985	1985	1985	1999	1982	1982	1992	1989	1996

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1972 - 2000	
ANNUAL TOTAL	25175.16		23773.58			
ANNUAL MEAN	69.0		65.0		78.2	
HIGHEST ANNUAL MEAN					120	1984
LOWEST ANNUAL MEAN					46.6	1989
HIGHEST DAILY MEAN	241	Aug 26	178	Aug 10	374	Jul 22 1974
LOWEST DAILY MEAN	.04	Jan 20	.60	Apr 23	.00	Oct 20 1973
ANNUAL SEVEN-DAY MINIMUM	.10	Jan 17	.68	Apr 18	.00	Oct 20 1973
INSTANTANEOUS PEAK FLOW			184	Aug 14	374	Jul 22 1974
INSTANTANEOUS PEAK STAGE			6.74	Aug 14	8.31	Jul 22 1974
ANNUAL RUNOFF (AC-FT)	49930		47150		56620	
10 PERCENT EXCEEDS	180		164		201	
50 PERCENT EXCEEDS	51		53		54	
90 PERCENT EXCEEDS	1.6		1.9		.25	

e Estimated

07312110 SOUTH SIDE CANAL NEAR DUNDEE, TX--Continued



07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX

LOCATION.--Lat 33°52′09", long 98°50′20", Wichita County, Hydrologic Unit 11130206, near center of stream at upstream side of bridge on State Highway 25, 1 mile north of intersection with State Highway 258 at Kadane Corner, and 4.1 miles upstream from the confluence with Beaver Creek.

DRAINAGE AREA.--2,182 mi^2, of which 2,086 mi^2 is above Lake Kemp.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1996 to current year.

GAGE.--Water-stage recorder. Datum of gage is 923.00 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good, except those for estimated daily discharges which are fair. Since installation of gage in Jun 1996, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 07312000, conservation pool storage 319,600 acre-ft) 43 mi upstream. Since completion of Lake Kemp in 1923, no outflow has passed over the spillway. Water is diverted from Lake Diversion (conservation pool storage 40,000 acre-ft) 13 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 47,150 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	5.7	16	6.1	3.6	4.0	4.2	6.2	3.2	6.2	4.4	6.2	7.2
2	5.7	8.8	6.3	4.0	4.6	5.1	5.6	2.9	6.3	3.2	6.6	5.1
3	5.6	6.5	5.4	4.2	4.6	e5.1	4.7	3.1	8.1	2.1	6.8	4.5
4	6.7	6.5	5.7	3.8	4.1	e5.0	4.0	2.5	7.0	1.5	5.9	6.0
5	11	5.9	5.5	3.7	4.0	e4.7	6.3	27	5.8	1.4	4.9	6.6
6	10	5.4	5.6	3.3	4.4	e4.4	7.1	24	4.8	1.3	3.9	9.4
7	8.7	5.2	5.1	3.4	4.0	8.3	4.2	5.0	8.0	1.2	e4.4	8.1
8	7.2	5.2	5.7	4.6	3.6	8.1	3.1	2.4	11	1.2	e4.7	7.3
9	11	6.8	9.1	4.2	3.5	6.1	3.1	1.5	7.0	1.1	e4.9	8.5
10	8.9	6.4	6.8	3.6	3.9	5.7	2.9	1.4	5.2	1.1	6.1	7.3
11	6.6	7.4	5.9	3.3	4.5	5.2	3.4	1.4	e3.4	1.1	5.6	6.9
12	5.7	7.3	5.5	3.2	3.7	4.5	19	1.3	e3.1	1.2	5.2	8.2
13	7.9	6.2	5.6	3.1	3.7	4.1	7.0	1.1	1.9	1.1	6.3	11
14	8.1	6.2	5.4	3.4	3.6	4.1	4.8	1.1	1.5	1.6	6.9	10
15	10	6.2	5.7	3.5	3.5	4.0	4.9	1.6	1.3	1.2	4.9	9.2
16	6.9	7.5	5.3	3.2	3.9	3.9	9.2	3.1	1.2	1.2	5.8	9.9
17	5.4	8.9	5.5	3.1	5.3	4.4	6.3	3.8	14	1.2	8.6	8.9
18	6.4	7.9	5.3	3.9	5.2	4.3	4.3	4.1	9.7	1.6	9.6	8.2
19	7.3	6.2	5.3	5.2	4.0	4.4	3.7	3.0	6.5	2.4	7.6	8.7
20	8.7	5.7	5.4	5.2	4.2	4.1	3.1	2.9	4.4	3.5	8.9	8.7
21	8.8	5.2	5.4	7.8	4.3	3.8	2.8	1.4	2.8	2.3	9.9	7.4
22	8.0	5.2	5.4	9.2	6.0	4.3	2.3	1.2	2.3	1.8	7.6	7.3
23	7.2	7.7	5.1	10	7.6	198	2.3	3.4	1.6	2.2	10	6.3
24	6.7	6.3	4.8	10	6.4	82	2.2	5.4	1.3	3.2	11	6.0
25	7.0	5.3	4.8	11	6.5	21	2.2	7.3	1.2	2.4	12	5.8
26	6.1	4.8	4.7	6.8	5.5	9.8	2.0	7.2	1.2	2.0	9.0	4.8
27	6.3	4.6	4.4	5.4	4.8	6.6	2.5	4.2	1.3	3.0	7.7	5.4
28	6.3	4.5	3.9	5.3	4.6	6.0	2.8	2.0	1.8	4.1	9.0	8.2
29	6.5	4.3	3.7	4.5	4.4	7.6	2.7	3.0	2.1	4.2	12	7.8
30	11	5.1	3.5	4.0	---	11	3.1	6.3	1.9	4.0	14	7.4
31	23	---	3.2	4.0	---	8.2	---	6.7	---	5.0	10	---
TOTAL	250.4	195.2	165.1	153.5	132.4	458.0	137.8	144.5	133.9	68.8	236.0	226.1
MEAN	8.08	6.51	5.33	4.95	4.57	14.8	4.59	4.66	4.46	2.22	7.61	7.54
MAX	23	16	9.1	11	7.6	198	19	27	14	5.0	14	11
MIN	5.4	4.3	3.2	3.1	3.5	3.8	2.0	1.1	1.2	1.1	3.9	4.5
AC-FT	497	387	327	304	263	908	273	287	266	136	468	448

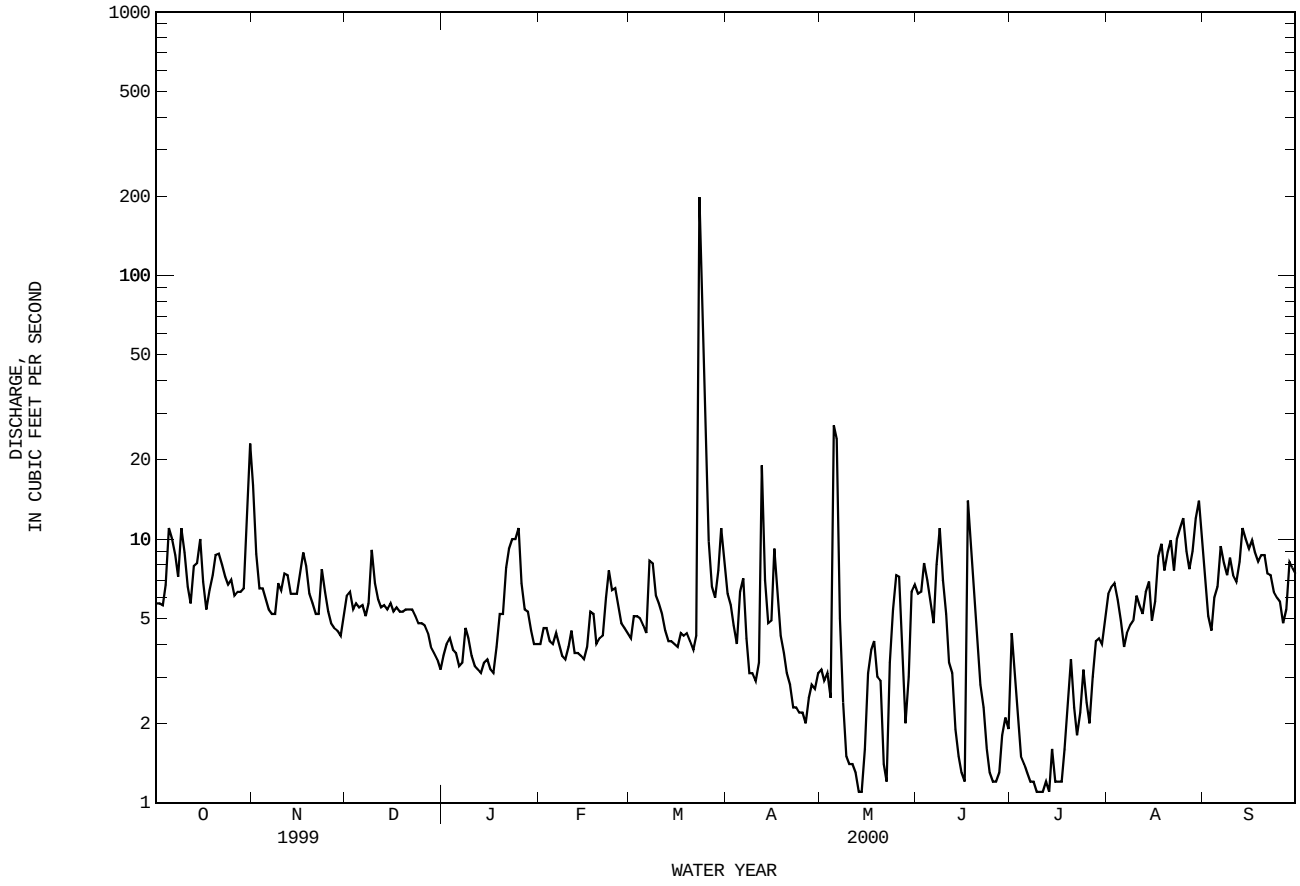
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2000, BY WATER YEAR (WY)

MEAN	9.57	8.55	6.24	5.77	50.3	80.6	82.7	155	17.8	9.50	11.2	14.8
MAX	11.2	13.3	7.70	7.60	182	265	304	598	41.5	14.2	15.3	36.9
(WY)	1997	1997	1998	1998	1998	1998	1998	1997	1997	1997	1996	1996
MIN	8.08	6.51	4.66	4.47	4.06	4.49	4.59	4.66	4.46	2.22	7.61	6.21
(WY)	2000	2000	1999	1997	1999	1997	2000	2000	2000	2000	2000	1999

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1996 - 2000	
ANNUAL TOTAL	3701.1		2301.7			
ANNUAL MEAN	10.1		6.29		37.2	
HIGHEST ANNUAL MEAN					69.6	1998
LOWEST ANNUAL MEAN					6.29	2000
HIGHEST DAILY MEAN	501	Mar 19	198	Mar 23	1960	May 21 1997
LOWEST DAILY MEAN	2.0	May 19	1.1	May 13	1.1	May 13 2000
ANNUAL SEVEN-DAY MINIMUM	2.4	May 14	1.1	Jul 7	1.1	Jul 7 2000
INSTANTANEOUS PEAK FLOW			243	Mar 23	1510	Mar 17 1998
INSTANTANEOUS PEAK STAGE			6.55	Mar 23	12.04	Mar 17 1998
ANNUAL RUNOFF (AC-FT)	7340		4570		26940	
10 PERCENT EXCEEDS	12		9.1		24	
50 PERCENT EXCEEDS	6.4		5.2		7.6	
90 PERCENT EXCEEDS	3.5		2.0		3.7	

e Estimated

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued



07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Chemical data: Jun 1996 to Sep 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Jun 1996 to current year.
WATER TEMPERATURE: Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Jun 1996 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum, 9,350 microsiemens, Mar 31, 1997; minimum, 176 microsiemens, Mar 23, 2000.
WATER TEMPERATURE: Maximum, 37.2°C, Aug 9, 1999; minimum, 0.0°C, Jan 11-14, 1997, Dec 22, 25, 1999.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 8,690 microsiemens, May 12; minimum, 176 microsiemens, Mar 23.
WATER TEMPERATURE: Maximum, 35.3°C, Jul 15; minimum, 2.3°C, Jan 29.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6630	6320	6490	5090	4410	4780	---	---	e6090	6630	6410	6540
2	6800	6590	6680	4840	4310	4500	---	---	e5960	6640	6430	6570
3	7030	6790	6910	5630	4840	5260	---	---	e5920	6670	2430	4910
4	7040	6030	6870	6100	5630	5850	---	---	e6050	6540	2760	5210
5	6540	5640	6250	6620	6070	6330	---	---	e5830	6690	6370	6570
6	6170	5910	6040	6740	6480	6600	---	---	e4800	6810	6600	6700
7	6620	6120	6340	6700	6540	6610	---	---	e5800	6830	6670	6760
8	6790	6010	6610	6750	6610	6680	---	---	e5980	6740	6510	6620
9	6420	1270	5290	6620	6170	6440	---	---	e4500	6600	6370	6510
10	6480	5980	6290	6170	6080	6150	---	---	e5200	6640	6470	6520
11	6320	5420	5880	6080	5850	5950	5820	5530	5700	6750	6620	6660
12	6520	5230	5990	5900	5780	5850	5920	5820	5860	6840	6710	6770
13	6540	6270	6400	6030	5800	5930	5900	5780	5820	6940	6820	6890
14	6470	6350	6410	6070	6020	6050	---	---	e5790	6940	6800	6870
15	6460	6270	6370	6090	6020	6070	5810	5680	5740	6900	6790	6840
16	6870	6370	6570	6020	5710	5910	5990	5690	5860	6890	6780	6820
17	7260	6870	7120	5710	5520	5600	6000	5830	5930	6990	6890	6930
18	7290	6930	7150	5640	5540	5600	6000	5830	5900	7110	6990	7050
19	6930	6460	6730	5920	5640	5770	6160	5900	6050	7300	6790	7020
20	6460	6230	6330	---	---	e5930	6170	6040	6130	8220	7010	7610
21	6320	6140	6250	---	---	e6030	6200	6130	6170	8130	7190	7620
22	6730	6290	6540	---	---	e6080	6250	6160	6200	7200	6730	6930
23	6810	6350	6560	---	---	e5940	6280	6170	6220	7070	6590	6820
24	6880	6440	6650	---	---	e5600	6380	6250	6300	6690	6400	6570
25	6910	6460	6620	---	---	e5880	6390	6320	6360	6670	6390	6510
26	7030	6910	6970	---	---	e5910	6380	6270	6330	6950	6570	6790
27	7520	7010	7240	---	---	e6060	6420	4660	6190	7030	6740	6900
28	7710	7380	7550	---	---	e6190	6420	6070	6350	7120	7030	7100
29	8320	7020	7940	---	---	e6350	6520	6280	6420	7110	7030	7070
30	---	---	e5680	---	---	e6250	6500	4920	6190	7210	7100	7160
31	---	---	e4120	---	---	---	6570	6100	6370	7270	7190	7230
MONTH	---	---	6480	---	---	5940	---	---	5940	8220	2430	6740

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7260	7200	7220	7020	6840	6950	3230	2670	2950	7280	5940	6640
2	7220	7160	7190	7040	6300	6820	3720	3230	3490	7520	6990	7360
3	7160	7060	7110	6870	6240	6700	6640	3720	4830	7440	6990	7180
4	7110	7020	7070	6930	6810	6860	7170	6620	6970	7090	6900	7000
5	7190	7110	7150	6920	6820	6880	7290	6160	6840	7100	1080	5270
6	7260	7170	7210	6950	6880	6910	6420	6050	6240	5610	2420	3100
7	7230	7180	7200	6920	6000	6750	6900	6100	6520	6490	3850	5510
8	7260	7200	7230	6230	4540	5820	7360	6900	7200	7360	6490	7020
9	7310	7240	7270	6920	5860	6570	7590	7360	7500	8200	7360	7810
10	7310	7250	7280	7230	6920	7060	---	---	e7580	7860	7480	7630
11	7250	7090	7180	7160	6870	7010	---	---	e7590	7660	7200	7450
12	7100	7030	7070	7020	6890	6950	7010	850	2620	8690	7240	7960
13	7110	4600	6220	7150	7020	7090	6690	3500	5490	8620	8270	8400
14	7210	6280	6830	7190	7080	7150	7250	6690	6910	8370	8200	8290
15	7300	6900	7150	7200	7070	7130	7280	5390	6810	8440	8200	8280
16	7490	7060	7370	7380	7030	7220	6700	2130	4980	8280	7250	7840
17	7480	7240	7390	7280	7190	7230	6750	4370	6080	7260	6830	7110
18	7320	4890	6530	7220	6880	7110	7000	6660	6880	7100	6230	6590
19	7210	7030	7130	7200	6940	7120	6730	6000	6330	6480	6260	6400
20	7250	7090	7170	7060	6970	7020	7120	6360	6870	6730	6450	6540
21	7300	7140	7210	7160	7010	7070	7320	7120	7250	7200	6730	7070
22	7440	5520	6830	7220	5150	7120	7690	7270	7490	7270	7100	7170
23	5730	3760	5010	6460	176	1460	7950	7590	7860	7370	6840	7220
24	6730	4950	6110	1400	806	1030	7920	7780	7840	6840	6210	6470
25	6830	5100	6440	2240	997	1610	7830	7530	7680	6490	6110	6330
26	6700	5300	6440	3700	2240	2970	7680	7460	7600	6490	4160	5840
27	6640	6460	6540	4900	3700	4300	8040	7470	7680	6620	6070	6410
28	6640	6520	6590	5320	3700	4810	7470	6780	7140	6890	6620	6790
29	6930	6270	6740	3780	2680	3320	6780	6310	6640	6990	6790	6920
30	---	---	---	3220	2570	3080	6800	6280	6610	6850	6060	6510
31	---	---	---	2670	2370	2510	---	---	---	6130	6010	6050
MONTH	7490	3760	6890	7380	176	5730	---	---	6480	8690	1080	6840

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	6280	6130	6220	6610	1440	5950	6890	6640	6780	6710	6460	6550
2	6200	6040	6100	5880	1350	4720	6680	6570	6640	6830	6580	6710
3	6300	2750	5620	6350	5600	6190	6760	6590	6670	6980	6650	6800
4	5820	1580	4340	6440	6220	6340	6930	6750	6800	6870	6450	6590
5	5810	4740	5550	6520	6400	6480	6980	6860	6920	6810	6500	6610
6	6040	5740	5920	6580	6500	6540	7050	6980	7020	6520	6330	6400
7	6280	5830	6000	6770	6570	6710	7210	7020	7090	6440	6310	6370
8	6240	6000	6120	6840	6770	6810	7330	7120	7230	6490	6240	6360
9	6570	6080	6360	6970	6840	6890	7290	6880	7150	6560	6180	6340
10	7070	6570	6940	7110	6920	7010	7010	6770	6870	6490	6240	6350
11	7210	7000	7140	7090	6900	6990	7110	6880	7000	6500	6100	6310
12	7520	7210	7370	6970	6790	6880	7050	6860	6970	6750	4620	6280
13	7530	7400	7470	6920	6750	6820	7090	6860	6970	6460	6330	6410
14	7760	7530	7680	6880	6670	6780	6950	6720	6810	6500	6380	6440
15	7750	7660	7710	6790	6640	6730	7180	6950	7060	6590	6490	6520
16	8040	7730	7930	7020	6780	6900	7120	6880	7010	6960	6540	6610
17	8180	560	4990	7010	6820	6950	7110	6750	6950	7000	6790	6890
18	5230	789	2810	6820	6370	6650	7350	6850	7040	6900	6740	6810
19	5420	3750	5190	6580	6350	6460	7270	7080	7160	6920	6790	6850
20	4220	2250	3210	6580	6330	6480	7310	7030	7190	7270	6770	6940
21	5560	4030	4960	6620	6450	6540	7140	6990	7070	7120	6940	7030
22	6060	5560	5960	6720	6560	6640	7100	6970	7020	6990	6790	6920
23	6250	6000	6130	6690	6460	6610	7110	6940	7030	7000	6810	6920
24	6540	6250	6460	6650	6450	6560	7110	6600	6830	---	---	e6850
25	7050	6540	6880	6670	6550	6620	6600	6360	6450	---	---	e6890
26	7460	7050	7350	6760	6630	6690	6520	6380	6430	---	---	e6930
27	7510	3560	6950	6940	6680	6830	6600	6430	6520	---	---	e6970
28	7140	6800	7010	6920	6780	6840	6700	6540	6610	---	---	e7010
29	6820	6640	6740	7010	6770	6840	6560	6460	6510	---	---	e7050
30	6710	6610	6660	7120	6790	6940	6530	6380	6440	---	---	e7090
31	---	---	---	7220	6870	7080	6600	6420	6490	---	---	---
MONTH	8180	560	6190	7220	1350	6630	7350	6360	6860	---	---	6690

e Estimated

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	24.8	15.4	19.5	18.4	13.7	15.6	---	---	---	11.1	7.4	9.1
2	25.4	17.3	20.4	16.4	11.6	13.3	14.8	12.6	13.8	13.2	9.8	11.4
3	24.7	16.6	19.8	16.6	8.9	12.4	14.3	11.9	13.2	11.9	8.2	10.5
4	17.8	14.6	15.7	18.0	10.2	13.7	---	---	---	8.2	4.8	6.7
5	21.4	14.1	17.3	21.0	12.7	16.3	---	---	---	7.3	3.9	5.4
6	24.9	17.2	20.5	22.1	15.7	18.4	---	---	---	7.9	4.8	6.0
7	24.4	17.0	20.2	20.9	16.2	18.5	---	---	---	7.4	5.6	6.4
8	26.5	18.9	21.4	19.7	16.4	17.7	---	---	---	11.0	7.0	9.0
9	25.5	18.1	21.6	19.2	15.2	17.2	---	---	---	11.3	8.3	9.6
10	26.7	19.0	22.5	20.4	15.5	18.1	---	---	---	10.7	7.3	8.7
11	27.8	19.2	22.9	20.1	15.6	18.2	9.2	7.3	8.2	11.0	7.8	9.0
12	27.9	19.4	23.0	19.7	15.2	17.8	10.9	9.1	9.7	11.8	8.0	9.5
13	26.9	19.4	22.7	19.6	15.6	18.0	9.2	6.9	8.1	11.4	8.5	9.8
14	26.5	19.2	22.5	19.6	15.6	17.9	9.1	6.6	7.6	10.1	7.1	8.4
15	26.5	20.2	22.8	19.0	15.6	17.3	7.3	4.7	5.9	12.3	7.5	9.9
16	23.3	17.9	21.2	18.2	14.0	16.3	6.6	4.0	5.4	15.0	11.0	12.7
17	17.9	13.5	14.8	17.6	14.0	16.2	8.2	5.3	6.8	16.4	12.4	13.9
18	15.9	13.2	14.4	18.5	14.6	16.7	8.1	6.6	7.2	13.4	11.0	12.7
19	19.1	11.4	14.7	---	---	---	7.6	5.6	6.6	12.3	9.0	10.7
20	19.5	11.3	15.0	---	---	---	6.9	5.0	5.9	11.5	8.3	9.4
21	20.7	12.4	16.1	---	---	---	6.5	4.0	5.1	9.1	6.0	7.7
22	21.3	13.5	16.8	---	---	---	6.5	3.6	5.0	11.1	8.3	9.7
23	20.3	13.3	16.3	14.6	12.1	13.2	7.3	3.9	5.5	10.9	8.6	9.8
24	19.6	12.0	15.3	---	---	---	8.4	5.1	6.6	10.0	6.4	7.1
25	21.2	12.4	16.1	---	---	---	7.9	5.2	6.6	7.0	5.2	6.1
26	22.0	13.4	17.0	---	---	---	10.4	7.1	8.5	6.9	4.5	5.6
27	20.5	14.2	16.9	---	---	---	9.9	7.2	8.3	4.5	3.4	3.7
28	22.4	16.0	18.6	---	---	---	9.6	6.1	7.7	3.5	3.0	3.2
29	23.8	16.9	19.7	---	---	---	10.1	7.0	8.5	6.2	2.3	4.0
30	---	---	---	---	---	---	11.2	8.2	9.3	7.0	3.7	5.3
31	---	---	---	---	---	---	10.6	7.6	8.8	8.4	4.6	6.1
MONTH	---	---	---	---	---	---	---	---	---	16.4	2.3	8.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	9.9	6.7	8.0	17.5	13.6	15.3	17.1	13.4	14.9	---	---	---
2	9.9	6.6	8.0	18.8	14.3	16.2	18.4	12.6	15.3	19.8	18.0	18.8
3	11.4	7.3	9.1	16.4	10.2	12.9	18.3	14.1	15.9	23.3	17.5	20.1
4	11.0	8.0	9.3	14.5	8.6	11.4	18.4	11.0	14.9	26.1	20.9	23.0
5	10.7	6.8	8.5	16.3	11.9	13.8	22.1	14.8	18.5	24.2	17.8	22.3
6	10.5	7.2	8.8	19.3	14.0	16.6	24.4	17.5	20.9	29.5	21.6	25.0
7	12.7	8.5	10.2	20.1	17.9	18.9	24.0	19.4	21.7	30.7	23.3	26.6
8	14.0	9.4	11.4	18.6	14.9	16.7	20.4	14.5	17.8	29.9	24.2	26.7
9	15.2	11.0	12.6	18.1	13.8	15.9	20.3	14.5	17.4	28.5	22.9	25.4
10	16.8	12.9	14.4	17.4	12.9	15.2	---	---	---	29.4	21.8	24.9
11	14.7	11.0	13.2	14.5	10.3	12.3	---	---	---	31.5	23.9	27.0
12	12.5	9.1	10.8	16.0	10.5	12.9	18.1	12.2	14.0	29.9	24.3	26.8
13	14.3	10.4	12.0	17.3	12.1	14.4	19.9	13.4	16.2	26.7	20.6	23.4
14	13.8	10.3	11.5	18.8	15.0	16.5	23.2	16.1	19.5	27.0	18.8	22.3
15	15.4	10.6	12.7	20.6	15.2	17.6	22.0	18.1	20.1	27.7	19.6	23.2
16	14.9	12.5	13.4	17.8	11.0	14.7	21.4	15.5	18.4	27.4	23.2	25.1
17	17.2	12.8	15.0	11.0	8.5	9.4	21.5	16.9	19.0	25.7	22.9	24.2
18	17.4	13.1	15.7	11.9	8.2	9.7	26.8	18.5	22.5	27.2	22.1	24.1
19	13.6	10.2	11.9	14.7	9.6	12.0	27.2	22.0	24.7	22.4	18.3	20.0
20	13.6	10.6	12.0	17.7	11.7	14.5	24.6	19.6	22.2	27.9	16.9	21.6
21	16.1	11.8	13.7	15.8	14.2	15.0	24.2	18.2	21.2	30.6	21.7	25.3
22	17.9	14.9	16.2	14.8	13.6	14.1	21.4	18.7	20.1	30.8	23.4	26.5
23	16.4	10.1	14.4	18.2	13.5	15.8	23.7	17.1	20.0	29.4	23.5	26.4
24	18.4	14.1	16.5	20.3	14.8	17.5	24.7	19.1	21.4	31.0	24.4	27.6
25	19.1	16.6	17.8	22.4	15.8	19.1	26.1	21.1	23.0	31.0	26.1	28.4
26	17.5	14.0	15.5	24.8	18.0	21.3	26.7	21.1	23.4	29.5	24.5	27.6
27	16.7	11.8	14.1	23.6	18.1	21.0	23.9	20.6	22.6	31.2	25.2	27.6
28	17.2	12.4	14.7	23.7	18.0	21.0	25.0	18.7	21.7	32.0	24.6	28.1
29	18.1	13.7	15.7	21.8	18.1	20.5	25.4	20.5	22.5	31.3	25.7	28.5
30	---	---	---	20.8	15.1	17.9	23.2	21.0	22.1	31.8	25.5	28.6
31	---	---	---	18.2	15.1	16.6	---	---	---	31.4	25.8	28.4
MONTH	19.1	6.6	12.7	24.8	8.2	15.7	---	---	---	---	---	---

07312130 WICHITA RIVER AT STATE HIGHWAY 25 NEAR KAMAY, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	30.9	24.8	27.8	27.7	24.7	26.2	32.1	25.3	28.8	31.9	25.9	28.8
2	28.2	25.4	26.3	31.8	24.9	27.8	33.0	25.5	29.4	32.5	26.1	29.2
3	26.6	23.8	25.3	32.0	26.3	28.8	32.3	26.5	29.4	32.2	26.6	29.4
4	28.4	24.4	26.1	32.9	26.1	29.1	33.3	26.8	29.9	32.9	26.4	29.5
5	29.6	24.1	26.7	32.8	26.3	29.1	32.5	26.4	29.4	32.0	26.8	29.4
6	29.1	22.8	26.0	33.8	26.7	29.7	33.1	26.7	29.9	30.8	26.0	28.3
7	30.1	22.7	26.1	33.8	27.0	29.9	32.9	26.5	29.6	30.8	24.5	27.6
8	30.1	22.5	26.1	34.2	27.4	30.1	33.6	26.5	29.8	30.5	24.6	27.4
9	27.9	24.3	25.9	33.4	26.8	29.6	32.3	26.6	29.4	31.0	24.5	27.5
10	28.2	24.2	25.8	34.2	26.1	29.6	32.9	26.9	29.7	31.3	25.1	28.0
11	28.3	24.3	26.1	34.6	26.7	30.1	33.2	26.2	29.7	30.9	25.3	27.8
12	29.5	24.4	26.9	34.2	27.2	30.0	33.4	27.2	30.3	30.8	24.9	27.7
13	30.6	24.3	27.3	34.6	27.8	30.5	33.0	27.5	30.1	30.0	25.0	27.6
14	27.4	24.4	25.7	35.0	28.6	31.3	31.1	24.7	27.9	31.7	25.2	28.3
15	30.9	22.4	26.4	35.3	29.0	32.0	32.0	25.0	28.4	29.5	24.6	27.0
16	31.0	25.7	27.8	34.3	29.4	31.3	32.5	26.0	29.2	28.0	22.3	25.2
17	27.4	20.1	23.0	31.8	27.0	29.0	32.7	26.6	29.6	27.4	21.6	24.5
18	22.9	20.3	21.5	33.0	26.1	29.3	32.8	26.5	29.7	26.4	19.8	23.2
19	26.1	22.2	23.7	33.8	27.5	30.6	32.0	27.1	29.4	25.6	20.0	22.9
20	29.9	24.0	26.5	34.1	28.3	31.1	31.1	24.0	27.5	25.9	21.0	23.2
21	29.6	25.2	27.3	33.0	26.9	30.2	31.7	24.9	28.1	26.3	19.9	23.0
22	30.4	24.7	27.6	31.2	26.4	28.9	31.6	25.5	28.3	29.2	23.0	25.9
23	30.6	25.4	28.0	31.7	25.9	28.8	32.1	25.6	28.6	27.0	23.9	25.5
24	32.9	25.5	28.9	32.2	26.1	29.1	32.7	26.0	29.2	23.9	17.6	20.4
25	33.7	26.5	29.5	29.5	25.3	27.7	33.1	26.6	29.8	19.9	14.2	17.2
26	29.0	26.4	27.4	31.7	24.8	28.2	33.1	26.7	29.8	21.9	14.8	18.4
27	30.4	24.2	27.3	30.5	26.8	28.7	32.1	26.2	29.1	23.0	16.1	19.7
28	28.0	25.7	26.6	31.6	25.5	28.5	31.8	25.3	28.6	23.8	17.2	20.7
29	26.0	24.2	25.2	31.6	26.9	29.2	31.8	25.8	28.8	24.0	18.0	21.1
30	29.5	23.7	26.2	31.0	25.9	28.5	31.7	26.0	28.7	23.7	18.4	21.2
31	---	---	---	31.4	25.0	28.2	31.0	25.9	28.4	---	---	---
MONTH	33.7	20.1	26.4	35.3	24.7	29.4	33.6	24.0	29.2	32.9	14.2	25.2

07312180 LAKE ELECTRA NEAR ELECTRA, TX

LOCATION.--Lat 33°58'30", long 99°01'24", Wilbarger County, Hydrologic Unit 11130207, on northern bank near left end of dam on Camp Creek, 8.0 mi west of Electra.

DRAINAGE AREA.--14.5 mi^2.

PERIOD OF RECORD.--Oct 1998 to current year.

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

REMARKS.--Records fair. The lake is formed by a rolled earthfill dam. The dam was completed in 1950, and storage began shortly thereafter. The lake is owned by the city of Electra, which uses the water for their municipal supply. Conservation pool storage is 8,055 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,121.00
Top of conservation pool	1,114.15
Lowest gated outlet (invert)	1,110.00

COOPERATION.--Capacity curve and diversions for municipal use are provided by the city of Electra. The capacity curve, dated Jul 31, 1998, is entitled "Original Lake Electra Area Capacity Elevation Table" and was developed by Don Rauschuber and Associates Inc..

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,140 acre-ft, Oct 1, elevation, 1,100.47 ft; minimum contents, 355 acre-ft, Aug 30, elevation, 1,095.02 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

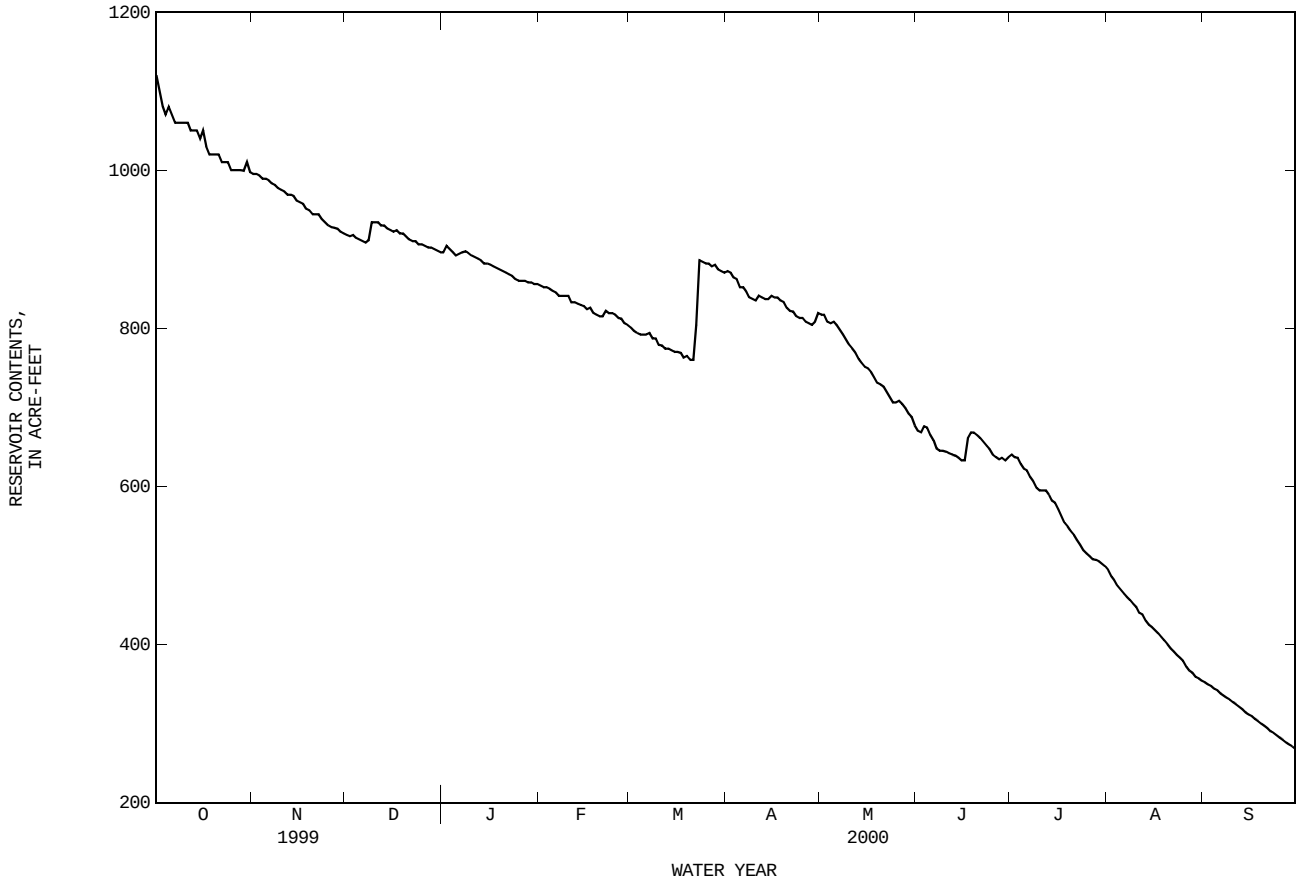
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1120	995	918	896	854	801	872	817	670	640	494	e352
2	1100	995	916	904	852	797	870	817	668	637	486	e349
3	1080	993	918	900	852	794	864	808	676	636	481	e347
4	1070	989	914	896	850	792	862	806	674	628	474	e344
5	1080	989	912	892	847	792	852	808	665	622	469	e342
6	1070	987	910	894	845	792	852	804	658	620	464	e338
7	1060	983	908	896	841	794	846	798	648	612	460	e335
8	1060	981	911	897	841	787	839	792	645	606	456	e332
9	1060	977	934	895	841	787	837	785	645	598	451	e330
10	1060	975	934	e892	841	779	835	779	644	595	447	e327
11	1060	973	934	e890	833	778	841	774	642	595	440	e324
12	1050	969	930	e888	833	774	839	769	640	595	438	e321
13	1050	969	930	e886	831	774	837	761	639	589	430	e318
14	1050	967	926	e882	829	772	837	756	636	582	425	e314
15	1040	961	924	e882	828	770	841	751	633	579	422	e311
16	1050	959	922	e880	824	770	839	749	633	571	418	e309
17	1030	957	924	e878	826	769	839	744	661	562	414	e306
18	1020	951	920	e876	819	763	835	738	668	554	409	e303
19	1020	949	920	e874	817	765	833	731	668	549	405	e300
20	1020	944	916	e872	815	760	826	729	665	543	400	e297
21	1020	944	912	e870	815	760	822	726	661	538	395	e294
22	1010	944	910	e868	822	804	821	720	656	532	391	e290
23	1010	938	910	e866	819	886	815	713	651	526	387	e288
24	1010	934	906	e862	819	884	813	706	647	519	383	e285
25	1000	930	906	e860	817	882	813	706	640	515	379	e282
26	1000	928	904	e860	813	882	808	708	637	512	372	e279
27	1000	927	902	e860	812	878	806	704	634	508	367	e276
28	1000	926	902	e858	806	880	804	699	636	507	364	e273
29	999	922	900	e858	804	874	808	692	633	505	359	e271
30	1010	920	898	e856	---	872	819	688	637	502	e357	e268
31	997	---	896	e856	---	870	---	677	---	499	e354	---
MAX	1120	995	934	904	854	886	872	817	676	640	494	352
MIN	997	920	896	856	804	760	804	677	633	499	354	268
(+)	1099.81	1099.42	1099.30	1099.10	1098.82	1099.17	1098.90	1098.11	1097.87	1096.99	1095.85	1095.02
(@)	-143	-77	-24	-40	-52	+66	-51	-142	-40	-138	-145	-86
(++)	23.9	21.8	20.9	19.6	14.1	14.0	8.5	12.6	23.6	19.8	20.9	19.7

CAL YR 1999 MAX 1880 MIN 896 (@) -854 (++) 311
WTR YR 2000 MAX 1140 MIN 268 (@) -872 (++) 219

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the city of Electra.

07312180 LAKE ELECTRA NEAR ELECTRA, TX--Continued



07312200 BEAVER CREEK NEAR ELECTRA, TX

LOCATION.--Lat 33°54′21", long 98°54′17", Wichita County, Hydrologic Unit 11130207, near right bank at downstream side of bridge on Farm Road 2326, 6.5 mi northwest of Kamay, 8 mi upstream from Wichita River, and 9 mi south of Electra.

DRAINAGE AREA.--652 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder. Datum of gage is 991.3 ft above sea level (Texas Department of Transportation reference point). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Feb 1960, at least 10% of contributing drainage area has been regulated by Santa Rosa Lake (conservation pool storage 11,500 acre-ft) about 20.7 miles upstream. There are several diversions above station. No flow at times.

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

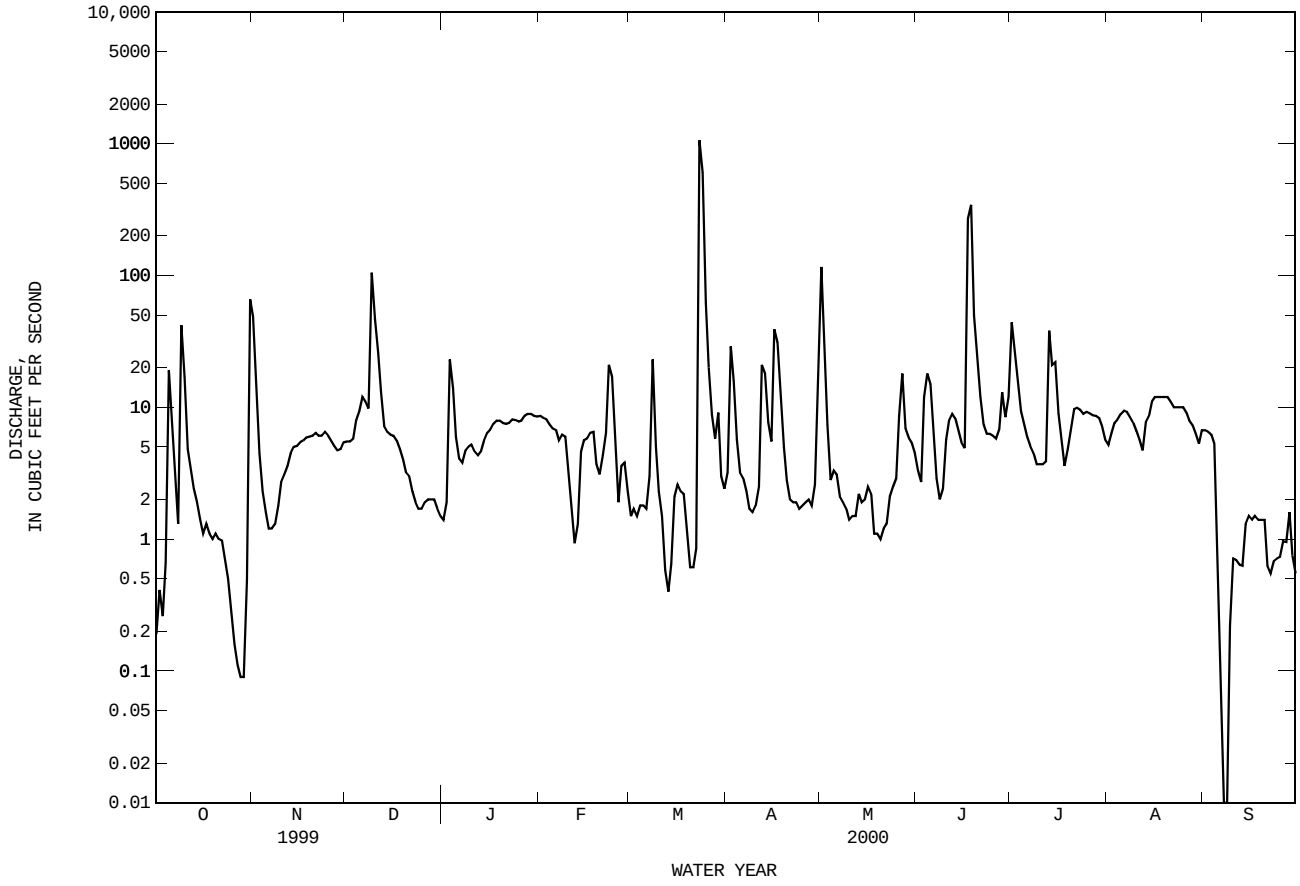
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.19	49	5.5	1.4	8.6	1.5	3.2	116	3.3	44	5.2	6.7
2	.41	14	5.5	1.9	8.3	1.7	29	31	2.7	28	6.4	6.5
3	.26	4.5	5.8	23	8.1	1.5	16	7.3	12	16	7.6	6.2
4	.66	2.3	7.9	14	7.4	1.8	5.7	2.8	18	9.3	8.1	5.3
5	19	1.6	9.3	6.0	6.9	1.8	3.2	3.3	15	7.3	8.9	.56
6	8.4	1.2	12	4.1	6.7	1.7	2.9	3.1	6.1	6.0	9.4	.05
7	3.4	1.2	11	3.8	5.6	3.0	2.3	2.1	2.9	5.1	9.2	.00
8	1.3	1.3	9.8	4.7	6.2	23	1.7	1.9	2.0	4.5	8.4	.00
9	42	1.8	105	5.0	6.0	5.0	1.6	1.7	2.4	3.7	7.6	.22
10	17	2.7	47	5.2	3.1	2.3	1.8	1.4	5.7	3.7	6.6	.71
11	4.8	3.1	26	4.6	1.8	1.5	2.5	1.5	7.9	3.7	5.7	.69
12	3.4	3.6	13	4.3	.93	.58	21	1.5	8.9	3.9	4.7	.64
13	2.4	4.5	7.2	4.6	1.3	.40	18	2.2	8.2	38	7.7	.63
14	1.9	5.0	6.5	5.6	4.6	.65	7.7	1.9	6.6	21	8.6	1.3
15	1.4	5.1	6.2	6.4	5.6	2.1	5.5	2.0	5.4	22	11	1.5
16	1.1	5.4	6.1	6.8	5.8	2.6	39	2.5	4.9	9.0	12	1.4
17	1.3	5.6	5.6	7.5	6.4	2.3	31	2.2	270	5.7	12	1.5
18	1.1	5.9	4.8	7.9	6.5	2.2	12	1.1	343	3.6	12	1.4
19	1.0	6.0	4.0	7.9	3.7	1.1	5.0	1.1	50	4.8	12	1.4
20	1.1	6.1	3.2	7.6	3.1	.61	2.8	1.0	24	6.8	12	1.4
21	1.0	6.4	3.0	7.5	4.3	.61	2.0	1.2	12	9.7	11	.63
22	.97	6.1	2.3	7.6	6.4	.85	1.9	1.3	7.4	9.9	10	.55
23	.68	6.1	1.9	8.1	21	1060	1.9	2.1	6.3	9.6	10	.68
24	.50	6.5	1.7	8.0	17	605	1.7	2.5	6.3	8.9	10	.71
25	.27	6.1	1.7	7.8	6.7	62	1.8	2.9	6.1	9.2	10	.73
26	.16	5.6	1.9	7.9	1.9	20	1.9	8.6	5.8	9.0	9.1	.96
27	.11	5.1	2.0	8.6	3.6	8.8	2.0	18	6.8	8.7	7.9	.95
28	.09	4.7	2.0	8.9	3.8	5.8	1.8	6.9	13	8.6	7.3	1.6
29	.09	4.8	2.0	8.9	2.3	9.1	2.6	5.9	8.4	8.3	6.3	.75
30	.49	5.4	1.7	8.6	---	3.0	23	5.4	12	7.2	5.3	.55
31	66	---	1.5	8.5	---	2.4	---	4.5	---	5.7	6.7	---
TOTAL	182.48	186.7	323.1	222.7	173.63	1834.90	252.5	246.9	883.1	340.9	268.7	46.21
MEAN	5.89	6.22	10.4	7.18	5.99	59.2	8.42	7.96	29.4	11.0	8.67	1.54
MAX	66	49	105	23	21	1060	39	116	343	44	12	6.7
MIN	.09	1.2	1.5	1.4	.93	.40	1.6	1.0	2.0	3.6	4.7	.00
AC-FT	362	370	641	442	344	3640	501	490	1750	676	533	92

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

MEAN	108	36.1	28.4	21.2	53.6	81.6	60.0	139	143	58.6	68.2	105
MAX	1108	319	385	185	553	592	760	921	1435	727	1324	1108
(WY)	1987	1973	1992	1985	1993	1961	1990	1987	1995	1975	1995	1986
MIN	.14	.82	.71	.27	.84	.65	.89	2.26	3.37	1.84	.87	1.06
(WY)	1964	1966	1971	1966	1963	1965	1982	1996	1966	1964	1998	1998

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000	
ANNUAL TOTAL	6557.35		4961.82			
ANNUAL MEAN	18.0		13.6		75.9	
HIGHEST ANNUAL MEAN					300	1995
LOWEST ANNUAL MEAN					11.4	1983
HIGHEST DAILY MEAN	607	Jan 30	1060	Mar 23	11000	May 29 1987
LOWEST DAILY MEAN	.00	Aug 13	.00	Sep 7	.00	Jun 23 1960
ANNUAL SEVEN-DAY MINIMUM	.01	Aug 17	.24	Oct 24	.00	May 11 1962
INSTANTANEOUS PEAK FLOW			1620	Mar 23	11700	Mar 17 1961
INSTANTANEOUS PEAK STAGE			22.37	Mar 23	34.94	May 29 1987
ANNUAL RUNOFF (AC-FT)	13010		9840		55020	
10 PERCENT EXCEEDS	24		16		108	
50 PERCENT EXCEEDS	3.4		5.1		5.6	
90 PERCENT EXCEEDS	.10		.96		.69	

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued



07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1968 to Jun 1970, Jun 1996 to Sep 1997.
SEDIMENT DATA: Apr 1966 to Sep 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1968 to Jun 1970 (local observer), Jun 1996 to current year.
WATER TEMPERATURE: Oct 1968 to Jun 1970 (local observer), Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Jun 1996 to current year.

REMARKS.--Records good. Interruption in the record was caused by malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum recorded, 29,600 microsiemens, Apr 19, 1970; minimum recorded, 192 microsiemens, Aug 24, 1999.
WATER TEMPERATURE: Maximum recorded, 37.3°C, Aug 10, 1999; minimum recorded, 0.0°C, on several days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,110 microsiemens, Sep 10; minimum, 320 microsiemens, Mar 24.
WATER TEMPERATURE: Maximum, 36.3°C, Jul 9; minimum, 1.4°C, Jan 30.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	2190	2100	2170	1560	1510	1540	1480	1380	1480	1110	1090	1100
2	2160	2130	2140	1760	1560	1660	1490	1480	1490	1130	1110	1120
3	2190	2160	2180	1790	1760	1790	1520	1490	1510	2040	1050	1500
4	2220	2190	2210	1790	1760	1770	1550	1490	1520	1920	1330	1460
5	2270	2130	2200	1770	1720	1740	3200	1520	2350	1380	1230	1310
6	2130	2070	2100	1730	1700	1710	3200	1890	2450	1240	1200	1220
7	2150	2090	2130	1700	1670	1690	1890	1690	1760	1200	1040	1120
8	2090	2010	2040	1680	1650	1660	1720	1680	1690	1040	978	1010
9	2050	1950	2010	1670	1640	1660	1810	973	1470	1100	1040	1080
10	2040	1940	1990	1650	1620	1630	1240	1030	1110	1090	1000	1040
11	1940	1760	1860	1620	1600	1610	1260	1070	1190	1000	951	974
12	1760	1620	1670	1600	1580	1590	1070	1020	1040	1060	951	985
13	1630	1610	1620	1600	1590	1590	1030	990	1020	1210	1060	1130
14	1640	1620	1630	1630	1600	1620	1000	967	984	1400	1210	1310
15	1640	1610	1620	1650	1620	1640	967	944	960	1600	1400	1490
16	1620	1580	1600	1660	1630	1640	954	942	946	1920	1600	1760
17	1580	1550	1570	1630	1600	1620	952	939	948	2330	1920	2100
18	1560	1540	1550	1600	1560	1580	969	939	951	2660	2330	2500
19	1550	1510	1540	1570	1550	1560	988	968	973	3120	2660	2850
20	1560	1500	1520	1570	1550	1560	1010	988	999	3670	3120	3400
21	1520	1500	1510	1570	1550	1560	1020	1010	1010	4010	3670	3880
22	1520	1500	1510	1560	1550	1560	1060	1010	1020	4130	4000	4070
23	1530	1500	1510	1560	1540	1550	1050	1030	1040	4220	4130	4180
24	1560	1480	1520	1550	1520	1540	1060	1040	1050	4260	4220	4250
25	1540	1510	1530	1550	1520	1530	1080	1050	1060	4250	4190	4220
26	1570	1530	1540	1520	1490	1500	1090	1070	1080	4190	4120	4150
27	1580	1540	1570	1500	1460	1480	1100	1080	1090	4120	3990	4050
28	1600	1580	1590	1480	1460	1470	1100	1090	1100	3990	3850	3920
29	1620	1600	1610	1480	1460	1470	1120	1100	1110	3850	3640	3730
30	1650	1620	1630	1480	1470	1470	1120	1100	1110	3660	3510	3570
31	1650	1460	1510	---	---	---	1110	1100	1100	3530	3440	3500
MONTH	2270	1460	1750	1790	1460	1600	3200	939	1250	4260	951	2390

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	3460	3400	3430	3570	3500	3530	780	740	758	2320	928	1660
2	3420	3360	3390	3630	3570	3590	970	730	813	1020	808	910
3	3360	3270	3310	3710	3630	3670	1510	970	1200	1250	938	1090
4	3270	3200	3230	3730	3700	3710	1890	1510	1710	1420	1250	1360
5	3220	3130	3170	3720	3660	3700	1970	1880	1930	1420	1290	1350
6	3160	3090	3120	3660	3600	3630	2030	1930	1990	1320	1190	1270
7	3090	3030	3060	3600	3520	3560	2160	2030	2110	1190	1050	1130
8	3060	3000	3040	3530	3260	3360	2230	2160	2180	---	---	e1050
9	3030	2970	3010	3430	3420	3430	2190	2100	2150	---	---	e1100
10	3010	2970	3000	3440	3380	3410	2120	1990	2060	---	---	e1120
11	3020	2960	3010	3390	3350	3370	2000	1850	1940	---	---	e1150
12	3040	2990	3030	3370	3330	3350	2690	1360	1900	1120	1110	1110
13	3060	2910	3010	3350	3320	3340	1900	1750	1790	1130	1090	1110
14	3080	3010	3040	3330	3290	3310	1950	1800	1900	1110	1090	1100
15	3040	2980	3010	3290	3170	3230	1970	1790	1920	1140	1110	1120
16	3020	2980	3000	3170	3050	3110	2230	1180	1780	1180	1140	1160
17	3000	2970	2990	3060	2940	2990	2130	1350	1690	1190	1180	1180
18	3010	2970	2990	2940	2880	2910	2180	1870	2050	1190	1160	1180
19	3030	2980	3010	2960	2880	2910	1870	1710	1780	1190	1160	1170
20	3030	2990	3010	3070	2960	3010	1810	1700	1750	1190	1160	1180
21	3020	2970	3000	3120	3070	3090	1900	1810	1850	1190	1170	1180
22	3020	2920	3000	3080	2550	3020	1940	1890	1930	1260	1190	1210
23	3750	2960	3290	2580	390	791	1950	1900	1930	1330	1260	1280
24	3310	3030	3100	410	320	352	1930	1890	1920	1480	1330	1410
25	3060	2990	3020	580	400	511	1970	1910	1930	1670	1480	1570
26	3300	3060	3160	610	580	595	2050	1970	2010	2130	1670	1880
27	3370	3300	3340	630	610	615	2180	2050	2110	2990	2130	2510
28	3460	3360	3420	680	620	642	2300	2180	2230	2790	2560	2680
29	3500	3450	3480	1590	660	960	2610	2160	2290	2940	2790	2870
30	---	---	---	960	720	752	2660	1240	2350	3140	2940	3030
31	---	---	---	750	730	739	---	---	---	3220	3140	3190
MONTH	3750	2910	3130	3730	320	2550	2690	730	1870	---	---	1490

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	3270	3190	3230	950	712	854	2380	1580	1780	6690	6570	6620
2	3250	3200	3230	1210	942	1090	2610	2380	2500	6620	6440	6540
3	3200	928	2410	1190	912	1020	2410	2360	2390	6540	6380	6470
4	4190	1580	2630	976	927	947	2370	2320	2340	6520	6350	6440
5	2940	1770	2520	1060	976	1020	2360	2270	2310	6530	6420	6470
6	2980	2780	2930	1120	1060	1090	2620	2360	2490	6670	6520	6590
7	2980	2910	2950	1170	1120	1150	2910	2620	2750	6770	6620	6700
8	2980	2930	2950	1220	1170	1200	3400	2910	3150	6930	6690	6800
9	3030	2980	3000	1280	1220	1250	3920	3400	3680	7010	6770	6900
10	3190	3010	3090	1320	1280	1300	4210	3920	4090	7110	6780	6960
11	3390	3190	3330	1360	1320	1330	4500	4210	4330	6860	6630	6760
12	3360	3110	3290	1420	1360	1390	4840	4500	4660	6720	6590	6670
13	3110	2550	2780	1510	1030	1280	4890	3770	4220	6690	6600	6650
14	2550	2380	2450	1030	647	843	3780	3710	3750	6650	6480	6580
15	2380	2320	2340	1560	706	1210	3840	3770	3800	6590	6520	6560
16	2330	2310	2320	1790	1560	1690	3940	3830	3860	6660	6570	6630
17	2310	748	1640	2030	1790	1910	4030	3820	3950	6800	6640	6720
18	1010	718	847	2220	2030	2140	3820	3450	3640	6880	6680	6790
19	718	510	585	2480	2220	2340	3520	3260	3390	6740	6540	6660
20	511	463	479	2690	2480	2590	3290	3060	3160	6590	6490	6550
21	543	481	521	2790	2690	2750	3560	3140	3290	6590	6500	6550
22	551	534	541	2820	2760	2790	4410	3560	4040	6540	6430	6500
23	543	528	534	2760	2440	2610	5080	4410	4860	6560	6470	6510
24	558	538	551	2440	2070	2250	5550	5080	5400	6620	6560	6600
25	567	557	564	2070	1930	1970	5830	5550	5740	6660	6580	6630
26	577	557	567	1930	1900	1920	6000	5830	5920	6720	6620	6680
27	627	567	576	1910	1870	1900	6140	6000	6080	6700	6600	6660
28	597	359	442	1890	1640	1830	6090	5700	5870	6690	6600	6660
29	573	479	508	1860	1520	1680	6110	5810	5930	6670	6550	6610
30	712	573	630	1860	1700	1800	6440	6090	6310	6600	6490	6550
31	---	---	---	1700	1620	1650	6680	6430	6590	---	---	---
MONTH	4190	359	1810	2820	647	1640	6680	1580	4070	7110	6350	6630

e Estimated

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	23.8	16.9	19.8	16.6	14.3	15.3	11.6	8.6	10.1	8.0	4.9	6.2
2	23.8	18.1	20.6	15.6	12.5	13.9	14.3	11.1	12.4	9.5	7.3	8.3
3	21.9	17.3	19.5	13.2	9.9	11.8	13.4	10.6	11.8	9.1	7.1	8.1
4	19.5	15.5	16.8	13.8	10.3	12.3	12.4	10.3	11.6	7.1	4.4	5.5
5	18.3	12.9	15.6	16.4	12.1	14.2	10.3	6.1	8.3	5.3	3.3	4.4
6	21.7	16.5	18.9	18.3	15.0	16.4	6.8	3.8	5.3	5.5	3.1	4.4
7	22.2	18.0	20.2	18.5	15.8	17.1	8.1	5.7	7.0	6.1	3.5	4.8
8	23.7	19.7	21.2	18.4	15.5	16.9	11.0	7.5	9.0	9.1	6.1	7.5
9	21.8	18.3	20.2	18.0	15.0	16.6	11.3	8.6	10.3	8.1	5.8	7.2
10	23.6	19.5	21.4	18.4	15.4	16.8	8.6	6.7	7.5	7.1	4.3	6.1
11	23.1	19.1	21.4	18.2	15.3	16.7	7.9	6.4	7.2	7.4	4.8	6.3
12	23.6	19.3	21.5	17.4	14.6	16.0	8.9	7.4	8.2	8.3	5.0	6.7
13	24.2	19.8	21.7	17.7	14.7	16.1	7.4	4.8	6.0	7.9	6.1	7.0
14	24.5	19.7	21.8	17.4	14.8	16.1	7.0	5.0	6.0	6.7	4.3	5.6
15	25.5	20.4	22.5	16.7	14.6	15.6	5.6	3.5	4.4	9.7	5.7	7.5
16	23.4	20.6	22.0	15.9	13.0	14.5	4.8	2.7	3.7	11.5	8.9	10.1
17	20.6	15.4	17.1	15.9	13.3	14.5	6.9	4.1	5.3	12.4	9.5	10.9
18	15.7	14.1	15.0	17.1	14.1	15.5	6.6	5.2	5.8	11.7	9.2	10.3
19	16.1	11.9	14.0	16.3	13.2	15.0	6.5	4.1	5.2	10.1	7.0	8.6
20	16.1	11.0	13.6	13.2	10.7	12.1	5.8	3.9	4.7	9.5	6.7	7.8
21	17.3	11.8	14.4	13.6	11.1	12.1	4.4	2.6	3.4	8.1	5.2	6.8
22	17.8	12.8	15.1	14.4	11.4	12.8	3.4	1.8	2.7	9.8	7.7	8.6
23	17.0	13.2	15.0	13.5	10.6	12.1	3.2	1.8	2.6	9.4	7.1	8.3
24	16.0	12.0	14.0	10.6	8.1	9.1	4.0	2.1	3.2	8.1	5.2	6.4
25	17.5	12.4	14.7	8.7	6.5	7.6	4.7	2.7	3.7	7.2	5.2	6.1
26	18.3	13.3	15.6	8.7	5.8	7.3	6.9	4.7	5.7	6.2	4.3	5.4
27	17.8	14.0	15.7	9.8	6.9	8.3	5.8	4.4	5.3	4.3	3.2	3.6
28	20.1	15.6	17.5	10.2	7.5	8.9	6.3	3.7	5.1	3.2	2.5	2.8
29	21.0	17.0	18.8	10.0	8.1	9.0	6.3	4.4	5.4	4.5	1.6	2.9
30	19.3	14.8	16.9	10.3	8.3	9.3	7.9	5.4	6.5	4.5	1.4	3.2
31	14.8	12.3	13.7	---	---	---	6.7	5.1	5.8	5.6	2.7	4.3
MONTH	25.5	11.0	17.9	18.5	5.8	13.3	14.3	1.8	6.4	12.4	1.4	6.5

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	7.7	4.9	6.2	16.1	11.8	14.0	16.5	13.8	14.9	20.8	17.8	19.2
2	7.3	4.2	5.7	18.0	13.3	15.0	17.5	13.4	15.1	18.8	17.5	18.1
3	8.7	4.8	6.6	15.0	10.2	12.1	16.7	14.3	15.3	23.2	17.1	19.7
4	7.9	5.2	6.5	14.4	7.6	10.7	18.9	11.1	15.0	24.6	18.7	21.5
5	7.9	4.3	5.8	14.9	9.8	12.3	21.8	14.4	18.0	24.5	20.1	22.1
6	8.7	5.0	6.6	18.6	12.3	15.3	24.1	16.5	20.1	29.9	21.4	25.3
7	10.4	6.3	7.9	18.8	16.0	17.2	24.4	18.5	21.0	31.8	23.5	27.2
8	11.0	6.6	8.5	17.1	12.8	15.0	21.7	14.9	18.0	---	---	---
9	12.4	7.9	9.9	17.3	12.5	15.0	21.6	13.8	17.3	---	---	---
10	14.3	9.8	11.7	17.4	13.0	14.8	22.6	16.4	19.1	---	---	---
11	12.1	9.1	10.6	15.9	9.8	12.5	22.0	17.9	20.0	---	---	---
12	10.0	6.2	8.3	17.2	9.3	12.9	17.9	13.5	15.2	31.0	25.8	28.0
13	11.9	8.4	10.0	18.5	11.0	14.5	19.7	14.6	16.6	27.4	20.7	23.9
14	11.2	7.0	8.8	19.5	14.1	16.6	22.6	15.2	18.7	27.5	19.0	22.8
15	13.3	8.1	10.3	21.6	14.8	17.8	21.5	17.7	19.5	29.8	20.0	24.3
16	13.1	10.4	11.6	18.7	10.9	15.0	20.2	15.0	17.6	29.2	23.5	26.0
17	16.0	11.3	13.3	10.9	9.1	9.9	20.1	16.8	18.3	28.4	23.8	25.7
18	15.4	11.3	13.8	12.9	8.3	10.2	26.0	17.7	21.3	29.2	23.0	25.6
19	12.0	8.4	10.2	17.0	8.8	12.4	26.3	20.7	23.6	24.4	19.0	20.7
20	12.4	8.3	10.2	19.2	10.5	14.6	25.0	19.2	22.2	28.1	17.2	22.0
21	15.6	10.2	12.6	16.0	14.2	15.0	24.2	17.6	20.8	31.8	21.7	26.0
22	16.0	13.7	14.4	15.0	13.2	14.0	21.0	17.7	19.5	33.4	24.1	28.2
23	15.3	10.9	13.3	15.4	13.4	14.4	24.4	16.9	20.1	34.1	24.8	29.0
24	17.6	12.5	14.9	17.5	14.8	16.0	26.1	18.1	21.6	35.7	26.0	30.2
25	17.5	14.8	16.2	19.5	16.1	17.7	26.3	19.6	22.5	33.7	27.7	30.2
26	16.1	11.8	13.9	23.8	17.2	20.1	26.8	19.4	22.6	30.4	25.6	27.3
27	15.0	9.8	12.8	23.3	17.8	20.6	23.4	20.7	22.1	31.4	24.6	27.7
28	15.7	11.3	13.6	23.1	16.9	20.3	25.7	17.4	21.1	32.7	24.5	28.5
29	17.0	12.6	14.6	21.5	18.3	19.8	25.0	19.2	21.8	33.5	24.7	29.0
30	---	---	---	20.6	15.4	17.7	22.8	17.5	21.4	33.1	26.5	29.8
31	---	---	---	17.9	14.9	16.3	---	---	---	34.1	26.5	29.8
MONTH	17.6	4.2	10.6	23.8	7.6	15.2	26.8	11.1	19.3	---	---	---

07312200 BEAVER CREEK NEAR ELECTRA, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	33.9	26.1	29.5	27.0	24.4	25.8	32.6	26.0	29.0	32.8	27.0	29.6
2	28.9	26.0	27.3	31.0	24.9	27.3	33.4	25.5	29.2	32.9	27.0	29.7
3	26.0	24.0	24.8	31.9	26.6	28.7	33.3	26.8	29.8	33.3	27.5	30.1
4	28.0	23.8	25.5	33.8	26.2	29.7	33.8	28.2	30.8	33.1	27.2	29.9
5	29.6	23.6	26.3	34.0	26.9	30.2	34.0	28.0	30.8	33.1	26.6	29.7
6	30.5	22.2	26.1	34.9	27.4	30.7	34.6	27.8	30.9	32.0	25.1	28.3
7	32.4	23.1	27.4	35.3	27.7	31.0	35.0	28.4	31.4	30.8	23.0	27.0
8	32.5	22.9	27.5	35.2	27.9	31.1	35.0	28.4	31.4	31.1	22.9	26.6
9	29.8	25.4	27.3	36.3	27.6	31.5	34.6	28.2	31.2	33.0	22.7	27.4
10	28.3	24.9	26.3	35.9	28.0	31.7	34.2	28.5	31.2	33.1	26.7	29.3
11	28.2	24.7	26.3	36.0	28.4	32.0	33.9	28.1	30.8	32.6	27.2	29.2
12	30.3	24.6	27.2	33.9	28.6	31.2	33.7	28.4	30.8	32.5	27.1	29.0
13	32.9	25.4	28.7	31.2	27.2	29.3	34.0	27.8	30.7	31.3	26.1	28.4
14	29.2	25.3	26.6	34.3	26.9	29.8	32.8	26.6	29.5	32.0	25.3	28.2
15	32.5	22.3	26.8	35.4	29.0	31.7	33.3	26.3	29.6	29.0	24.2	26.6
16	31.3	26.6	28.7	34.4	28.6	31.5	34.1	28.0	30.8	27.8	21.5	24.6
17	28.4	17.8	22.5	34.7	28.4	31.3	33.5	28.0	30.4	27.6	21.2	24.2
18	21.2	20.0	20.6	35.6	27.7	31.4	33.0	26.2	29.4	27.1	19.7	23.3
19	24.0	21.0	22.1	36.2	28.5	32.0	33.6	28.0	30.5	27.1	20.4	23.5
20	27.9	23.2	25.2	36.2	29.1	32.5	32.9	26.3	29.4	26.3	21.7	23.8
21	28.9	25.0	26.9	35.2	28.2	31.4	33.7	26.9	29.9	26.7	19.7	22.9
22	31.6	24.8	27.9	32.4	27.5	29.7	33.1	27.2	29.9	29.9	23.0	25.9
23	32.2	26.4	29.2	33.2	26.6	29.4	33.2	27.3	30.1	27.2	24.0	25.8
24	34.6	27.3	30.5	34.0	26.6	29.9	33.5	27.2	30.0	24.0	17.6	20.6
25	35.0	27.7	30.9	30.8	26.7	28.9	33.3	27.4	30.2	20.1	14.4	17.0
26	31.1	27.4	29.0	34.3	26.1	29.6	33.4	28.2	30.7	20.5	13.5	16.9
27	29.7	26.3	27.7	32.2	27.9	30.1	33.7	28.5	30.9	21.7	14.6	17.9
28	27.8	24.7	25.7	33.3	26.8	29.6	33.3	28.2	30.6	22.0	15.3	18.5
29	25.9	24.4	25.2	31.8	27.6	29.4	33.1	27.9	30.3	22.4	15.9	18.9
30	29.1	23.8	26.1	30.8	25.6	28.4	33.8	27.7	30.3	22.6	16.6	19.5
31	---	---	---	31.7	25.2	28.4	32.9	27.3	29.9	---	---	---
MONTH	35.0	17.8	26.7	36.3	24.4	30.2	35.0	25.5	30.3	33.3	13.5	25.1

07312380 NORTH FORK BUFFALO CREEK RESERVOIR NEAR IOWA PARK, TX

LOCATION.--Lat 33°59'12", long 98°45'06", Wichita County, Hydrologic Unit 11130206, on south bank near right end of dam on North Fork Buffalo Creek, 5.0 mi northwest of Iowa park.

DRAINAGE AREA.--33 mi^2.

PERIOD OF RECORD.--Aug 1998 to current year.

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

REMARKS.--Records fair. The lake is formed by a rolled earthfill dam 4,452 feet long. The dam was completed in Nov 1964 and storage began shortly thereafter. The lake is owned by the city of Iowa Park, which uses the water for their municipal supply. The capacity curve was developed by Freese and Nichols Inc.. Conservation pool storage is 15,400 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1056.3
Crest of spillway (top of conservation pool)	1048.0
Emergency spillway	1051.7

COOPERATION.--Capacity curve and diversions for municipal use are provided by the city of Iowa Park.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 1,740 acre-ft, Oct 1, elevation, 1,033.21 ft; minimum contents, 757 acre-ft, Sep 30, elevation, 1,028.33 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

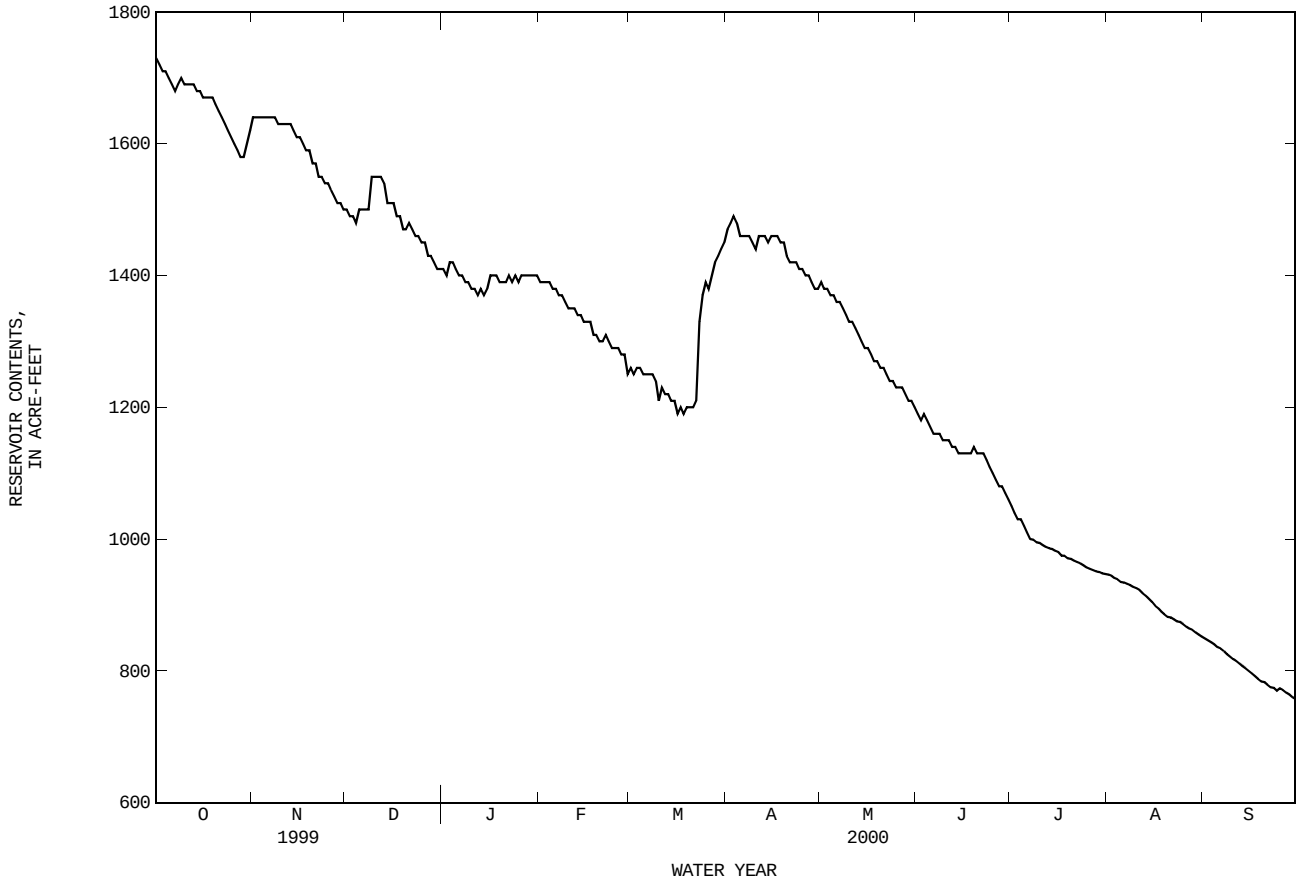
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1730	e1640	1500	1410	1390	1260	1470	1390	1190	1050	946	849
2	1720	e1640	1490	1400	1390	1250	1480	1380	1180	1040	944	846
3	1710	1640	1490	1420	1390	1260	1490	1380	1190	1030	941	e843
4	1710	1640	1480	1420	1390	1260	1480	1370	1180	1030	939	e840
5	1700	1640	1500	1410	1380	1250	1460	1370	1170	1020	935	e836
6	1690	1640	1500	1400	1380	1250	1460	1360	1160	1010	934	e834
7	1680	1640	1500	1400	1370	1250	1460	1360	1160	1000	932	830
8	1690	1640	1500	1390	1370	1250	1460	1350	1160	999	930	825
9	1700	1630	1550	1390	1360	1240	1450	1340	1150	995	927	822
10	1690	1630	1550	e1380	1350	1210	1440	1330	1150	994	925	818
11	1690	1630	1550	e1380	1350	1230	1460	1330	1150	991	923	815
12	1690	1630	1550	1370	1350	1220	1460	1320	1140	988	918	811
13	1690	1630	1540	1380	1340	1220	1460	1310	1140	986	914	807
14	1680	1620	1510	1370	1340	1210	1450	1300	1130	985	909	804
15	1680	1610	1510	1380	1330	1210	1460	1290	1130	982	905	800
16	1670	1610	1510	1400	1330	1190	1460	1290	1130	980	899	796
17	1670	1600	1490	1400	1330	1200	1460	1280	1130	975	895	792
18	1670	1590	1490	1400	1310	1190	1450	1270	1130	975	890	788
19	e1670	1590	1470	1390	1310	1200	1450	1270	1140	971	886	784
20	e1660	1570	1470	1390	1300	1200	1430	1260	1130	970	882	783
21	e1650	1570	1480	1390	1300	1200	1420	1260	1130	967	881	779
22	e1640	1550	1470	1400	1310	1210	1420	1250	1130	965	878	775
23	e1630	1550	1460	1390	1300	1330	1420	1240	1120	963	875	774
24	e1620	1540	1460	1400	1290	1370	1410	1240	1110	960	874	770
25	e1610	1540	1450	1390	1290	1390	1410	1230	1100	957	871	773
26	e1600	1530	1450	1400	1290	1380	1400	1230	1090	955	867	771
27	e1590	1520	1430	1400	1280	1400	1400	1230	1080	953	864	767
28	e1580	1510	1430	1400	1280	1420	1390	1220	1080	951	862	764
29	e1580	1510	1420	1400	1250	1430	1380	1210	1070	950	858	760
30	e1600	1500	1410	1400	---	1440	1380	1210	1060	948	855	757
31	e1620	---	1410	1400	---	1450	---	1200	---	947	852	---
MAX	1730	1640	1550	1420	1390	1450	1490	1390	1190	1050	946	849
MIN	1580	1500	1410	1370	1250	1190	1380	1200	1060	947	852	757
(+)	1032.86	1032.50	1032.23	1032.20	1031.76	1032.35	1032.15	1031.59	1031.16	1030.42	1029.37	1028.33
(@)	-110	-120	-90	-10	-150	+200	-70	-180	-140	-113	-95	-95
(++)	113	90	87	83	79	108	116	144	96	86	90	83

CAL YR 1999 MAX 4200 MIN 1410 (@) -2770 (++) 1219
WTR YR 2000 MAX 1740 MIN 757 (@) -973 (++) 1175

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the city of Iowa Park.

07312380 NORTH FORK BUFFALO CREEK RESERVOIR NEAR IOWA PARK, TX--Continued



07312500 WICHITA RIVER AT WICHITA FALLS, TX

LOCATION.--Lat 33°54′34", long 98°32′00", Wichita County, Hydrologic Unit 11130206, near center of stream at downstream side of bridge on Beverly Drive in Wichita Falls, 4 mi upstream from Fort Worth and Denver Railway Co. bridge, 8.4 mi upstream from Holliday Creek, and 55.3 mi upstream from mouth.

DRAINAGE AREA.--3,140 mi^2, of which 2,086 mi^2 is above Lake Kemp Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Feb 1901 to Jan 1902 (monthly discharge only, published in WSP 1311), Oct 1910 to Dec 1911 (gage heights only), Mar 1938 to current year.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 924.26 ft above sea level. Feb 1901 to Jan 1902 and Oct 1, 1910, to Dec 31, 1911, nonrecording gages at site 4 mi downstream at different datum. Mar 30, 1938, to Dec 1, 1959, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good, except those for estimated daily discharges, which are fair. Since installation of gage in Mar 1938, at least 10% of contributing drainage area has been regulated by Lake Kemp (station 07312000, conservation pool storage 319,600 acre-ft) 71 mi upstream. Since completion of Lake Kemp in 1923, no outflow has passed over the spillway. Water is diverted from Lake Diversion (conservation pool storage 40,000 acre-ft) 41 mi upstream for the irrigation of 42,000 acres under permit in the vicinity of Wichita Falls. During the current water year, the Wichita County Water Improvement District No. 2 diverted 47,150 acre-ft from Lake Diversion for mining, industrial, irrigation, and for recreational uses.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 50,000 ft^3/s Jun 8, 1915, computed by Vernon L. Sullivan, engineer for Big Wichita River Irrigation Co.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	51	212	18	11	24	19	46	23	28	69	52	38
2	47	150	20	11	22	21	44	97	43	94	54	32
3	41	89	21	16	20	21	38	71	47	75	56	34
4	48	63	31	12	20	18	50	41	72	47	51	29
5	56	49	27	27	18	18	37	30	70	30	56	32
6	57	39	26	50	17	17	28	58	54	21	52	30
7	71	33	27	67	16	16	26	61	42	28	48	30
8	74	28	28	68	16	18	26	35	33	34	47	36
9	139	25	48	23	14	31	23	23	33	38	47	32
10	161	25	88	22	14	36	21	22	40	33	44	38
11	141	26	131	24	13	24	23	23	39	32	42	36
12	e94	30	65	26	13	17	77	24	48	29	48	37
13	e71	35	42	27	14	16	80	20	51	35	47	42
14	e43	35	32	33	14	13	54	25	48	59	59	47
15	e41	32	25	38	13	10	41	27	45	57	63	50
16	e38	30	21	33	14	10	57	27	46	55	62	46
17	e38	28	20	36	23	39	69	27	53	50	59	39
18	e38	27	18	34	22	44	74	29	233	47	59	50
19	e36	29	17	31	15	23	49	20	370	42	58	50
20	e35	27	17	64	12	18	32	26	133	41	61	43
21	e35	24	17	64	14	18	25	29	74	44	62	35
22	e35	25	16	65	16	25	22	33	50	42	69	37
23	e35	23	16	67	24	451	21	27	38	45	70	45
24	e33	21	15	71	27	1670	18	23	29	43	73	52
25	e33	22	14	65	48	879	17	24	23	58	74	51
26	e33	22	13	42	43	169	14	50	30	51	56	46
27	e32	20	12	37	28	85	13	60	57	51	42	41
28	e32	20	12	33	21	58	14	44	79	50	35	40
29	e32	20	12	27	19	49	21	38	57	57	38	40
30	60	19	12	24	---	52	24	28	69	44	33	39
31	161	---	11	23	---	45	---	31	---	40	34	---
TOTAL	1841	1228	872	1171	574	3930	1084	1096	2034	1441	1651	1197
MEAN	59.4	40.9	28.1	37.8	19.8	127	36.1	35.4	67.8	46.5	53.3	39.9
MAX	161	212	131	71	48	1670	80	97	370	94	74	52
MIN	32	19	11	11	12	10	13	20	23	21	33	29
AC-FT	3650	2440	1730	2320	1140	7800	2150	2170	4030	2860	3270	2370

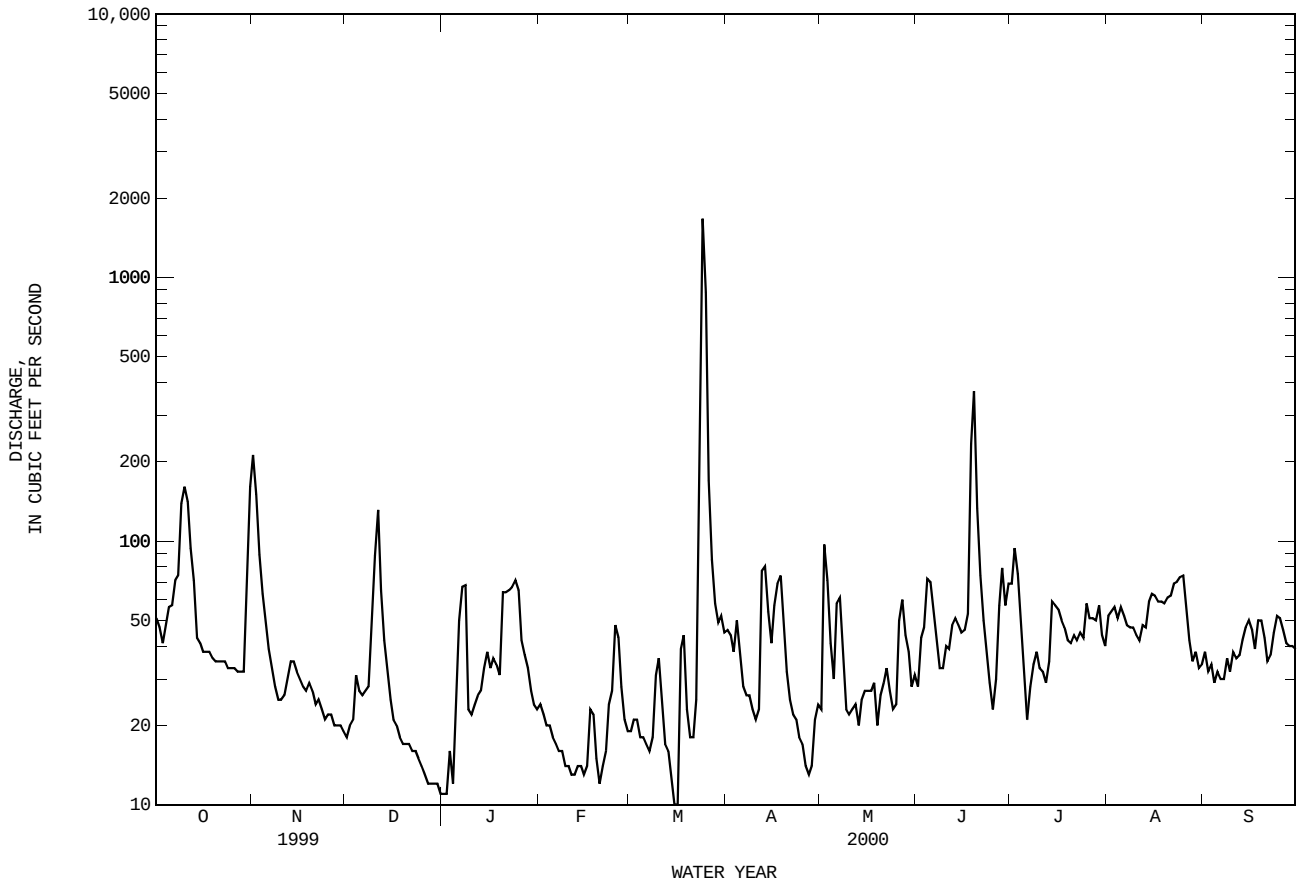
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2000, BY WATER YEAR (WY)

MEAN	402	201	116	90.3	150	199	228	554	512	234	259	316
MAX	4017	1784	1091	859	1252	1412	1450	4105	4475	1201	2791	2619
(WY)	1942	1973	1992	1992	1992	1993	1990	1941	1941	1975	1950	1950
MIN	55.1	23.5	25.3	22.5	17.8	26.9	36.1	35.4	67.8	46.5	53.3	39.9
(WY)	1983	1998	1979	1974	1995	1975	2000	2000	2000	2000	2000	2000

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1938 - 2000	
ANNUAL TOTAL	32055		18119			
ANNUAL MEAN	87.8		49.5		269	
HIGHEST ANNUAL MEAN					977	1941
LOWEST ANNUAL MEAN					49.5	2000
HIGHEST DAILY MEAN	2660	Mar 19	1670	Mar 24	17300	Oct 3 1941
LOWEST DAILY MEAN	11	Dec 31	10	Mar 15	7.7	Apr 9 1978
ANNUAL SEVEN-DAY MINIMUM	12	Dec 25	12	Dec 27	11	Mar 6 1975
INSTANTANEOUS PEAK FLOW			1770	Mar 24	17800	Oct 3 1941
INSTANTANEOUS PEAK STAGE			9.34	Mar 24	24.00	Oct 3 1941
ANNUAL RUNOFF (AC-FT)	63580		35940		194900	
10 PERCENT EXCEEDS	138		69		555	
50 PERCENT EXCEEDS	47		35		82	
90 PERCENT EXCEEDS	19		17		35	

e Estimated



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Apr 1966 to Jul 1975, Oct 1981 to Sep 1989, Jun 1996 to Sep 1997.
BIOCHEMICAL DATA: Nov 1981 to Aug 1989 and Jun 1996 to Sep 1997.
SEDIMENT DATA: Apr 1966 to Jul 1975.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1981 to Sep 1989, Jun 1996 to current year.
WATER TEMPERATURE: Oct 1981 to Sep 1989, Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor Oct 1981 to Sep 1989, Jun 1996 to current year.

REMARKS.--Records good. Interruption in the record was caused by malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 9,490 microsiemens, Mar 2, 1984; minimum daily, 245 microsiemens, Oct 24, 1983.
WATER TEMPERATURE: Maximum daily, 36.0°C, Jul 15, 2000; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 7,790 microsiemens, Jan 6; minimum, 724 microsiemens, Mar 25.
WATER TEMPERATURE: Maximum, 36.0°C, Jul 15; minimum, 1.5°C, Jan 29.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	6060	5900	5990	3970	2280	2880	7230	7170	7200	7190	7110	7150
2	6000	5860	5940	3020	2290	2650	7260	7200	7220	7300	7170	7250
3	6000	5740	5870	3570	3010	3220	7300	7230	7270	7250	6800	7120
4	6030	5840	5940	4200	3570	3920	7300	7170	7240	7270	7020	7170
5	5890	5600	5740	4650	4200	4430	7370	7250	7300	7450	7080	7270
6	5710	5600	5660	5010	4650	4810	7410	7280	7340	7790	6690	7450
7	6250	5690	5960	5290	5010	5180	7430	7330	7380	6690	4700	6060
8	6270	4310	5830	5490	5250	5370	7440	7290	7360	5260	4440	5000
9	5070	2720	3940	6040	5390	5650	7360	5890	6810	5350	5130	5240
10	5050	3830	4540	6310	6040	6160	6890	4480	5950	5800	5220	5480
11	4080	3390	3800	6490	6310	6420	6000	2350	3070	6070	5790	5930
12	3790	3380	3550	6710	6490	6620	2670	2440	2600	6170	5970	6060
13	4230	3790	3990	6880	6710	6820	2790	2590	2680	6150	5860	6050
14	4600	4230	4420	6780	6600	6650	3220	2780	2970	6120	5820	5990
15	4930	4600	4760	6720	6670	6700	4510	3220	3820	6520	5860	5980
16	5170	4930	5060	6690	6640	6670	5090	4510	4790	6710	5790	6210
17	5330	5170	5250	6650	6620	6640	5750	5080	5400	5830	5650	5740
18	5470	5330	5430	6760	6650	6710	6200	5700	5950	5780	5680	5730
19	5540	5460	5500	6920	6760	6840	6530	6160	6320	5830	5730	5780
20	5610	5530	5570	7030	6910	6980	6670	6500	6580	5830	5420	5490
21	5750	5590	5670	7030	6950	6990	6840	6620	6730	5450	5360	5410
22	6560	5750	6080	6960	6860	6930	6910	6670	6800	5510	5400	5460
23	6410	6290	6350	6960	6860	6900	6960	6680	6860	5560	5430	5490
24	6460	6330	6390	7080	6910	6980	7030	6750	6900	5590	5440	5530
25	6380	6210	6310	7160	6990	7070	7070	6820	6940	5640	5450	5560
26	6480	6260	6360	7160	7010	7080	7090	6950	7020	5890	5630	5790
27	6320	6200	6260	7170	7090	7130	7060	6890	7000	5970	5630	5820
28	6360	6220	6290	7150	7090	7120	7140	6900	7050	5860	5570	5740
29	6340	6290	6320	7110	6870	7020	7150	6940	7070	5830	5580	5720
30	6330	5190	5740	7200	7020	7120	7210	7090	7160	5920	5640	5790
31	5320	3540	4300	---	---	---	7240	7060	7160	5940	5680	5820
MONTH	6560	2720	5450	7200	2280	6060	7440	2350	6190	7790	4440	6010

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	6080	5840	5980	6130	5450	5900	4100	3480	3820	6510	5430	6170
2	6240	5960	6120	6200	5730	6000	4230	3990	4140	6580	3050	5500
3	6280	5970	6180	6360	6190	6300	4430	3910	4120	3050	2510	2700
4	6350	6050	6210	6350	6200	6240	4930	4430	4800	3450	2910	3120
5	6380	6220	6330	6220	6070	6150	5130	4620	4850	3940	3450	3750
6	6520	6200	6400	6450	6180	6320	4940	3380	3840	4500	3940	4210
7	6530	6320	6460	6440	6230	6340	3940	3490	3680	4940	4380	4690
8	6600	6340	6510	6530	6110	6320	4420	3940	4210	4780	3910	4170
9	6640	6520	6590	6560	6370	6460	4870	4410	4600	5180	4390	4820
10	6700	6540	6630	6720	6370	6620	5280	4870	5090	5230	5000	5130
11	6740	6580	6660	6690	5750	6090	5700	4990	5450	5040	4860	4950
12	6800	6520	6700	6100	5300	5770	5180	2910	4170	5170	4910	5020
13	6860	6740	6800	5460	5300	5360	5070	2850	4700	5430	5170	5300
14	7040	6640	6860	5680	5460	5550	5480	4460	4940	5630	5430	5560
15	7000	6850	6900	6100	5680	5910	5150	3790	4610	5800	5630	5710
16	6940	6850	6900	6360	6100	6190	3790	2980	3370	5870	5800	5850
17	6970	5820	6590	6520	6050	6280	4600	2760	3850	5970	5870	5910
18	6640	6330	6480	6430	5850	5980	4710	3990	4360	6090	5960	5990
19	6870	6320	6700	6260	5980	6110	4300	2930	3270	6300	6080	6200
20	6920	6790	6840	6710	6260	6490	3600	3170	3350	6400	6290	6370
21	7190	6810	6930	6880	6710	6790	4270	3600	3920	6360	6250	6310
22	7170	6030	6880	6880	6390	6570	4640	4270	4470	6440	6340	6390
23	6420	5280	6110	6850	1270	3510	5010	4640	4830	6460	6260	6360
24	6400	5610	6150	1270	755	960	5400	5010	5190	6310	6210	6270
25	6500	4970	6060	995	724	863	5750	5400	5570	6310	6160	6240
26	5980	4250	5270	1320	948	1110	6010	5750	5890	6200	5730	5940
27	5750	4970	5320	1770	1320	1540	6170	6010	6100	5840	5340	5570
28	5030	4860	4960	2230	1770	2000	6370	6170	6290	5870	5450	5740
29	5460	5000	5340	3020	2230	2520	6380	5220	5940	6000	5780	5900
30	---	---	---	3710	3020	3510	6330	5420	6110	5920	5880	5900
31	---	---	---	3800	3590	3680	---	---	---	5900	5400	5590
MONTH	7190	4250	6340	6880	724	5010	6380	2760	4650	6580	2510	5400

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5400	5270	5320	5240	4660	4960	6500	6060	6390	6880	6790	6830
2	5660	5390	5530	5260	4550	4910	6060	5520	5640	6810	6740	6780
3	5730	5610	5680	5290	2970	3780	5940	5660	5830	6760	6450	6580
4	5630	5110	5390	3750	3320	3600	6120	5940	6020	6560	6440	6500
5	5660	5340	5510	4030	3750	3960	6310	6120	6250	6560	6460	6500
6	5660	5080	5360	4370	4010	4110	6340	6220	6270	6830	6500	6630
7	5110	4780	4900	4830	4360	4550	6450	6340	6410	7120	6830	6990
8	4850	4660	4760	5000	4830	4920	6530	6440	6480	7140	7060	7100
9	4830	4700	4790	5350	5000	5130	6650	6530	6610	7140	7040	7100
10	4930	4740	4790	5500	5350	5420	6730	6620	6680	7150	7030	7090
11	5100	4930	5060	5570	5500	5540	6810	6730	6780	7070	6870	6970
12	5160	5080	5110	5600	5390	5550	6920	6770	6860	6930	6790	6860
13	5170	5070	5120	5460	5260	5390	7000	6810	6910	6940	6620	6850
14	5180	5050	5100	5430	4310	4620	6930	6760	6860	7010	6590	6850
15	5110	5030	5060	5290	4700	5100	6840	6600	6760	6810	6620	6760
16	5100	5030	5070	4740	3410	3680	6760	6460	6660	6900	6730	6800
17	5120	4450	4880	4070	3380	3860	6770	6370	6570	6830	6710	6780
18	4830	1940	4090	3570	3240	3380	6440	6240	6350	6800	6670	6740
19	2110	1740	1930	3760	3120	3410	6300	6220	6270	6860	6750	6790
20	2280	2110	2200	3610	3180	3430	6380	6270	6330	6880	6710	6790
21	2600	2190	2410	4130	3610	3900	6440	6290	6350	6760	6590	6690
22	2880	2600	2710	4650	4130	4380	6340	6190	6270	6770	6600	6690
23	3320	2880	3120	5090	4650	4860	6320	6220	6270	6990	6750	6820
24	3510	3320	3410	5490	5090	5340	6240	6130	6180	7010	6750	6870
25	3950	3510	3710	5810	5490	5700	6220	6120	6180	6870	6660	6770
26	4360	3950	4160	6070	5810	5930	6450	6180	6280	6710	6630	6670
27	4470	3130	3990	6120	6020	6070	6620	6450	6540	6760	6600	6670
28	4600	3480	4310	6120	5890	6030	6800	6620	6710	6800	6620	6730
29	4680	4200	4470	5890	5780	5820	6850	6590	6720	6800	6690	6740
30	4660	4020	4190	6200	5870	6020	6760	6640	6690	6860	6680	6770
31	---	---	---	6470	6200	6360	6820	6600	6740	---	---	---
MONTH	5730	1740	4400	6470	2970	4830	7000	5520	6450	7150	6440	6790
YEAR	7790	724	5630									

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	22.1	16.7	19.3	15.7	13.9	14.8	14.0	9.2	11.3	13.2	7.8	10.3
2	23.3	17.9	20.3	14.9	11.7	13.2	16.2	12.3	14.0	14.8	12.0	12.8
3	22.5	17.3	19.8	13.3	10.1	11.7	15.7	11.4	13.7	13.4	9.9	11.7
4	19.6	15.6	16.7	14.9	10.7	12.8	14.7	11.2	13.5	9.9	5.3	7.5
5	20.4	14.2	17.0	17.8	12.6	15.2	11.3	7.9	9.6	8.0	3.8	6.2
6	23.1	17.7	20.0	19.8	15.2	17.5	9.4	5.0	7.2	9.6	4.2	6.6
7	22.2	18.0	20.0	20.2	16.2	18.1	10.9	6.0	8.3	8.6	4.8	6.8
8	23.5	18.9	20.8	19.4	16.2	17.6	13.8	9.0	11.2	11.1	8.6	9.6
9	22.5	19.5	20.9	19.3	15.0	17.1	14.1	9.5	12.3	12.1	7.7	9.8
10	23.1	19.6	21.4	20.3	15.7	17.8	9.6	6.8	8.4	11.6	6.7	9.3
11	23.9	20.0	21.9	20.3	15.7	17.9	9.1	7.4	8.4	11.9	7.4	9.7
12	24.8	20.3	22.3	19.7	15.3	17.6	10.3	8.2	9.3	12.4	8.2	10.2
13	25.0	20.0	22.4	19.9	15.6	17.9	9.0	5.8	7.5	11.4	7.5	9.6
14	24.7	20.0	22.4	19.8	15.5	17.7	9.0	5.6	7.2	9.9	5.8	8.2
15	25.0	20.4	22.5	18.8	15.0	17.0	8.1	3.9	6.0	13.0	7.0	10.0
16	22.8	19.8	21.8	18.2	13.7	16.0	7.2	3.6	5.5	14.7	11.2	12.8
17	19.8	14.8	16.4	18.3	14.2	16.2	8.9	5.4	6.9	15.9	11.3	13.7
18	16.1	13.8	14.8	19.0	14.6	16.7	8.5	6.1	7.1	14.3	11.7	12.7
19	16.9	12.5	14.7	17.2	13.9	15.5	9.0	5.5	6.9	13.6	9.0	11.4
20	17.2	11.9	14.6	15.3	11.1	13.3	7.9	4.6	6.3	11.9	8.1	9.6
21	18.5	13.0	15.7	16.0	11.6	13.6	7.4	3.4	5.1	10.0	6.8	8.4
22	18.9	13.8	16.4	15.5	12.8	14.3	7.1	2.7	4.6	11.8	8.8	10.2
23	18.1	14.2	16.2	14.8	11.6	13.1	7.8	2.8	5.0	12.1	8.5	10.2
24	17.1	12.8	15.0	12.1	8.9	10.6	9.1	4.1	6.2	9.5	6.6	8.1
25	18.0	12.8	15.4	11.5	7.6	9.5	8.3	4.3	6.3	9.2	6.6	7.6
26	19.4	14.3	16.7	11.9	7.3	9.5	11.0	6.5	8.3	7.2	4.7	5.9
27	18.8	14.8	16.9	13.3	8.7	10.8	10.5	5.8	7.7	4.7	3.5	3.9
28	20.2	16.0	17.9	13.5	9.3	11.3	10.8	5.0	7.5	3.6	2.5	2.9
29	21.3	17.2	19.1	13.5	9.7	11.4	11.5	6.1	8.6	6.3	1.5	3.6
30	19.2	14.0	16.3	12.8	9.4	10.8	12.6	8.4	10.1	6.9	1.6	4.4
31	14.1	13.2	13.7	---	---	---	11.8	6.8	9.1	7.6	3.3	5.7
MONTH	25.0	11.9	18.4	20.3	7.3	14.6	16.2	2.7	8.4	15.9	1.5	8.7

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	10.8	6.1	8.0	18.8	12.6	15.6	16.2	13.3	14.6	23.9	19.3	21.3
2	10.5	5.3	7.8	19.1	14.2	16.1	18.2	12.4	14.9	20.6	18.5	19.3
3	12.4	6.3	9.1	15.8	10.4	12.7	16.4	13.5	14.9	22.5	17.8	20.0
4	11.3	6.6	8.7	17.0	8.0	11.9	18.5	10.9	14.5	26.8	19.8	23.0
5	10.4	5.2	7.6	17.6	10.9	13.8	22.2	13.7	17.7	26.5	22.2	24.0
6	10.8	5.4	8.2	22.1	14.2	17.4	25.0	16.6	20.4	29.2	22.8	25.6
7	13.6	7.6	10.2	20.8	17.8	18.9	24.9	18.7	21.4	30.8	24.7	27.3
8	14.4	8.2	11.2	20.6	14.2	17.4	21.1	14.1	17.6	30.5	24.9	27.4
9	16.2	9.9	12.8	19.7	13.6	16.7	20.9	14.0	17.0	29.2	23.3	26.1
10	17.7	12.1	14.6	17.4	12.5	14.8	22.1	15.9	18.6	29.3	21.5	25.1
11	14.9	10.8	12.7	16.6	9.0	12.5	20.5	17.0	19.3	31.9	24.1	27.5
12	13.2	7.6	10.5	18.0	9.7	13.3	17.0	14.6	15.4	30.7	25.5	27.6
13	15.2	10.4	12.3	20.2	11.5	15.2	20.5	14.1	16.7	27.0	21.0	24.0
14	14.4	8.5	11.1	20.6	15.2	17.3	23.2	16.3	19.3	25.8	19.0	22.2
15	16.5	9.8	12.8	23.6	15.3	18.7	22.4	18.3	20.1	27.0	19.8	23.1
16	15.0	11.8	13.5	18.7	11.4	15.7	22.4	16.8	19.3	27.7	23.3	25.1
17	17.1	12.2	14.5	11.6	9.8	10.7	21.4	17.4	19.2	26.0	23.4	24.4
18	17.4	12.4	15.2	13.3	9.0	10.7	25.7	18.6	21.7	28.0	22.8	24.7
19	14.7	8.8	11.5	17.6	8.8	12.8	28.1	22.3	25.1	23.4	19.2	20.5
20	14.1	10.0	11.8	19.9	10.9	15.0	26.2	20.2	23.1	26.7	17.7	21.8
21	16.9	11.4	13.8	16.1	14.6	15.3	25.4	18.4	21.7	30.0	21.9	25.3
22	17.7	14.9	15.8	15.6	13.8	14.6	21.7	18.5	20.1	30.9	24.1	27.1
23	18.8	12.6	15.6	17.5	14.9	15.9	24.6	17.4	20.5	31.9	24.6	27.9
24	18.8	13.4	16.4	17.0	15.6	16.2	26.7	18.4	22.1	32.9	25.3	28.6
25	19.9	15.8	17.7	19.1	16.6	17.6	27.3	20.1	23.2	32.3	26.7	29.1
26	17.7	13.2	15.5	22.7	17.9	20.2	27.2	19.7	22.9	30.9	25.5	28.2
27	17.7	10.9	14.1	23.5	18.9	21.1	25.1	21.4	22.8	28.7	25.6	27.0
28	17.7	11.6	14.5	23.5	18.2	20.8	27.1	18.3	22.1	31.7	24.4	27.8
29	19.1	13.5	15.9	21.6	18.2	20.0	25.5	20.1	22.1	32.2	25.1	28.5
30	---	---	---	19.0	15.5	17.0	22.4	20.7	21.7	33.0	25.7	29.0
31	---	---	---	17.4	14.1	15.7	---	---	---	31.8	26.2	28.7
MONTH	19.9	5.2	12.5	23.6	8.0	15.9	28.1	10.9	19.7	33.0	17.7	25.4

07312500 WICHITA RIVER AT WICHITA FALLS, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.9	25.5	28.3	27.8	25.5	26.5	31.9	26.0	28.9	32.7	27.4	30.0
2	27.9	26.1	26.9	30.1	25.2	27.2	32.9	26.4	29.6	33.5	27.6	30.4
3	27.8	24.7	25.9	29.8	26.5	28.0	33.3	27.3	30.1	33.7	27.8	30.6
4	27.8	24.7	26.0	32.5	25.8	28.8	33.7	27.7	30.5	34.0	27.9	30.9
5	29.2	24.5	26.6	32.7	26.0	29.1	33.3	27.5	30.2	32.5	28.1	30.4
6	29.1	23.0	25.9	33.6	26.5	29.7	33.6	27.8	30.4	31.7	26.6	29.2
7	29.5	23.2	26.1	33.6	26.7	30.0	33.7	27.6	30.4	31.5	25.7	28.4
8	29.7	22.8	26.1	33.3	27.2	30.1	33.7	27.1	30.1	31.0	25.6	28.3
9	28.6	24.7	26.4	33.9	27.1	30.1	30.8	27.5	29.2	31.5	25.7	28.5
10	27.8	24.5	25.7	33.8	27.0	30.1	33.2	27.1	29.9	31.9	26.2	28.8
11	28.6	24.4	26.1	34.0	27.5	30.6	33.5	27.0	30.2	31.9	26.5	28.9
12	30.0	24.8	27.0	34.4	27.9	30.6	33.6	28.0	30.7	31.2	26.2	28.5
13	31.0	25.3	27.7	34.6	28.4	31.0	33.5	28.2	30.6	30.4	26.0	28.2
14	27.6	25.5	26.2	34.9	27.8	31.1	31.7	26.5	29.0	31.8	26.1	28.8
15	30.4	22.8	26.4	36.0	29.9	32.6	32.5	26.8	29.4	29.8	25.9	27.8
16	29.3	25.5	27.4	33.7	29.7	31.6	33.2	27.8	30.2	28.3	23.0	25.6
17	27.4	22.5	24.6	33.0	27.9	30.1	33.5	27.9	30.4	27.4	22.4	24.8
18	23.6	21.4	22.5	33.9	27.1	30.2	33.4	27.7	30.4	26.7	21.0	23.8
19	23.6	21.1	22.1	35.0	28.0	31.3	33.0	28.4	30.4	26.1	21.0	23.4
20	27.6	23.2	25.1	35.5	28.9	32.0	32.0	26.2	28.9	26.4	21.7	23.6
21	28.6	25.3	26.8	34.3	27.8	31.0	32.2	26.6	29.1	26.4	20.3	23.2
22	31.6	24.7	27.8	31.9	27.1	29.6	32.0	27.2	29.3	29.1	23.0	25.8
23	31.6	25.8	28.4	32.5	26.5	29.2	32.2	27.3	29.5	28.7	25.0	26.4
24	32.9	25.7	28.8	32.8	26.4	29.3	32.7	27.4	29.8	25.0	18.6	21.4
25	33.2	26.1	29.3	30.9	25.9	28.3	33.0	28.0	30.3	19.9	15.3	17.6
26	29.5	26.6	27.8	32.8	26.2	29.1	33.5	27.8	30.4	21.1	14.8	17.8
27	28.6	25.4	27.0	30.4	27.2	28.8	33.1	27.5	30.1	22.4	15.9	19.1
28	27.3	25.8	26.6	32.4	26.2	29.0	32.8	26.9	29.7	23.2	17.0	20.0
29	26.6	24.5	25.5	31.8	27.2	29.2	32.5	27.1	29.7	23.3	18.0	20.7
30	29.1	23.9	26.2	31.6	26.2	28.7	32.9	27.1	29.9	23.2	18.2	20.7
31	---	---	---	31.5	25.7	28.5	32.3	27.1	29.6	---	---	---
MONTH	33.2	21.1	26.4	36.0	25.2	29.7	33.7	26.0	29.9	34.0	14.8	25.7
YEAR	36.0	1.5	19.6									

07312700 WICHITA RIVER NEAR CHARLIE, TX

LOCATION.--Lat 34°03'11", long 98°17'47", Clay County, Hydrologic Unit 11130206, on right bank at upstream side of bridge on Farm Road 810, 3.0 mi southeast of Charlie, and 5.7 mi northwest of Petrolia.

DRAINAGE AREA.--3,439 mi^2, of which 2,086 mi^2 is above Lake Kemp Dam and 143 mi^2 is above Lake Wichita Dam.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 872.71 ft above sea level. Satellite telemeter at station.

REMARKS.--Records good. Since installation of gage in Oct 1967, at least 10% of contributing drainage area has been regulated by Lake Kemp (conservation pool storage 319,600 acre-ft) 71 mi upstream. Records furnished by the city of Wichita Falls indicate that 12,716 acre-ft was returned to river above this station as wastewater effluent.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	83	365	42	38	49	46	83	55	86	146	61	51
2	86	278	42	37	48	45	137	59	80	185	61	54
3	88	187	41	37	49	54	91	112	89	197	56	67
4	84	124	48	46	47	54	70	131	185	129	52	56
5	93	e93	e65	41	46	49	75	104	182	81	58	59
6	104	e76	e52	37	45	47	67	98	139	55	63	61
7	101	e63	42	50	45	48	60	94	123	42	63	58
8	101	e54	44	100	44	52	55	112	110	68	55	58
9	390	e50	50	120	43	66	53	88	99	75	58	55
10	216	45	87	91	43	50	51	72	93	63	55	58
11	165	41	85	83	41	55	53	69	99	52	47	52
12	141	39	142	75	40	52	252	69	99	52	51	53
13	109	38	94	76	40	46	191	80	114	55	63	55
14	95	38	67	76	39	46	112	73	116	182	64	68
15	89	45	57	82	41	46	85	76	114	143	70	79
16	86	48	50	88	40	44	120	81	116	83	81	80
17	80	46	45	92	55	45	111	75	124	62	93	73
18	85	44	43	95	129	74	92	77	287	70	94	54
19	82	43	43	88	60	115	94	76	341	64	91	61
20	80	42	41	77	47	99	78	71	374	55	86	75
21	83	e42	41	77	41	78	63	75	182	47	84	88
22	76	e44	41	91	44	72	52	79	134	46	91	84
23	75	e44	40	93	77	318	47	92	114	50	101	74
24	81	44	39	96	80	961	48	89	96	38	107	71
25	83	42	38	99	65	1620	45	81	73	42	108	83
26	88	42	37	90	145	754	44	e95	65	43	105	92
27	87	42	36	76	76	224	44	e160	91	62	92	92
28	82	42	36	88	60	139	40	258	117	67	67	88
29	81	44	37	67	50	113	42	128	143	79	59	77
30	113	43	37	55	---	93	83	103	128	81	62	69
31	241	---	37	51	---	85	---	94	---	68	53	---
TOTAL	3448	2188	1599	2312	1629	5590	2438	2926	4113	2482	2251	2045
MEAN	111	72.9	51.6	74.6	56.2	180	81.3	94.4	137	80.1	72.6	68.2
MAX	390	365	142	120	145	1620	252	258	374	197	108	92
MIN	75	38	36	37	39	44	40	55	65	38	47	51
AC-FT	6840	4340	3170	4590	3230	11090	4840	5800	8160	4920	4460	4060

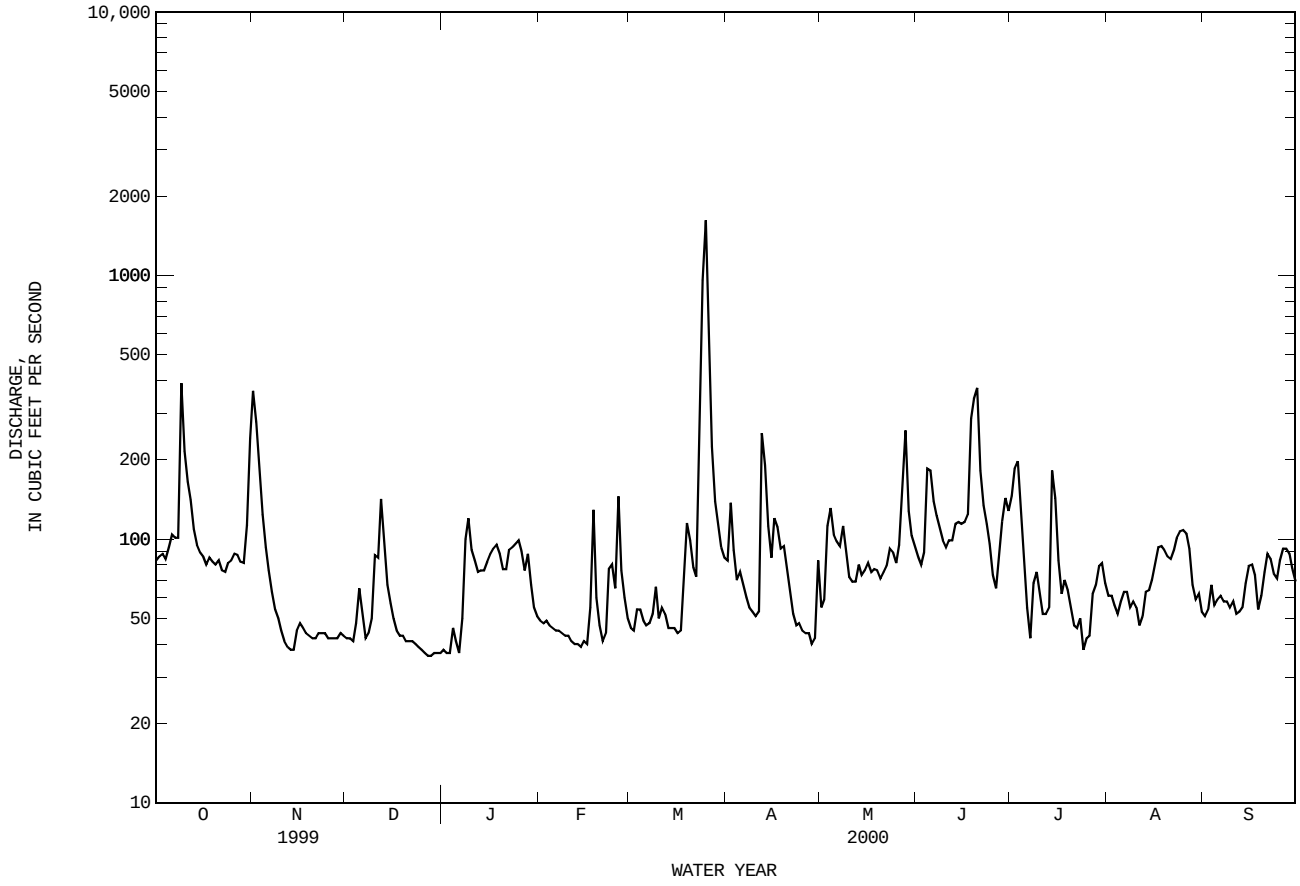
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2000, BY WATER YEAR (WY)

MEAN	358	294	191	171	265	402	334	558	657	285	309	409
MAX	2032	2194	1556	1005	1411	1832	2377	3094	2815	1330	2766	2598
(WY)	1987	1973	1992	1992	1992	1993	1990	1990	1995	1992	1995	1986
MIN	101	50.3	51.5	46.1	45.6	70.2	61.2	94.4	135	80.1	72.6	68.2
(WY)	1971	1998	1979	1974	1995	1972	1989	2000	1994	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1968 - 2000	
ANNUAL TOTAL	63432		33021			
ANNUAL MEAN	174		90.2		353	
HIGHEST ANNUAL MEAN					986	1987
LOWEST ANNUAL MEAN					90.2	2000
HIGHEST DAILY MEAN	2980	Mar 20	1620	Mar 25	7740	May 7 1990
LOWEST DAILY MEAN	36	Dec 27	36	Dec 27	21	Dec 19 1997
ANNUAL SEVEN-DAY MINIMUM	37	Dec 25	37	Dec 25	24	Dec 13 1997
INSTANTANEOUS PEAK FLOW			1740	Mar 25	7760	May 7 1990
INSTANTANEOUS PEAK STAGE			9.75	Mar 25	25.80	May 7 1990
ANNUAL RUNOFF (AC-FT)	125800		65500		255500	
10 PERCENT EXCEEDS	253		130		826	
50 PERCENT EXCEEDS	94		72		137	
90 PERCENT EXCEEDS	44		42		62	

e Estimated

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued



07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1967 to Sep 1981, Oct 1989 to Sep 1997.
BIOCHEMICAL DATA: Oct 1967 to Sep 1981, Oct 1989 to Sep 1997.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1967 to Sep 1981 (local observer), Jun 1996 to current year.
WATER TEMPERATURE: Oct 1967 to Sep 1981 (local observer), Jun 1996 to current year.

INSTRUMENTATION.--Water-quality monitor since Jun 1996.

REMARKS.--Records good. Interruption in the record was caused by malfunctions of the instrument.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 10,000 microsiemens, Apr 25, 1972; minimum daily, 213 microsiemens, Apr 15, 1997.
WATER TEMPERATURE: Maximum daily, 35.3°C, Jul 15, 2000; minimum daily, 0.0°C, on many days during winter months.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum, 6,250 microsiemens, Sep 18, 19; minimum, 581 microsiemens, Apr 12.
WATER TEMPERATURE: Maximum, 35.3°C, Jul 15; minimum, 2.3°C, Jan 29.

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	4560	4280	4390	2800	2310	2540	4920	4460	4670	4480	4220	4340
2	4760	4500	4650	4210	2730	3720	4860	4430	4640	4490	4150	4310
3	4620	4500	4580	3360	2820	3050	4810	4360	4570	4540	4100	4290
4	4550	4480	4500	3020	2820	2900	4630	4200	4380	4460	4110	4280
5	4530	4220	4380	---	---	e3070	---	---	e4380	4560	4100	4320
6	4400	3950	4220	---	---	e3190	---	---	e4220	4430	4320	4360
7	4030	3790	3910	---	---	e3320	---	---	e4130	4350	3840	4040
8	4100	3970	4070	---	---	e3520	4270	3230	3690	5030	4000	4440
9	4170	1500	3240	---	---	e3850	4300	3550	4080	6120	4860	5550
10	1990	1580	1720	4090	3700	3890	4360	3530	4050	4940	4260	4450
11	2940	1990	2550	4130	3760	3920	4080	3010	3600	4630	4380	4550
12	3470	2940	3280	---	---	e3970	5720	3160	4620	4490	4280	4410
13	3450	3380	3420	---	---	e3940	5720	2100	3680	4580	4370	4470
14	3450	3280	3380	---	---	e4270	2230	2070	2130	4660	4440	4560
15	3350	3250	3280	4590	4220	4360	2650	2140	2510	4870	4590	4760
16	3570	3340	3440	4930	4400	4700	2580	2320	2410	5060	4690	4810
17	3780	3560	3670	5040	4620	4860	2580	2360	2480	5150	4830	4950
18	3920	3780	3820	4870	4530	4730	2870	2500	2640	5180	4940	5050
19	4120	3920	4020	4780	4460	4660	3400	2760	2920	5250	5080	5150
20	4230	4120	4170	---	---	e4550	3450	3170	3280	5240	4830	4950
21	4340	4230	4270	---	---	e4650	3630	3300	3400	5030	4760	4860
22	4400	4330	4360	---	---	e4740	3790	3540	3660	5170	4420	4770
23	4460	4400	4430	---	---	e4900	4000	3790	3900	4980	4740	4870
24	4520	4430	4480	5110	4740	4870	4120	3810	3950	5060	4730	4880
25	4690	4520	4590	5120	4760	4920	4250	3890	4050	5160	4790	4960
26	4760	4680	4710	5070	4680	4840	4320	4090	4180	5030	4810	4910
27	4800	4700	4740	5000	4590	4760	4410	4100	4230	4950	4820	4860
28	4800	4740	4770	4880	4420	4600	4490	4090	4280	4950	4620	4730
29	4960	4650	4800	5040	4440	4750	4550	4160	4400	4700	3820	4220
30	4800	4180	4550	5040	4510	4740	4430	4260	4350	3820	3140	3360
31	4650	2380	3670	---	---	---	4450	4170	4310	4230	3490	3940
MONTH	4960	1500	4000	---	---	4160	---	---	3800	6120	3140	4590

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	4410	4010	4250	4250	3650	3900	2360	1970	2180	3770	3260	3590
2	4310	4050	4140	4180	3970	4030	2970	2280	2670	3300	2530	2930
3	4310	3980	4140	4000	3500	3670	2960	1840	2180	4100	2660	3380
4	4330	4060	4150	3630	3460	3520	2520	1820	2130	5230	3780	4800
5	4480	4110	4280	3670	3510	3580	---	---	e2900	5130	3450	4170
6	4440	4130	4250	3670	3270	3460	---	---	e3300	3450	2810	3240
7	4460	4160	4270	3940	3500	3650	---	---	e3500	3240	2710	2870
8	4420	4170	4260	4150	3830	3960	3890	3450	3770	3480	2760	3000
9	4490	4140	4280	4200	3760	3920	3820	3200	3690	4110	3480	3940
10	4520	4150	4300	4050	3050	3730	3840	3570	3760	4120	3920	4030
11	4520	4190	4340	3550	3050	3390	3570	2790	3130	4340	3880	4120
12	4400	4230	4320	4220	3500	3810	3140	581	2530	3880	3810	3840
13	4390	4180	4300	4890	4190	4590	1520	581	1090	4400	3860	4150
14	4400	4190	4310	4890	4510	4630	2440	877	1810	4900	4250	4610
15	4450	4100	4260	4960	4380	4670	3390	2250	3130	4840	4490	4660
16	4530	4220	4360	4550	3920	4260	3830	2250	3270	4730	4510	4610
17	---	---	e3980	4300	3760	4030	3760	1860	2920	4820	4520	4670
18	---	---	e3790	3870	3640	3750	2530	1760	2100	4940	4540	4740
19	2810	1720	2160	5130	3640	4370	2880	2520	2690	5090	4710	4940
20	2960	2370	2690	5310	4990	5130	3490	2600	2990	5320	4930	5140
21	3810	2460	3280	5290	4980	5120	3730	3460	3640	5310	5010	5140
22	4350	3740	3940	---	---	e5000	3660	3440	3550	5240	4790	5080
23	4400	3940	4110	---	---	e4200	3490	2890	3170	5290	4710	5070
24	4250	2270	3690	---	---	e3100	2890	2780	2810	5550	5180	5340
25	3060	2180	2630	---	---	e1850	2910	2820	2870	5440	5240	5340
26	3920	1400	2770	---	---	e1650	3090	2910	3000	5460	4830	5180
27	2320	1490	1970	---	---	e2050	3280	3080	3160	4890	4500	e4480
28	3880	1730	3050	---	---	e1300	3380	3190	3290	4500	2150	3550
29	4620	3880	4350	---	---	e1550	3570	3240	3390	2510	2260	2360
30	---	---	---	2360	1670	1980	3720	3380	3570	3490	2430	2980
31	---	---	---	2080	1820	1960	---	---	---	4790	3490	e4010
MONTH	---	---	3810	---	---	3540	---	---	2940	5550	2150	4190

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	5070	4790	4960	4740	4310	4570	5370	5140	5240	6210	5670	5920
2	5000	4820	4910	4310	2710	3400	5550	5250	5330	5900	5340	5710
3	5110	4840	4970	2790	2270	2450	5660	5380	5500	5620	5290	5480
4	4900	3440	4400	3640	2290	3010	5700	5520	5600	5920	5540	5700
5	3440	2160	2680	4390	3640	4180	5860	5180	5450	5940	5370	5710
6	4350	3300	3840	4270	2860	3580	5500	5300	5400	5640	5320	5500
7	5080	4140	4810	3100	2830	2980	5600	5410	5490	5770	5290	5610
8	5220	4920	5130	3910	3030	3200	5690	5540	5610	5590	5300	5450
9	5070	4770	4920	4230	3910	4110	5780	5370	5620	5550	5060	5430
10	5060	4800	4900	4350	4100	4200	5670	5260	5510	5410	5130	5280
11	4840	4640	4730	4590	4280	4420	5730	5270	5500	5680	5040	5350
12	4970	4560	4740	4630	4530	4590	5610	5060	5330	5510	4930	5270
13	5020	4550	4820	4830	4470	4700	5650	5210	5370	5670	5070	5450
14	5190	4990	5110	4850	1870	4290	5630	5270	5420	5950	5570	5710
15	5440	4950	5310	2260	680	1550	5530	5260	5410	5900	5600	5780
16	5640	4890	5290	3030	2040	2490	5740	5410	5560	6110	5710	5900
17	5370	4310	5100	4760	3030	4180	5820	5250	5530	6130	5880	5970
18	4960	1800	3330	5220	4730	4950	5450	5210	5360	6250	5850	6000
19	4980	1900	3140	5190	4090	4430	5590	5260	5430	6250	5800	6020
20	3940	1660	1900	4690	4330	4440	5710	5040	5510	6090	5740	5920
21	2240	1780	2040	4710	4120	4350	5710	5380	5550	6230	5880	6120
22	2880	2230	2650	4510	4180	4370	5850	5330	5540	6190	5900	6010
23	3210	2710	2970	4800	4510	4680	5800	5360	5600	6130	5920	6020
24	3550	3210	3400	5120	4790	4930	5860	5060	5610	6080	5870	5960
25	3560	3490	3520	5270	4860	5090	5820	5150	5580	6050	5740	5900
26	3440	3270	3360	5240	4980	5170	5890	5170	5670	6230	5850	6000
27	3660	3290	3530	5730	5090	5360	5710	5080	5590	6220	5900	6070
28	3690	1030	2390	5730	5580	5650	5760	4730	5550	6220	5990	6070
29	3230	1500	2160	5670	5290	5410	5690	4820	5330	6010	5780	5870
30	4440	3230	3660	5310	4740	5190	5680	4820	5370	6020	5700	5820
31	---	---	---	5370	5170	5250	5740	5300	5560	---	---	---
MONTH	5640	1030	3960	5730	680	4230	5890	4730	5490	6250	4930	5770

e Estimated

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

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

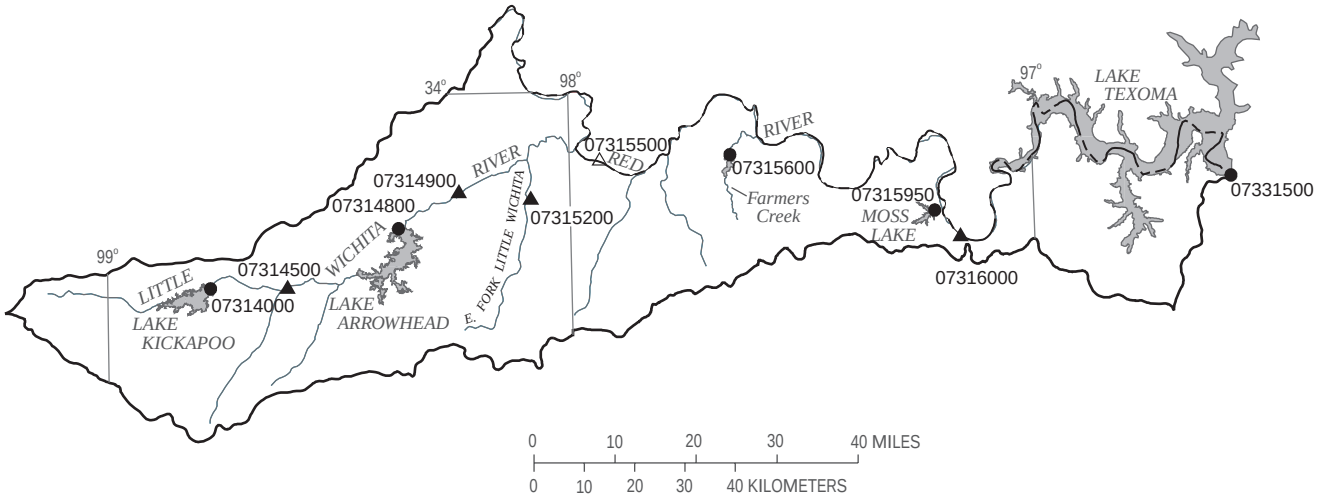
DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		OCTOBER			NOVEMBER			DECEMBER			JANUARY	
1	21.1	17.7	19.5	16.4	15.3	15.8	11.4	9.8	10.6	9.9	7.8	8.8
2	22.0	18.9	20.6	15.7	13.0	14.5	13.8	11.4	12.5	11.8	9.9	11.0
3	21.6	18.7	20.4	13.3	11.6	12.6	13.7	12.5	13.2	11.3	9.4	10.7
4	20.8	17.1	18.1	13.9	11.6	12.7	13.9	11.8	13.4	9.4	7.0	7.8
5	19.6	16.0	17.6	---	---	---	---	---	---	7.0	5.5	6.2
6	21.6	18.0	19.7	---	---	---	---	---	---	6.7	5.2	6.0
7	21.7	19.3	20.7	---	---	---	---	---	---	7.3	5.5	6.2
8	22.6	19.9	21.2	---	---	---	11.6	8.5	9.7	9.4	7.3	8.4
9	22.2	20.0	20.9	---	---	---	12.1	10.1	11.5	9.6	8.3	9.1
10	22.9	19.9	21.2	18.2	16.7	17.6	10.1	8.2	9.1	9.2	7.5	8.5
11	23.4	20.9	22.1	18.2	16.9	17.7	9.5	8.0	8.8	8.9	7.3	8.4
12	24.0	21.3	22.6	---	---	---	10.4	9.4	9.8	10.0	7.5	8.8
13	23.9	21.5	22.8	---	---	---	9.4	7.5	8.3	9.9	8.3	9.1
14	23.7	21.4	22.8	---	---	---	8.0	6.7	7.4	9.0	7.1	8.1
15	24.1	21.7	23.0	---	---	---	7.1	5.3	6.1	11.0	7.5	9.0
16	23.9	21.8	22.9	16.9	15.3	16.2	6.0	4.5	5.3	12.4	10.4	11.3
17	21.8	16.5	18.5	16.6	15.4	16.2	6.9	5.2	5.9	13.9	11.6	12.7
18	16.5	15.5	16.1	---	---	---	6.9	6.2	6.6	13.8	12.2	12.9
19	16.2	14.3	15.4	---	---	---	6.9	5.7	6.4	12.7	10.8	11.8
20	16.2	13.6	15.2	---	---	---	6.9	5.5	6.2	12.0	9.1	10.0
21	17.0	14.3	15.8	---	---	---	5.5	4.3	4.9	9.1	7.4	8.3
22	17.5	15.1	16.5	---	---	---	4.6	3.5	4.1	10.5	8.3	9.3
23	17.3	15.4	16.4	---	---	---	4.8	3.4	4.1	10.6	9.0	10.0
24	16.6	14.4	15.6	12.8	10.7	11.5	5.8	4.4	5.1	10.2	7.7	8.6
25	16.7	14.0	15.5	10.7	9.3	9.9	5.9	4.7	5.4	8.3	7.0	7.7
26	17.9	15.3	16.7	9.7	8.5	9.3	8.0	5.8	7.0	7.7	5.7	6.7
27	18.1	16.1	17.3	10.7	9.2	10.0	7.7	6.5	7.2	5.7	4.1	4.7
28	19.4	17.1	18.2	11.2	10.1	10.8	7.5	5.9	6.8	4.1	3.0	3.4
29	21.0	18.2	19.6	11.4	10.4	10.9	8.1	6.6	7.4	4.4	2.3	3.4
30	20.7	16.5	18.5	10.8	10.0	10.5	9.4	8.0	8.6	5.2	2.5	3.8
31	16.5	15.4	16.0	---	---	---	9.0	7.9	8.4	6.9	4.0	5.3
MONTH	24.1	13.6	18.9	---	---	---	---	---	---	13.9	2.3	8.3

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		FEBRUARY			MARCH			APRIL			MAY	
1	8.3	6.7	7.5	15.9	13.9	15.2	16.4	13.8	15.0	22.3	20.4	21.4
2	8.3	6.7	7.6	15.7	14.5	15.2	16.1	13.1	14.4	21.6	18.8	19.5
3	9.5	7.3	8.4	15.5	12.1	13.2	15.8	14.1	14.9	20.5	17.6	18.9
4	9.4	7.9	8.7	13.3	10.1	11.8	16.6	12.0	14.3	23.6	19.1	21.0
5	8.6	6.7	7.6	14.2	11.6	13.1	---	---	---	23.7	21.6	22.5
6	9.1	6.8	8.0	17.7	13.9	15.6	---	---	---	27.4	22.3	24.5
7	10.6	8.4	9.5	18.4	17.5	18.0	---	---	---	29.5	24.7	26.9
8	11.3	9.4	10.5	18.2	16.1	17.4	21.5	16.8	18.8	29.5	25.9	27.7
9	13.3	10.5	11.8	17.5	14.8	16.4	19.0	15.8	17.6	28.5	25.1	26.7
10	14.5	12.6	13.7	16.7	13.2	14.7	20.5	16.8	18.6	27.0	23.0	25.1
11	14.3	11.9	13.0	13.2	10.5	12.2	20.6	18.1	19.6	29.4	24.8	27.0
12	11.9	9.8	11.0	13.7	10.6	12.5	18.1	14.4	16.1	29.1	26.5	28.0
13	12.8	11.2	11.9	15.4	12.2	13.9	17.5	14.3	15.6	28.0	23.4	25.2
14	11.9	10.3	11.2	16.8	15.1	15.9	20.2	16.0	17.7	24.8	21.0	23.1
15	13.2	10.5	11.8	18.9	15.6	17.2	20.9	18.5	19.7	25.3	21.2	23.3
16	13.5	12.5	13.1	18.6	12.9	16.3	20.1	17.3	18.8	26.1	23.4	24.8
17	---	---	---	12.9	10.4	11.2	19.3	16.9	18.0	25.8	24.0	24.7
18	---	---	---	10.7	9.5	10.1	24.0	18.0	20.5	26.5	23.3	24.8
19	13.7	10.5	11.8	13.8	9.0	11.2	25.9	22.1	24.0	25.5	21.1	22.4
20	12.4	10.3	11.4	16.0	11.3	13.6	25.6	21.4	23.3	24.4	19.2	21.4
21	14.0	11.8	12.8	15.7	14.1	14.6	23.6	20.0	22.0	27.2	22.1	24.5
22	15.2	14.0	14.6	---	---	---	22.8	19.7	20.8	29.2	24.8	26.9
23	16.8	13.7	15.1	---	---	---	21.7	18.7	20.3	30.4	25.9	28.2
24	17.2	13.8	15.4	---	---	---	23.4	19.7	21.7	31.4	26.9	29.1
25	17.9	16.2	17.1	---	---	---	24.2	21.1	22.8	30.8	28.0	29.5
26	17.2	15.1	16.0	---	---	---	24.0	21.0	22.7	30.2	27.0	28.8
27	15.1	12.3	14.0	---	---	---	23.6	21.9	22.8	29.2	26.9	28.2
28	15.2	12.7	14.2	---	---	---	23.4	20.2	22.0	28.1	25.1	26.5
29	16.3	13.9	15.2	21.0	18.9	19.9	23.2	21.0	22.3	30.4	25.5	27.5
30	---	---	---	18.9	16.7	17.4	22.6	20.7	21.7	31.6	27.1	29.2
31	---	---	---	16.8	14.8	16.0	---	---	---	31.4	27.9	29.7
MONTH	---	---	---	---	---	---	---	---	---	31.6	17.6	25.4

07312700 WICHITA RIVER NEAR CHARLIE, TX--Continued

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

DAY	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
		JUNE			JULY			AUGUST			SEPTEMBER	
1	31.1	27.4	29.4	27.6	26.6	26.8	---	---	---	30.0	26.7	28.5
2	30.5	27.4	28.3	29.4	25.9	27.3	31.7	28.6	30.2	30.6	27.3	29.1
3	27.4	25.6	26.5	29.1	27.1	28.0	32.2	28.5	30.4	30.8	27.8	29.5
4	26.6	25.0	25.7	31.6	27.0	29.1	32.7	29.4	31.1	31.0	27.8	29.6
5	27.5	24.3	25.8	32.2	28.2	30.2	32.7	29.1	31.1	30.8	28.0	29.3
6	27.9	23.9	25.8	33.2	28.8	31.1	32.9	29.2	31.2	29.5	26.8	28.2
7	28.4	24.1	26.2	33.3	29.5	31.7	33.1	29.3	31.3	28.7	25.7	27.5
8	28.6	24.3	26.5	33.8	29.9	32.0	32.6	29.2	31.1	28.4	25.7	27.3
9	28.0	25.9	26.8	34.1	30.1	32.2	32.0	28.9	30.2	28.7	25.6	27.3
10	27.1	25.4	26.2	34.2	30.1	32.3	31.8	28.4	30.2	29.5	26.2	28.0
11	27.1	25.0	26.0	34.6	30.7	32.8	32.3	28.5	30.6	29.5	27.0	28.5
12	28.7	25.4	26.8	34.5	30.8	32.8	32.1	28.7	30.7	29.2	26.9	28.2
13	30.3	26.1	28.1	33.7	31.2	32.6	32.4	29.4	31.0	28.9	26.3	27.8
14	29.1	26.4	27.0	34.0	30.8	32.2	31.4	27.8	29.7	29.5	26.1	27.9
15	29.2	24.0	26.4	35.3	30.3	32.5	31.5	27.5	29.6	29.2	26.1	27.3
16	29.7	26.6	28.1	34.6	31.9	33.3	32.0	28.4	30.3	26.8	23.6	25.3
17	29.0	24.5	25.9	33.6	30.9	32.4	32.1	28.7	30.6	25.7	23.0	24.6
18	24.5	23.1	23.5	33.4	30.1	31.7	31.9	28.5	30.4	25.1	22.1	23.8
19	24.9	22.9	23.7	34.3	29.9	32.1	31.6	28.5	30.2	25.2	22.2	24.0
20	26.0	23.5	24.7	34.5	30.9	32.8	30.8	27.3	29.3	25.2	23.0	24.2
21	27.1	25.5	26.2	33.3	29.9	31.9	30.6	27.2	29.1	25.0	21.4	23.3
22	27.8	25.2	26.5	32.3	28.8	30.3	30.5	27.4	29.1	27.8	23.6	25.5
23	30.0	26.1	27.9	31.5	27.8	29.8	30.6	27.5	29.2	27.8	25.9	26.9
24	31.5	27.3	29.3	32.2	27.9	30.2	30.9	27.5	29.2	26.4	20.0	22.7
25	32.0	28.0	30.1	31.6	28.1	29.9	31.1	27.8	29.5	20.0	16.8	18.3
26	31.2	28.1	29.0	32.6	28.0	30.3	31.1	27.9	29.6	19.4	15.8	17.7
27	28.9	26.9	27.9	32.3	29.5	30.5	30.6	27.9	29.4	20.4	16.6	18.6
28	28.5	26.4	27.1	31.6	28.2	29.9	30.4	27.4	29.1	21.3	18.0	19.8
29	26.4	25.1	25.9	32.1	28.8	30.5	30.0	27.0	28.8	21.8	18.9	20.5
30	27.9	24.8	26.2	---	---	---	---	---	---	22.0	19.3	20.8
31	---	---	---	---	---	---	---	---	---	---	---	---
MONTH	32.0	22.9	26.8	---	---	---	---	---	---	31.0	15.8	25.3



EXPLANATION

07315200 ▲ **Surface-water continuous station and number**

07316000 △ **Surface-water continuous/water-quality station and number**

07314800 ● **Reservoir station and number**

Figure 6.-- Map showing location of gaging stations in the third section of the Red River Basin

07314000 Lake Kickapoo near Archer City, TX 202
07314500 Little Wichita River near Archer City, TX 204
07314800 Lake Arrowhead near Henrietta, TX 206
07314900 Little Wichita River above Henrietta, TX 208
07315200 East Fork Little Wichita River near Henrietta, TX 210
07315500 Red River near Terral, OK 212
07315600 Lake Nocona near Nocona, TX 216
07315950 Moss Lake near Gainesville, TX 218
07316000 Red River near Gainesville, TX 220
07331500 Lake Texoma near Denison, TX 222

07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39′47", long 98°46′43", Archer County, Hydrologic Unit 11130209, on intake tower near left end of dam on North Fork Little Wichita River, 8.2 mi south of Mankins, and 9.2 mi northwest of Archer City.

DRAINAGE AREA.--275 mi^2

PERIOD OF RECORD.--Feb 1946 to current year. Prior to Oct 1965, end of month contents only.
Water-quality records.--Chemical data: Oct 1969 to Sep 1984.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by city of Wichita Falls). Prior to Oct 8, 1946, water-stage recorder at same site and datum. Non-recording gage read twice daily Oct 8, 1946 to Feb 17, 1974, once daily Feb 18, 1974 to Mar 3, 1999, continuous recording gage Mar 4, 1999, to current year. Satellite telemeter at station.

REMARKS.--Records good, except those for estimated daily contents, which are fair. The lake is formed by a rolled earthfill dam 8,200 ft long, including a 483-foot-wide reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Dec 15, 1945, and storage began Feb 1, 1946. The service outlet consists of two gate-controlled 4- by 5-foot conduits. The dam and lake are owned by the city of Wichita Falls, which uses the water for their municipal supply. The capacity table is based on U.S. Geological Survey topographic maps, dated 1929. The capacity curve, dated Nov 1946, was entitled "Lake Kickapoo Area & Capacity Curve". Conservation pool storage is 106,000 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	1,062.00
Design flood (2-foot freeboard)	1,060.00
Crest of spillway (top of conservation pool)	1,045.00
Lowest gated outlet (invert)	1,000.92

COOPERATION.--Capacity curve and diversions for municipal use are provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 134,300 acre-ft, Aug 2, 1950, elevation, 1,049.2 ft; minimum observed since first filling in Jul 1950, 35,660 acre-ft, Jun 30, 1953, elevation, 1,029.8 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 57,110 acre-ft, Oct 1, elevation, 1,035.86 ft; minimum contents, 38,740 acre-ft, Sep 30, elevation, 1,030.85 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

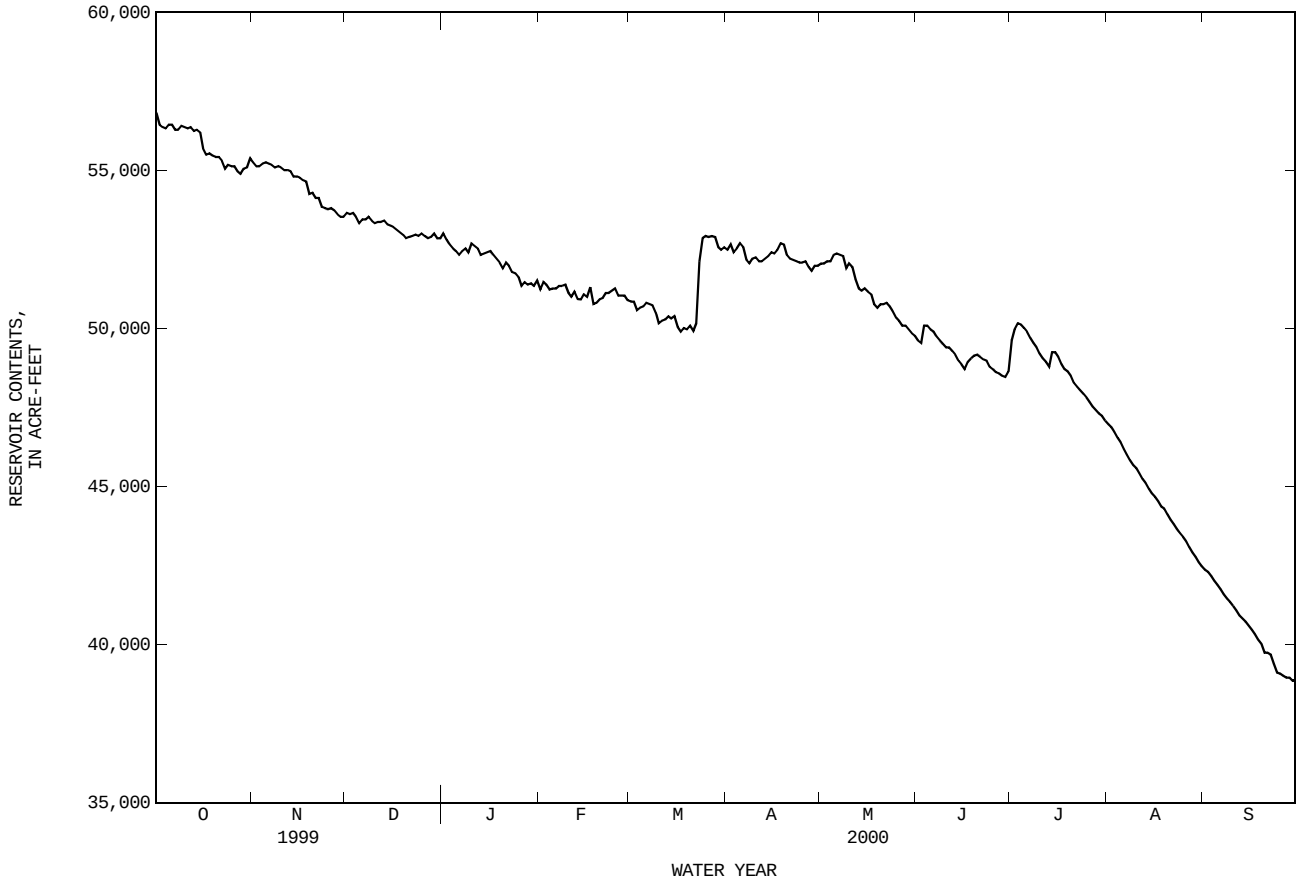
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	56810	55240	53640	53000	51230	50840	52480	52040	49620	49620	46970	42360
2	56440	55120	53600	52800	51460	50840	52640	52040	49540	49960	46860	42290
3	56360	55120	53640	52640	51380	50570	52400	52120	50080	50150	46720	42160
4	56310	55200	53520	52520	51230	50650	52520	52120	50080	50110	46540	42020
5	56440	55240	53320	52440	51260	50690	52680	52320	49960	50000	46390	41890
6	56440	55200	53440	52320	51260	50800	52560	52360	49890	49890	46180	41750
7	56270	55160	53440	52440	51340	50760	52160	52320	49740	49700	46000	41580
8	56270	55080	53520	52520	51340	50720	52040	52280	49620	49540	45820	41450
9	56400	55120	53400	52400	51380	50490	52200	51890	49510	e49390	45670	41350
10	56360	55080	53320	52680	51110	50150	52240	52040	49390	e49200	45570	41220
11	56310	55000	53360	52600	50990	50230	52120	51930	49390	e49050	45420	41080
12	56360	55000	53360	52520	51150	50270	52120	51540	49280	48940	45240	40920
13	56230	54960	53400	52320	50920	50380	52200	51260	49160	48790	45100	40820
14	56270	54800	53280	52360	50910	50300	52280	51190	48970	49240	44920	40720
15	56190	54800	53240	52400	51070	50380	52400	51260	48860	49240	44780	40590
16	55690	54760	53200	52440	50990	50040	52360	51150	48710	49090	44670	40460
17	55490	54680	53120	52320	51300	49890	52480	51070	48940	48860	44530	40330
18	55530	54640	53040	52200	50760	50000	52680	50760	49050	48710	44360	40160
19	55450	54240	52960	52080	50800	49960	52640	50650	49130	48640	44290	40030
20	55410	54280	52840	51890	50910	50080	52320	50760	49160	48490	44110	39740
21	55410	54120	52880	52080	50950	49920	52200	50760	49090	48260	43940	39740
22	55290	54120	52920	51970	51110	50150	52160	50800	49010	48150	43800	39680
23	55040	53840	52960	51770	51110	52120	52120	50690	48970	48040	43660	39390
24	55160	53800	52920	51730	51190	52840	52080	50530	48790	47930	43520	39110
25	55120	53760	53000	51610	51260	52920	52080	50340	48710	47810	43390	39080
26	55120	53800	52920	51340	51030	52880	52120	50230	48600	47670	43250	39010
27	54960	53720	52840	51460	51030	52920	51930	50080	48560	47520	43080	38950
28	54880	53600	52880	51380	51030	52880	51810	50080	48490	47410	42910	38950
29	55040	53520	53000	51420	50880	52560	51970	49960	48450	47300	42770	38860
30	55080	53520	52840	51340	---	52480	51970	49850	48640	47230	42600	38860
31	55370	---	52840	51500	---	52560	---	49770	---	47080	42470	---
MAX	56810	55240	53640	53000	51460	52920	52680	52360	50080	50150	46970	42360
MIN	54880	53520	52840	51340	50760	49890	51810	49770	48450	47080	42470	38860
(+)	1035.44	1034.98	1034.80	1034.45	1034.36	1034.83	1034.67	1034.09	1033.75	1033.34	1032.04	1030.87
(@)	-1440	-1850	-680	-1340	-620	+1680	-590	-2200	-1130	-1560	-4610	-3610
(++)	708	492	203	640	254	110	121	426	629	816	1462	1120

CAL YR 1999 MAX 70310 MIN 51420 (@) 950 (++) 6324
WTR YR 2000 MAX 57110 MIN 38740 (@) -17950 (++) 6981

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet.

07314000 LAKE KICKAPOO NEAR ARCHER CITY, TX--Continued



07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX

LOCATION.--Lat 33°39′45", long 98°36′46", Archer County, Hydrologic Unit 11130209, on left bank at downstream side of bridge on State Highway 79, 1.5 mi downstream from confluence of North and Middle Forks, and 4.8 mi north of Archer City.

DRAINAGE AREA.--481 mi^2, of which 275 mi^2 is above Lake Kickapoo.

PERIOD OF RECORD.--May 1932 to Jan 1956, Aug 1966 to current year.
Water-quality records.--Chemical data: Jan 1953 to Jan 1956. Sediment data: May 1968 to Sep 1975. Water temperature: Jan 1953 to Jan 1956.

REVISED RECORDS.--WSP 827: 1932-35. WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 934.72 ft above sea level. Aug 17, 1954, to Jan 6, 1956, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Since water year 1946, at least 10% of contributing drainage area has been regulated by Lake Kickapoo (station 07314000, conservation pool storage 106,000 acre-ft) on North Fork Little Wichita River. Records furnished by the city of Wichita Falls show that 6,977 acre-ft was diverted from Lake Kickapoo for municipal use and wholesale customers during the current year. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1933-45) 110 ft^3/s (79,700 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1933-45).--Maximum discharge, 17,900 ft^3/s Oct 31, 1941 (gage height, 21.80 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jun 1930 reached a stage of about 28 ft, from information by Texas Department of Transportation.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	31	.00	.00	.00	.83	.68	185	.00	46	.00	.00
2	.00	9.3	.00	.00	.00	.73	1.6	480	.00	512	.00	.00
3	.00	2.9	.00	.00	.00	.58	1.6	62	.12	364	.00	.00
4	.00	1.5	.00	.00	.00	.47	1.5	5.5	1.8	18	.00	.00
5	.00	1.4	.00	.00	.00	.78	1.2	e3.1	6.6	5.4	.00	.00
6	.00	.89	.00	.00	.00	1.4	.78	1.9	3.1	2.8	.00	.00
7	.00	.67	.00	.00	.00	.85	.59	1.8	1.4	1.9	.00	.00
8	.01	.52	.00	.00	.00	.90	.46	1.4	.87	1.1	.00	.00
9	.01	.40	.00	.00	.00	.95	.48	1.0	.60	.74	.00	.00
10	.00	.33	.00	.00	.00	.76	.42	.79	.51	.55	.00	.00
11	.00	.27	.00	.00	.00	2.2	.49	.67	.42	.47	.00	.00
12	.00	.22	.75	.00	.00	2.9	.96	.52	.17	.60	.00	.00
13	.00	.19	.55	.00	.00	4.2	26	.43	.01	.62	.00	.00
14	.00	.10	.41	.00	.00	4.2	8.3	.42	.03	3.4	.00	.00
15	.00	.07	.21	.00	.00	3.0	3.7	.39	.02	12	.00	.00
16	.00	.04	.17	.00	.00	2.7	5.5	.40	e.38	3.2	.00	.00
17	.00	.02	.14	.00	.00	3.2	25	.49	.98	1.6	.00	.00
18	.00	.01	.06	.00	.00	2.6	9.6	.46	e11	1.4	.00	.00
19	.00	.00	.08	.00	.00	2.5	3.8	.44	e10	.83	.00	.00
20	.00	.00	.05	.00	.00	3.2	2.8	.46	e5.5	.59	.00	.00
21	.00	.00	.04	.00	.00	3.3	1.7	.40	e2.7	.45	.00	.00
22	.00	.00	.04	.00	.00	3.3	1.0	.17	1.9	.47	.00	.00
23	.00	.00	.03	.00	.00	22	.68	.02	1.3	.49	.00	.00
24	.00	.00	.03	.00	.00	164	.52	.00	.77	.42	.00	.00
25	.00	.00	.00	.00	.05	27	.39	.00	.60	.38	.00	.00
26	.00	.00	.00	.00	1.1	6.7	.34	e.85	.56	.38	.00	.00
27	.00	.00	.00	.00	3.7	2.9	.35	e.61	.52	.33	.00	.00
28	.00	.00	.03	.00	1.1	1.9	.40	e.28	.56	.19	.00	.00
29	.00	.00	.01	.00	.93	1.5	.52	e.02	.50	.04	.00	.00
30	.08	.00	.01	.00	---	.84	.51	.00	.58	.00	.00	.00
31	2.5	---	.00	.00	---	.65	---	.00	---	.00	.00	---
TOTAL	2.60	49.83	2.61	0.00	6.88	273.04	101.87	749.52	53.50	980.35	0.00	0.00
MEAN	.084	1.66	.084	.000	.24	8.81	3.40	24.2	1.78	31.6	.000	.000
MAX	2.5	31	.75	.00	3.7	164	26	480	11	512	.00	.00
MIN	.00	.00	.00	.00	.00	.47	.34	.00	.00	.00	.00	.00
AC-FT	5.2	99	5.2	.00	14	542	202	1490	106	1940	.00	.00

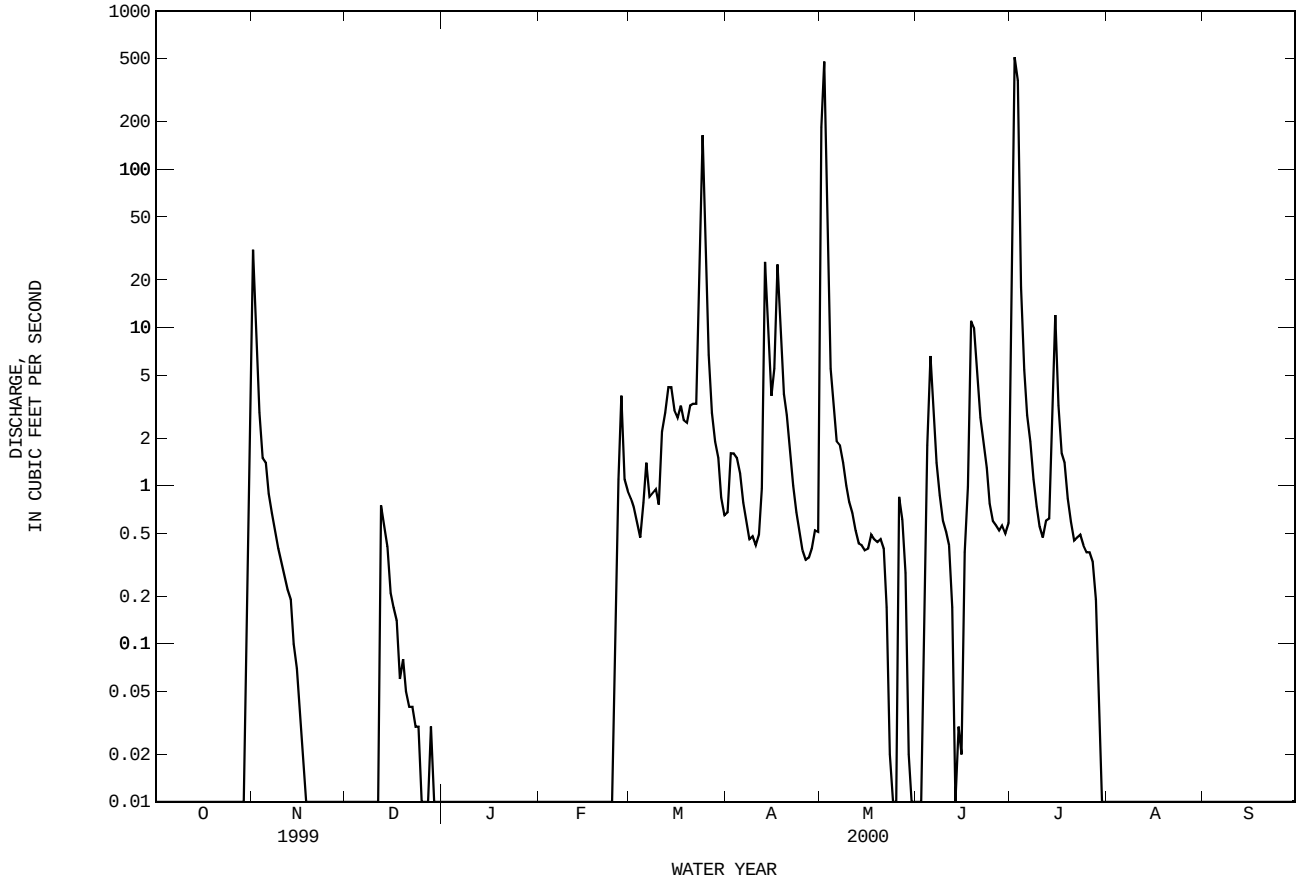
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2000hz, BY WATER YEAR (WY)

MEAN	52.9	15.1	21.2	13.7	22.9	43.0	38.6	150	113	22.5	43.0	62.9
MAX	771	160	194	154	176	309	637	1224	944	282	1337	624
(WY)	1982	1987	1992	1990	1993	1990	1990	1982	1985	1950	1950	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1953	1946	1946	1953	1947	1950	1971	1984	1953	1974	1967	1954

07314500 LITTLE WICHITA RIVER NEAR ARCHER CITY, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1946 - 2000hz	
ANNUAL TOTAL	6139.73		2220.20			
ANNUAL MEAN	16.8		6.07		49.5	
HIGHEST ANNUAL MEAN					252	1990
LOWEST ANNUAL MEAN					2.27	1996
HIGHEST DAILY MEAN	1500	Mar 20	512	Jul 2	9550	Aug 2 1950
LOWEST DAILY MEAN	.00	Jan 28	.00	Oct 1	.00	Oct 31 1945
ANNUAL SEVEN-DAY MINIMUM	.00	May 17	.00	Oct 1	.00	Oct 31 1945
INSTANTANEOUS PEAK FLOW			626	Jul 3	20100	May 16 1989
INSTANTANEOUS PEAK STAGE			14.86	Jul 3	27.03	May 16 1989
ANNUAL RUNOFF (AC-FT)	12180		4400		35860	
10 PERCENT EXCEEDS	8.3		3.1		56	
50 PERCENT EXCEEDS	.09		.01		.29	
90 PERCENT EXCEEDS	.00		.00		.00	

e Estimated
h See PERIOD OF RECORD paragraph.
z Period of regulated streamflow.



07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX

LOCATION.--Lat 33°45′51", long 98°22′17", Clay County, Hydrologic Unit 11130209, at intake tower near center of dam on Little Wichita River, 2.3 mi upstream from Lake Creek, 11 mi southwest of Henrietta, and 12.3 mi southeast of Wichita Falls.

DRAINAGE AREA.--822 mi^2.

PERIOD OF RECORD.--Jun 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 0.40 ft below sea level. Satellite telemeter at station.

REMARKS.--Records fair. The lake is formed by a rolled earthfill dam 15,900 ft long, including an uncontrolled reinforced concrete ogee spillway 1,581 ft wide located near the left end of dam. The dam was completed in Dec 1966 and storage began in Jun 1967. The service outlet works, located in a cylindrical service tower at upstream side of dam, consist of two gated 5-foot-diameter inlets that can be used for controlled releases. The dam was built by the city of Wichita Falls to impound water for municipal, industrial, and recreational uses. The area-capacity curves are based on U.S. Geological Survey topographic maps. Conservation pool storage is 262,100 acre-ft. Data regarding the dam are given in the following table:

	Gage height (feet)
Top of dam	944.40
Design flood	939.95
Crest of spillway (top of conservation pool)	926.40
Lowest gated outlet (invert)	874.10

COOPERATION.--Capacity table provided by Homer Hunter and Associates and Biggs and Mathews, Consulting Engineers, for the city of Wichita Falls. Area-capacity curves provided by Homer Hunter and Associates. Record of diversions provided by the city of Wichita Falls.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 287,500 acre-ft, May 4, 1990, gage height, 927.92 ft; minimum contents after initial filling, 74,600 acre-ft, Aug 11, 1971, gage height, 909.63 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 144,900 acre-ft, Oct 1, elevation, 917.72 ft; minimum contents, 91,350 acre-ft, Sep 30, elevation, 911.94 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

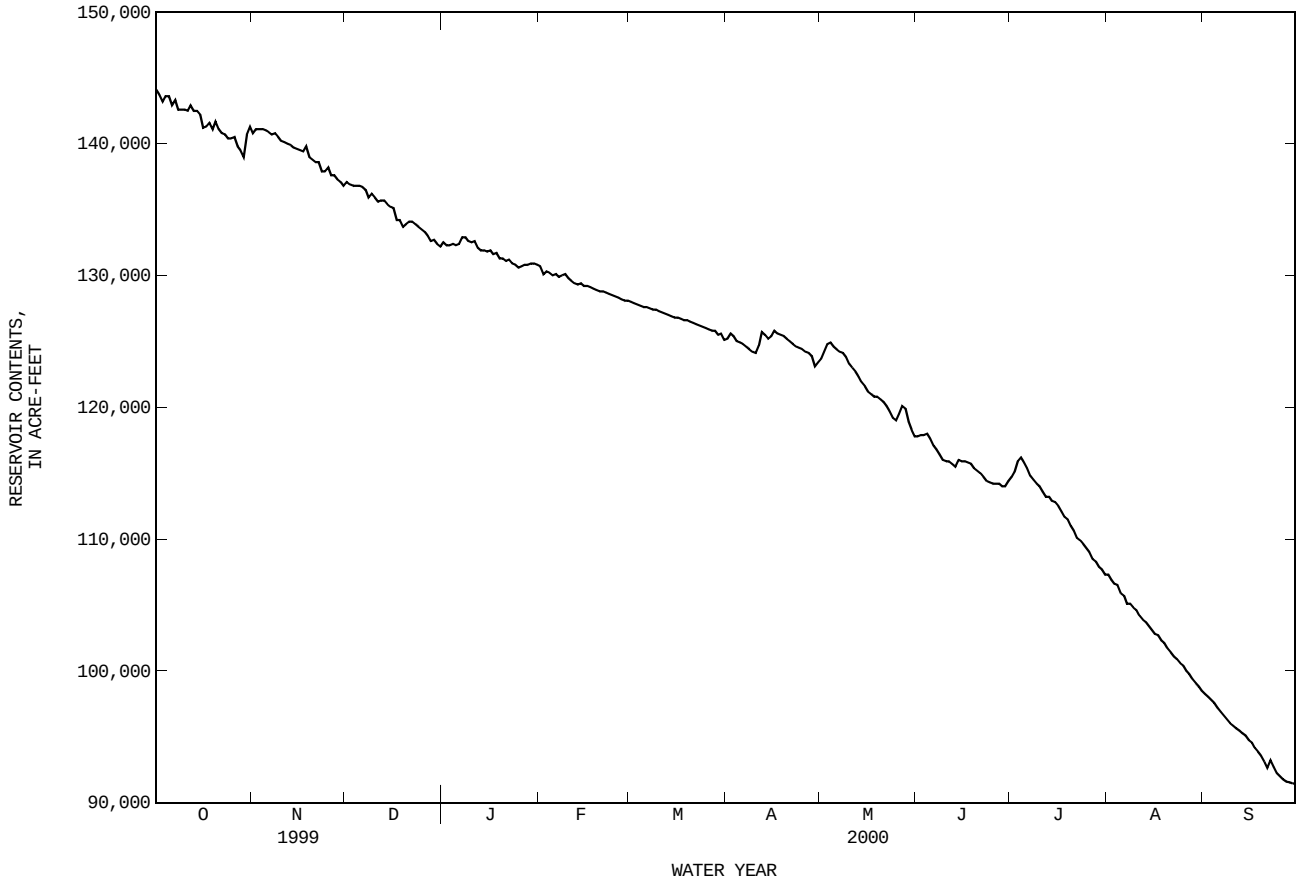
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	144100	140800	137100	132500	130700	e128000	125200	123700	117800	114700	107300	98240
2	143700	141100	136900	132300	130100	e127900	125600	124200	117900	115100	106900	98030
3	143200	141100	136800	132300	130300	e127800	125400	124800	117900	115900	106600	97790
4	143600	141100	136800	132400	130200	e127700	125000	124900	118000	116200	106500	97570
5	143600	141000	136800	132300	130000	e127600	124900	124600	117600	115800	105900	97200
6	142900	140900	136700	132400	130100	e127600	124800	124400	117100	115400	105700	96900
7	143300	140700	136500	132900	129900	e127500	124600	124200	116800	114800	105100	96590
8	142600	140800	135900	132900	130000	e127400	124400	124100	116400	114500	105100	96310
9	142600	140500	136200	132600	130100	e127400	124200	123800	116000	114200	104800	96040
10	142600	140200	135900	132500	129800	e127300	124100	123300	115900	114000	104600	95840
11	142500	140100	135600	132600	129600	e127200	124700	123000	115900	113600	104200	95630
12	142900	140000	135700	132100	129400	e127100	125700	122700	115700	113200	103900	95450
13	142500	139900	135700	131900	129300	e127000	125500	122300	115500	113200	103700	95270
14	142500	139700	135400	131900	129400	e126900	125200	121900	116000	112900	103400	95100
15	142200	139600	135200	131800	129200	e126800	125400	121600	115900	112800	103100	94750
16	141200	139500	135100	131900	e129200	e126800	125800	121200	115900	112500	102800	94560
17	141300	139400	134200	131600	e129100	e126700	125600	121000	115800	112100	102700	94150
18	141600	139800	134200	131700	e129000	e126600	125500	120800	115700	111700	102300	93860
19	141100	139000	133700	131300	e128900	e126600	125400	120800	115400	111500	102100	93540
20	141700	138800	133900	131300	e128800	e126500	125200	120600	115200	111000	101700	93090
21	141100	138600	134100	131100	e128800	e126400	125000	120400	115000	110600	101400	92650
22	140800	138600	134100	131200	e128700	e126300	124800	120100	114700	110100	101100	93210
23	140700	137900	133900	130900	e128600	e126200	124600	119700	114400	109900	100900	92700
24	140400	137900	133700	130800	e128500	e126100	124500	119200	114300	109600	100600	92230
25	140400	138200	e133500	130600	e128400	e126000	124400	119000	114200	109300	100400	92000
26	140500	137600	e133300	130700	e128300	e125900	124200	119500	114200	109000	100000	91760
27	139800	137600	e133000	e130800	e128200	e125800	124100	120100	114200	108500	99760	91590
28	139500	137300	132600	e130800	e128100	125800	123900	119900	114000	108300	99370	91550
29	139000	137100	132700	e130900	e128100	125500	123100	118900	114000	107900	99070	91470
30	140700	136800	132400	130900	---	125600	123400	118300	114400	107700	98800	91380
31	141300	---	132200	130800	---	125100	---	117800	---	107300	98500	---
MAX	144100	141100	137100	132900	130700	128000	125800	124900	118000	116200	107300	98240
MIN	139000	136800	132200	130600	128100	125100	123100	117800	114000	107300	98500	91380
(+)	917.39	916.96	916.51	916.37	916.10	915.80	915.62	915.03	914.66	913.87	912.83	911.95
(@)	-3500	-4500	-4600	-1400	-2700	-3000	-1700	-5600	-3400	-7100	-8800	-7040
(++)	1720	1327	2036	1196	1644	1607	1853	2477	1761	1960	1957	1284

CAL YR 1999 MAX 181600 MIN 132200 (@) -41600 (++) 23683
WTR YR 2000 MAX 144900 MIN 91460 (@) -53340 (++) 20823

e Estimated

(+) Gage height, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the City of Wichita Falls, and for wholesale customer use.

07314800 LAKE ARROWHEAD NEAR HENRIETTA, TX--Continued



07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX

LOCATION.--Lat 33°49′36", long 98°14′23", Clay County, Hydrologic Unit 11130209, on right bank at downstream side of bridge on U.S. Highways 822 and 287, 1.0 mi downstream from Duck Creek, 2.8 mi west of Henrietta, 6.6 mi upstream from Turkey Creek, and 7.6 mi upstream from Dry Fork Little Wichita River.

DRAINAGE AREA.--1,037 mi^2.

PERIOD OF RECORD.--Jan 1953 to current year. Prior to Oct 1974, published as "near Henrietta".
Water-quality records.--Chemical data: Dec 1952 to Jan 1956, Nov 1959 to Sep 1966, Jan 1968 to Sep 1985. Dissolved oxygen: Aug 1999 to Sep 1999.

REVISED RECORDS.--WDR TX-93-1: Daily discharge.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 831.57 ft above sea level. Prior to Jun 26, 1953, nonrecording gage at site 2.6 mi downstream at same datum. Prior to Jul 11, 1975, at site 2.6 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records fair. Since water year 1967, at least 10% of contributing drainage area has been regulated by Lake Arrowhead (station 07314800, conservation pool storage 262,100 acre-feet), 39 mi upstream. The city of Wichita Falls diverted 6,977 acre-ft from Lake Kickapoo and 20,815 acre-ft from Lake Arrowhead for municipal uses. The city returned 12,712 acre-ft of wastewater effluent/filter-plant wash water to the river below Wichita River at Wichita Falls (station 07312500) and above Wichita River near Charlie (station 07312700). The city of Henrietta diverted 582 acre-ft from pool at gage for municipal use. Records of diversions were furnished by the cities of Wichita Falls and Henrietta. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--13 years (water years 1954-66) prior to completion of Lake Arrowhead, 124 ft^3/s (89,840 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1954-66).--Maximum discharge, 6,390 ft^3/s May 2, 1957; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 21 ft at former site, from information by Texas Department of Transportation.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.2	.00	.00	.00	.00	.00	11	4.9	.00	.00	.00
2	.00	.13	.00	.00	.00	.00	.00	12	.84	4.6	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	13	.81	12	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	12	.66	12	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	3.6	.09	14	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	1.2	.00	15	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.16	.00	11	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.3	.00	.00
9	.00	.00	11	.00	.00	.00	.00	.00	.00	.21	.00	.00
10	.00	.00	15	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	18	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	18	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	16	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	17	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	13	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	4.1	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	1.3	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	1.9	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.86	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	3.1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	5.3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	6.9	.00	.00	.00	.00	.00	.00	5.3	.00	.00	.00	.00
30	12	.00	.00	.00	---	.00	4.1	7.6	.00	.00	.00	.00
31	5.5	---	.00	.00	---	.00	---	7.7	---	.00	.00	---
TOTAL	32.80	1.33	113.66	0.00	2.81	0.00	4.10	73.56	7.30	71.11	0.00	0.00
MEAN	1.06	.044	3.67	.000	.097	.000	.14	2.37	.24	2.29	.000	.000
MAX	12	1.2	18	.00	1.9	.00	4.1	13	4.9	15	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	65	2.6	225	.00	5.6	.00	8.1	146	14	141	.00	.00

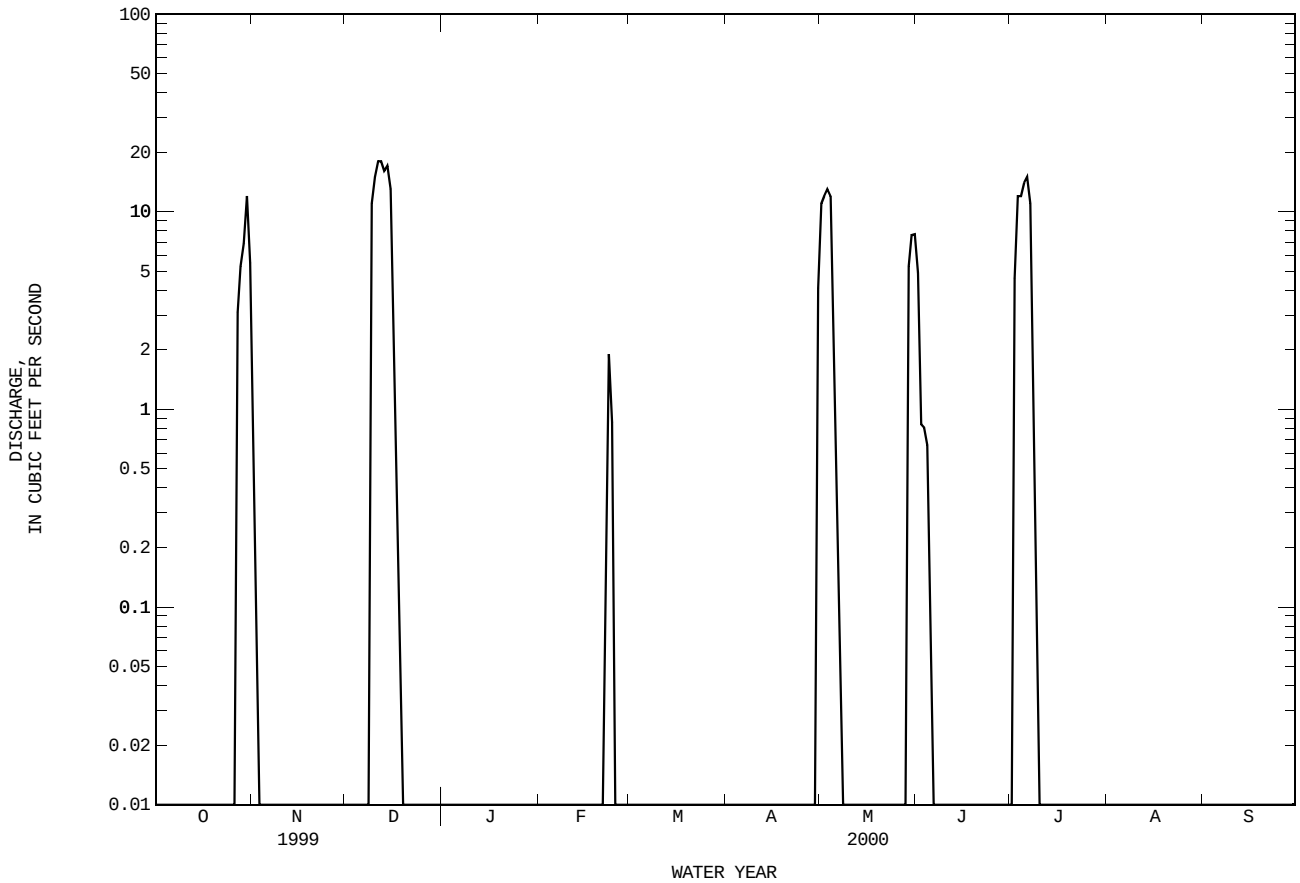
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2000z, BY WATER YEAR (WY)

MEAN	27.3	12.7	22.3	14.6	30.3	84.4	80.8	207	192	28.6	5.12	47.8
MAX	329	141	251	131	275	937	2169	2272	1652	549	76.6	549
(WY)	1982	1987	1992	1992	1987	1990	1990	1982	1992	1992	1995	1989
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1968	1967	1967	1967	1967	1967	1971	1971	1977	1968	1967	1967

07314900 LITTLE WICHITA RIVER ABOVE HENRIETTA, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1967 - 2000z	
ANNUAL TOTAL	1011.13		306.67			
ANNUAL MEAN	2.77		.84		62.8	
HIGHEST ANNUAL MEAN					498	1990
LOWEST ANNUAL MEAN					.84	2000
HIGHEST DAILY MEAN	154	Mar 20	18	Dec 11	10500	May 3 1990
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Oct 16 1966
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Oct 19 1966
INSTANTANEOUS PEAK FLOW			18	Dec 11	14200	May 3 1990
INSTANTANEOUS PEAK STAGE			7.92	Dec 11	24.96	May 3 1990
ANNUAL RUNOFF (AC-FT)	2010		608		45470	
10 PERCENT EXCEEDS	4.3		.82		43	
50 PERCENT EXCEEDS	.00		.00		.00	
90 PERCENT EXCEEDS	.00		.00		.00	

z Period of regulated streamflow.



07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX

LOCATION.--Lat 33°48′46", long 98°05′05", Clay County, Hydrologic Unit 11130209, at downstream side of bridge on U.S. Highway 82, 5.8 mi upstream from Little Wichita River, 6.4 mi east of Henrietta, and 8.9 mi west of Ringgold.

DRAINAGE AREA.--178 mi^2.

PERIOD OF RECORD.--Nov 1963 to current year.

REVISED RECORDS.--WRD TX-72-1: 1966(M).

GAGE.--Water-stage recorder. Datum of gage is 825.32 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Oct 1941 reached a stage of 28.8 ft, from information by local residents.

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

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

No peak greater than base discharge.

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

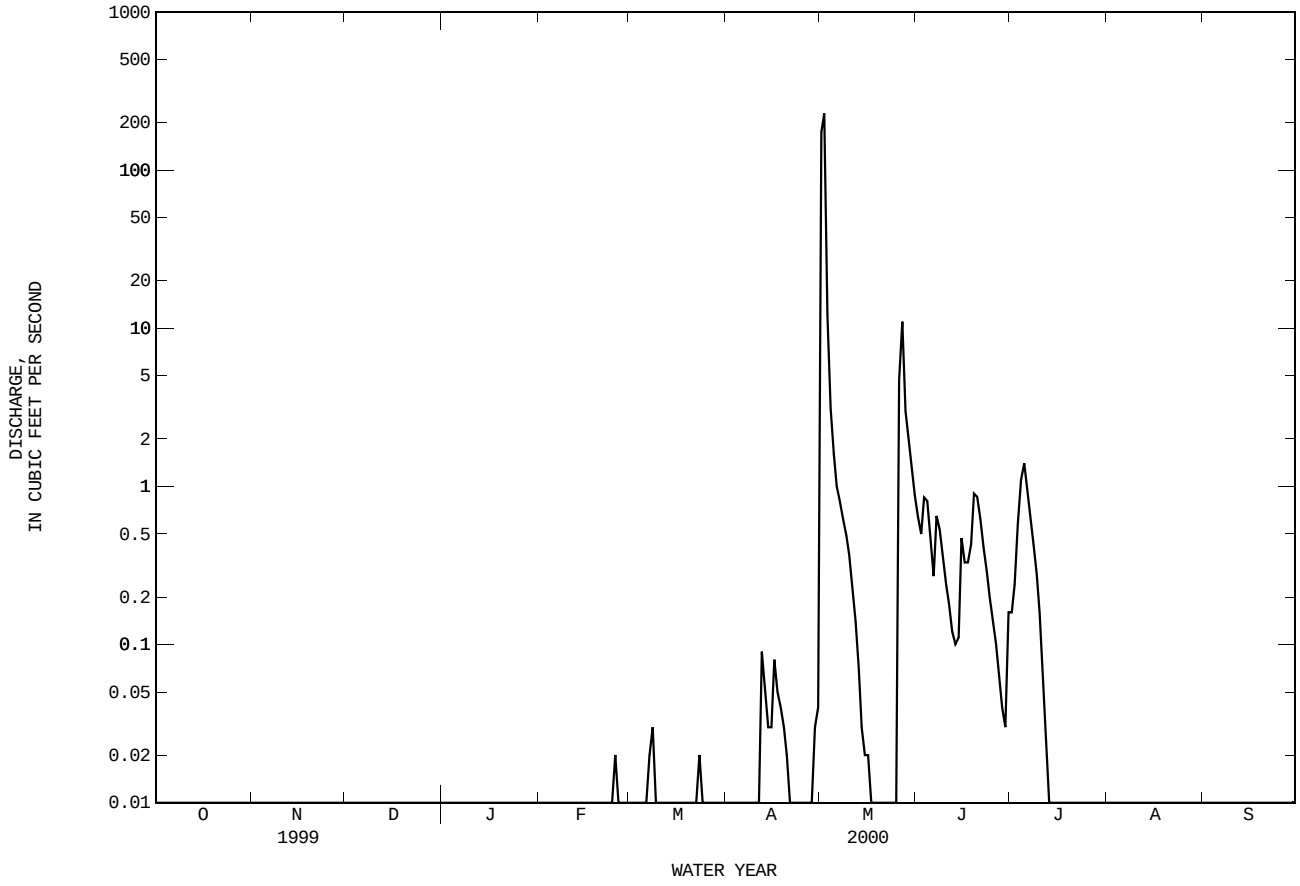
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.01	174	.64	.16	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	228	.50	.24	.00	.00
3	.00	.00	.00	.00	.00	.00	.01	12	.85	.58	.00	.00
4	.00	.00	.00	.00	.00	.00	.01	3.1	.81	1.1	.00	.00
5	.00	.00	.00	.00	.00	.00	.01	1.6	.49	1.4	.00	.00
6	.00	.00	.00	.00	.00	.00	.01	1.0	.27	.92	.00	.00
7	.00	.00	.00	.00	.00	.02	.00	.80	.65	.62	.00	.00
8	.00	.00	.00	.00	.00	.03	.00	.62	.53	.43	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.49	.36	.28	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.37	.24	.16	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.23	.18	.07	.00	.00
12	.00	.00	.00	.00	.00	.00	.09	.14	.12	.03	.00	.00
13	.00	.00	.00	.00	.00	.00	.05	.07	.10	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.03	.03	.11	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.03	.02	.47	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.08	.02	.33	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.05	.01	.33	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.04	.00	.43	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.03	.00	.90	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.02	.00	.86	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.01	.00	.62	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.01	.00	.41	.00	.00	.00
23	.00	.00	.00	.00	.00	.02	.01	.00	.29	.00	.00	.00
24	.00	.00	.00	.00	.00	.01	.01	.00	.20	.00	.00	.00
25	.00	.00	.00	.00	.02	.01	.00	.00	.14	.00	.00	.00
26	.00	.00	.00	.00	.01	.01	.00	4.7	.10	.00	.00	.00
27	.00	.00	.00	.00	.00	.01	.00	11	.06	.00	.00	.00
28	.00	.00	.00	.00	.00	.01	.00	3.0	.04	.00	.00	.00
29	.00	.00	.00	.00	.00	.01	.03	1.9	.03	.00	.00	.00
30	.00	.00	.00	.00	---	.01	.04	1.3	.16	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.88	---	.00	.00	---
TOTAL	0.00	0.00	0.00	0.00	0.03	0.14	0.59	445.28	11.22	5.99	0.00	0.00
MEAN	.000	.000	.000	.000	.001	.005	.020	14.4	.37	.19	.000	.000
MAX	.00	.00	.00	.00	.02	.03	.09	228	.90	1.4	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
AC-FT	.00	.00	.00	.00	.06	.3	1.2	883	22	12	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1964 - 2000, BY WATER YEAR (WY)

MEAN	35.2	11.5	20.1	11.6	26.9	49.4	39.6	105	62.5	5.82	5.26	12.0
MAX	902	97.3	303	139	411	295	686	453	508	123	48.7	102
(WY)	1982	1974	1992	1985	1997	1985	1990	1989	1992	1973	1995	1980
MIN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
(WY)	1979	1972	1966	1966	1966	1967	1971	1971	1971	1964	1969	1979

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1964 - 2000	
ANNUAL TOTAL	2244.50		463.25			
ANNUAL MEAN	6.15		1.27		32.7	
HIGHEST ANNUAL MEAN					128	1982
LOWEST ANNUAL MEAN					.44	1996
HIGHEST DAILY MEAN	594	Apr 27	228	May 2	16900	Oct 13 1981
LOWEST DAILY MEAN	.00	Jan 1	.00	Oct 1	.00	Dec 1 1963
ANNUAL SEVEN-DAY MINIMUM	.00	Jan 1	.00	Oct 1	.00	Dec 1 1963
INSTANTANEOUS PEAK FLOW			406	May 2	32500	Oct 13 1981
INSTANTANEOUS PEAK STAGE			12.96	May 2	31.70	Oct 13 1981
ANNUAL RUNOFF (AC-FT)	4450		919		23720	
10 PERCENT EXCEEDS	.76		.34		17	
50 PERCENT EXCEEDS	.00		.00		.13	
90 PERCENT EXCEEDS	.00		.00		.00	

07315200 EAST FORK LITTLE WICHITA RIVER NEAR HENRIETTA, TX--Continued



07315500 RED RIVER NEAR TERRAL, OK

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

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

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1211: Drainage area.

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

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

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

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

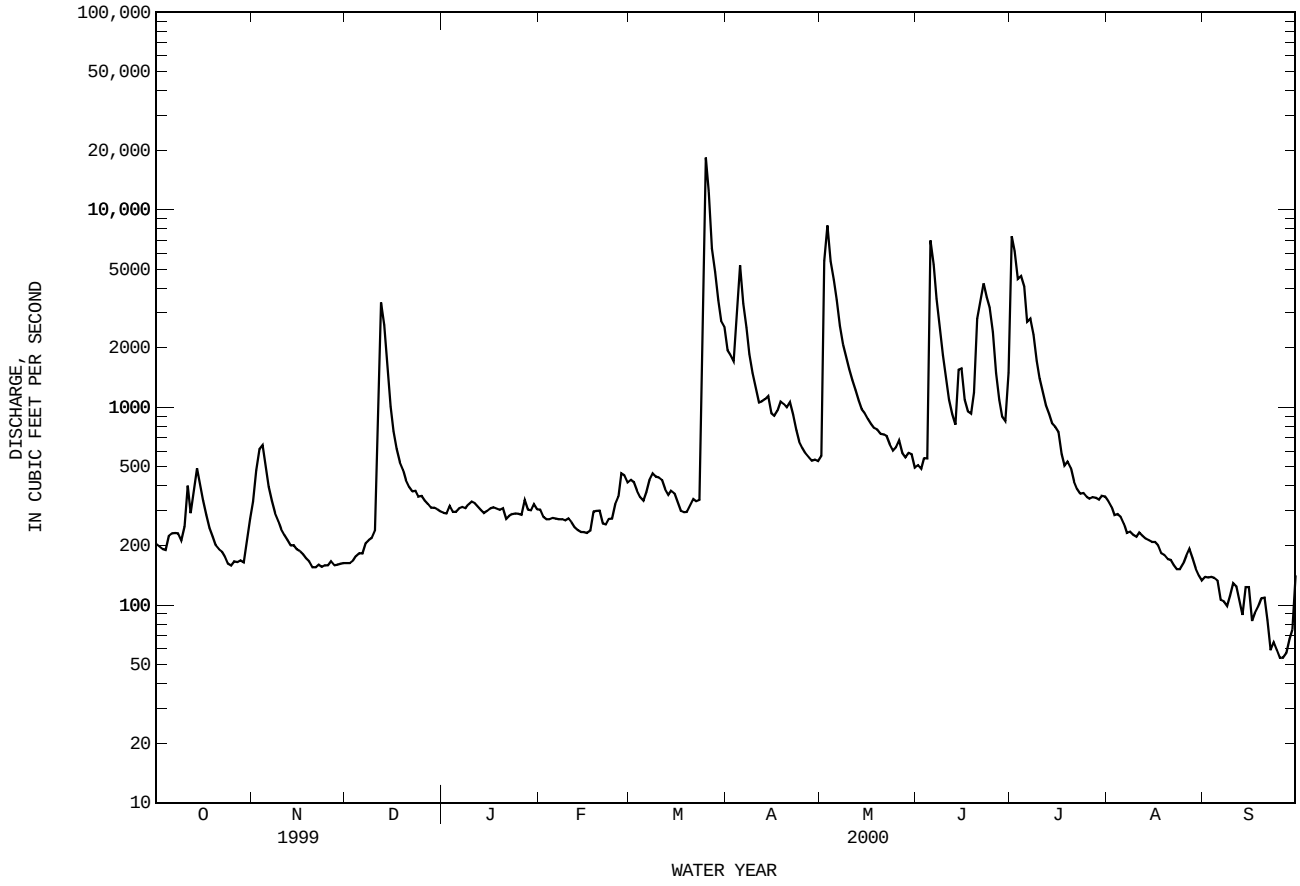
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	204	333	163	292	304	429	1940	566	509	7330	336	139
2	198	480	163	290	279	418	1830	5490	488	6160	314	138
3	192	612	168	317	271	378	1710	8330	554	4460	285	139
4	190	643	177	296	271	351	3030	5470	551	4620	288	137
5	224	503	183	296	276	337	5210	4410	6990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

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

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

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

07315500 RED RIVER NEAR TERRAL, OK--Continued



07315500 RED RIVER NEAR TERRELL, OK--Continued

WATER-QUALITY RECORDS

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

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

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

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07315600 LAKE NOCONA NEAR NOCONA, TX

LOCATION.--Lat 33°52’57", long 97°39’09", Montague County, Hydrologic Unit 11130201, on western bank near left end of dam on Farmer’s River, 6.0 mi northeast of Nocona.

DRAINAGE AREA.--94.0 mi^2.

PERIOD OF RECORD.--Mar 1999 to current year.

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

REMARKS.--Records fair. The lake is formed by an earthfill dam 3,720 ft long, including a 483-foot-wide reinforced concrete ogee-type uncontrolled spillway near right end of dam. The dam was completed Oct 1960, and storage began spring 1961. The service outlet consists of two gate-controlled 4- by 5-foot conduits. The dam and lake are owned by the North Montague County Water Supply District, which uses the water for their municipal supply. The capacity table is based on U.S. Geological Survey topographic maps, dated 1929. The capacity curve was entitled "Initial Lake Nocona Area & Capacity Characteristics". Conservation pool storage is 25,400 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	847.00
Crest of spillway	827.00
Top of conservation pool	826.85
Lowest gated outlet (invert)	795.00

COOPERATION.--Capacity curve and record of diversions for municipal use are provided by the North Montague County Water Supply District.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 21,960 acre-ft, Jun 1, 1999, elevation, 824,55 ft; minimum contents, 18,850 acre-ft, Sep 30, 2000, elevation, 817.20 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 18,980 acre-ft, Oct 1, elevation, 822.16 ft; minimum contents, 13,490 acre-ft, Sep 30, elevation, 817.20 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

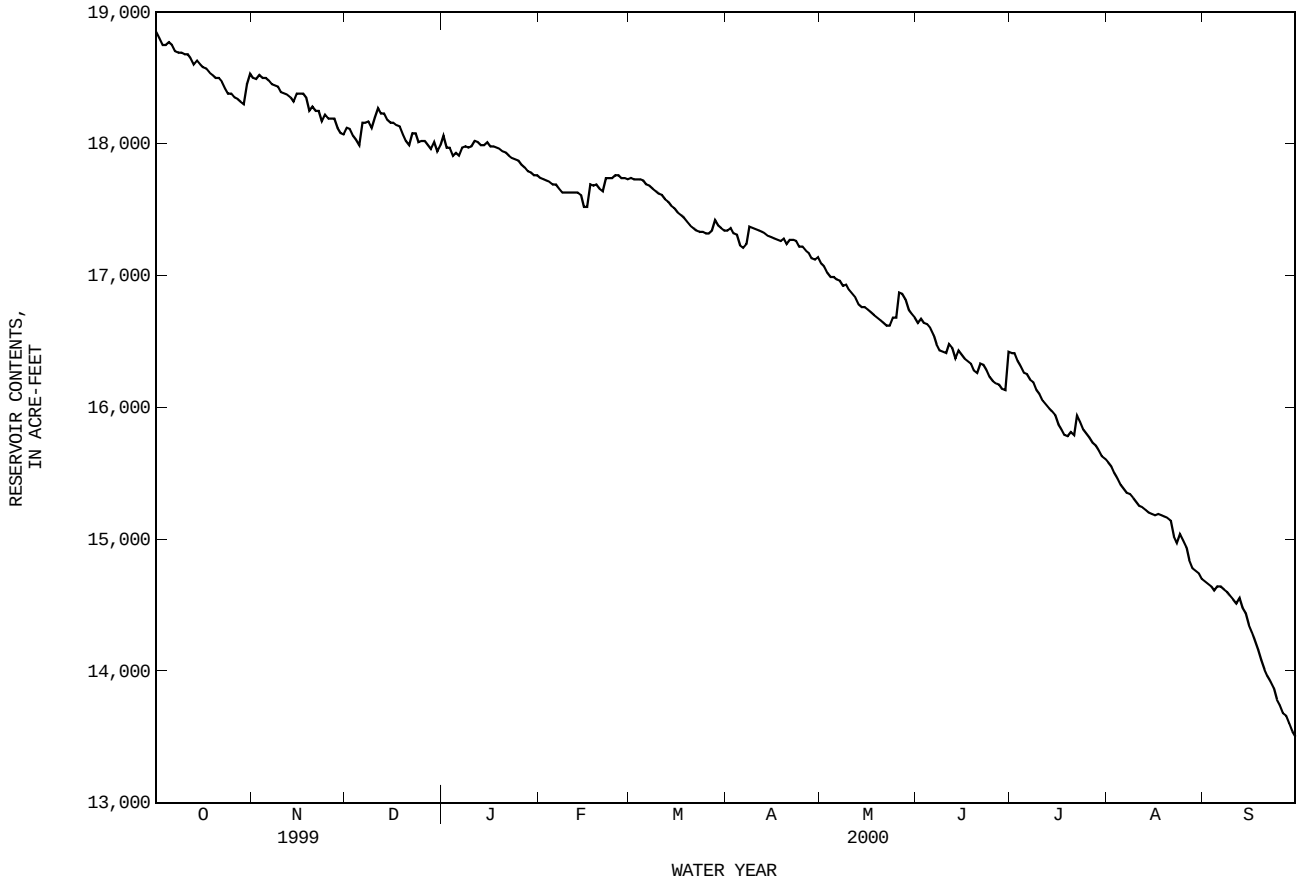
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18850	18500	18120	18060	17740	17740	17340	17090	16640	16410	15580	14680
2	18800	18490	18110	17970	17730	17730	17360	17070	16670	16410	15550	14660
3	18750	18520	18060	17970	17720	17730	17320	17020	16640	16350	15500	14640
4	18750	18500	18030	17910	17710	17730	17310	16990	16630	16310	15460	14610
5	18770	18500	17990	17930	17690	17720	17230	16990	16600	16260	15410	14640
6	18750	18480	18160	17910	17690	17690	17210	16970	16550	16250	15380	14640
7	18700	18450	18160	17970	17660	e17680	17240	16960	16480	16210	15350	14620
8	18690	18440	18170	17980	17630	e17660	e17370	16920	16430	16190	15340	14600
9	18690	18430	18120	17970	17630	e17640	e17360	16930	16420	16130	15310	14570
10	18680	18390	18200	17980	17630	e17620	17350	16890	16410	16100	15280	14540
11	18680	18380	18270	18020	17630	e17610	e17340	16860	16480	16050	15250	14510
12	18650	18370	18230	18010	17630	e17580	e17330	16830	16450	16020	15240	14550
13	18600	18350	18230	17990	17630	e17560	e17320	16780	16370	15990	15220	14480
14	18630	18320	18180	17990	17610	e17530	e17300	16760	16430	15970	15200	14440
15	18600	18380	18160	18010	17520	e17510	e17290	16760	16400	15940	15190	14350
16	e18580	18380	18160	17980	17520	e17480	e17280	e16740	16370	15870	15180	14290
17	18570	18380	18140	17980	17690	e17460	e17270	e16720	16350	15830	e15190	14230
18	18540	18350	18130	17970	17680	e17440	17260	e16700	16330	15790	e15180	14160
19	18520	18250	18070	17960	17690	e17410	17280	e16680	16280	15780	e15170	14080
20	18500	18280	18020	17940	17660	e17380	17240	e16660	16260	15810	e15160	14010
21	18500	18250	17990	17930	17640	e17360	17270	e16640	16330	15790	15140	13960
22	18470	18250	18080	17910	17740	e17340	17270	16620	16320	15940	15020	13920
23	18420	18170	18080	17890	17740	e17330	17260	16620	16280	15890	14970	13870
24	18380	18220	18010	17880	17740	17330	17220	16680	16230	15830	15040	13780
25	18380	18190	18020	17870	17760	17320	17220	16680	16200	15800	14990	13740
26	18350	18190	18020	17840	17760	17320	17190	16870	16180	15770	14940	13680
27	18340	18190	17990	17820	17740	17340	17170	16860	16170	15730	14840	13660
28	18320	18120	17960	17790	17740	17420	17130	16820	16140	15710	14780	13600
29	18300	18080	18010	17780	17730	17380	17120	16740	16130	15670	14760	13540
30	18450	18070	17940	17760	---	17360	17140	16710	16420	15630	14740	13500
31	18530	---	17990	17760	---	17340	---	16680	---	15610	14700	---
MAX	18850	18520	18270	18060	17760	17740	17370	17090	16670	16410	15580	14680
MIN	18300	18070	17940	17760	17520	17320	17120	16620	16130	15610	14700	13500
(+)	821.80	821.43	821.37	821.18	821.16	820.85	820.69	820.32	820.11	819.33	818.41	817.21
(@)	-320	-460	-80	-230	-30	-390	-200	-460	-260	-810	-910	-1200
(++)	52	35	36	30	34	35	48	37	37	58	78	61

WTR YR 2000 MAX 18980 MIN 13490 (@) -5350 (++) 541

e Estimated

(+) Gage height, in feet, at end of month.
(@) Change in contents, in acre-feet.
(++) Diversions, in acre-feet, for municipal use by the North Montague County Water Supply District.

07315600 LAKE NOCONA NEAR NOCONA, TX--Continued



07315950 MOSS LAKE NEAR GAINESVILLE, TX

LOCATION.--Lat 33°46′26", long 97°12′50", Cooke County, Hydrologic Unit 11130201, on upstream side of dam about 250 ft from right end of Fish Creek dam on Fish Creek, 1.6 mi upstream from Bearhead Creek, 3.7 mi upstream from mouth, and 10.0 mi northwest of Gainesville.

DRAINAGE AREA.--65.0 mi^2.

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Chemical data: Oct 1969 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr 20, 1979, recording gage at site about 150 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 1,460 ft long. The dam was completed and storage began Dec 2, 1966. An uncontrolled morning-glory-type spillway with a 7- by 7-foot opening is designed to discharge 2,500 ft^3/s at a 10-foot head. A 400-foot-wide spillway has been cut through natural ground, and is located about 100 ft to left of the left end of dam. The dam was built by the city of Gainesville to impound water for municipal use. Conservation pool storage is 23,210 acre-ft. Data regarding the dam is given in the following table:

	Elevation (feet)
Top of dam	740.0
Top of design flood pool	736.0
Crest of spillway	725.0
Crest of spillway morning-glory type (top of conservation pool)	715.0
Lowest gated outlet (invert)	666.0

COOPERATION.--A new capacity table dated May 1999, provided by the Texas Water Development Board, was put into use on Oct 1, 1999. There was no known diversion from the lake during the current water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 50,990 acre-ft, Oct 13, 1981, elevation, 733.72 ft; minimum contents since lake filled in May 1968, 11,490 acre-ft, Jan 18, 1990, elevation, 702.08 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 22,040 acre-ft, Oct 1, 2, 3, 5, elevation, 713.00 ft; minimum contents, 19,890 acre-ft, Sep 30, elevation, 710.85 ft.

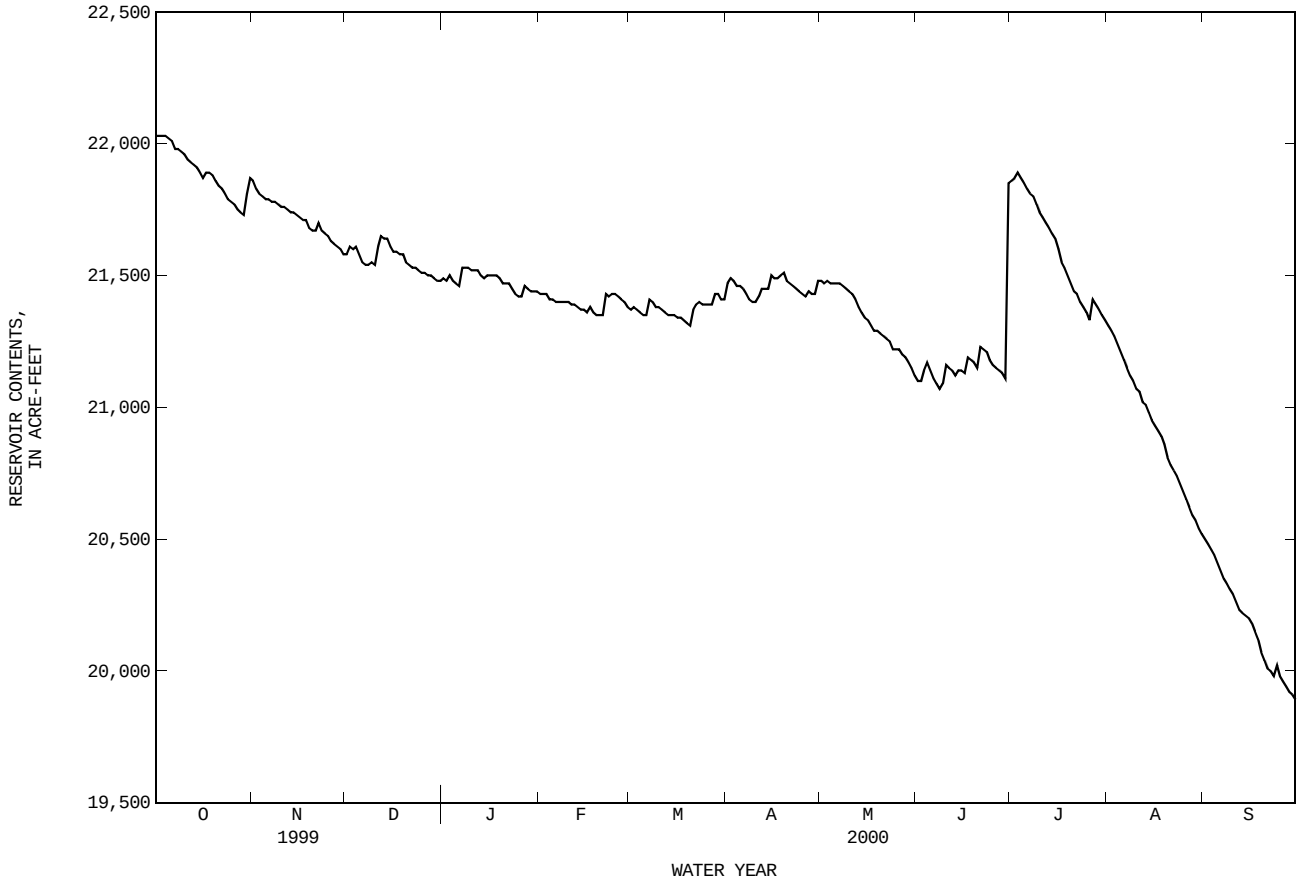
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22030	21860	21580	21490	21430	21370	21470	21480	21100	21860	21310	20500
2	22030	21830	21610	21480	21430	21380	21490	21470	21100	21870	21290	20480
3	22030	21810	21600	21500	21430	21370	21480	21480	21140	21890	21270	20460
4	22030	21800	21610	21480	21410	21360	21460	21470	21170	21870	21240	20440
5	22020	21790	21580	21470	21410	21350	21460	21470	21140	21850	21210	20410
6	22010	21790	21550	21460	21400	21350	21450	21470	21110	21830	21180	20380
7	21980	21780	21540	21530	21400	21410	21430	21470	21090	21810	21150	20350
8	21980	21780	21540	21530	21400	21400	21410	21460	21070	21800	21120	20330
9	21970	21770	21550	21530	21400	21380	21400	21450	21090	21770	21100	20310
10	21960	21760	21540	21520	21400	21380	21400	21440	21160	21740	21070	20290
11	21940	21760	21610	21520	21390	21370	21420	21430	21150	21720	21060	20260
12	21930	21750	21650	21520	21390	21360	21450	21410	21140	21700	21020	20230
13	21920	21740	21640	21500	21380	21350	21450	21380	21120	21680	21010	20220
14	21910	21740	21640	21490	21370	21350	21450	21360	21140	21660	20980	20210
15	21890	21730	21610	21500	21370	21350	21500	21340	21140	21640	20950	20200
16	21870	21720	21590	21500	21360	21340	21490	21330	21130	21600	20930	20180
17	21890	21710	21590	21500	21380	21340	21490	21310	21190	21550	20910	20150
18	21890	21710	21580	21500	21360	21330	21500	21290	21180	21530	20890	20120
19	21880	21680	21580	21490	21350	21320	21510	21290	21170	21500	20860	20070
20	21860	21670	21550	21470	21350	21310	21480	21280	21150	21470	20810	20040
21	21840	21670	21540	21470	21350	21370	21470	21270	21230	21440	20780	20010
22	21830	21700	21530	21470	21430	21390	21460	21260	21220	21430	20760	20000
23	21810	21670	21530	21450	21420	21400	21450	21250	21210	21400	20740	19980
24	21790	21660	21520	21430	21430	21390	21440	21220	21180	21380	20710	20020
25	21780	21650	21510	21420	21430	21390	21430	21220	21160	21360	20680	19980
26	21770	21630	21510	21420	21420	21390	21420	21220	21150	21330	20650	19960
27	21750	21620	21500	21460	21410	21390	21440	21200	21140	21410	20620	19940
28	21740	21610	21500	21450	21400	21430	21430	21190	21130	21390	20590	19920
29	21730	21600	21490	21440	21380	21430	21430	21170	21110	21370	20570	19910
30	21810	21580	21480	21440	---	21410	21480	21150	21850	21350	20540	19890
31	21870	---	21480	21440	---	21410	---	21120	---	21330	20520	---
MAX	22030	21860	21650	21530	21430	21430	21510	21480	21850	21890	21310	20500
MIN	21730	21580	21480	21420	21350	21310	21400	21120	21070	21330	20520	19890
(+)	712.83	712.54	712.45	712.41	712.35	712.38	712.45	712.09	712.81	712.30	711.49	710.85
(@)	+840	-290	-100	-40	-60	+30	+70	-360	+730	-520	-810	-630

CAL YR 1999 MAX 25810 MIN 21020 (@) +410
WTR YR 2000 MAX 22030 MIN 19890 (@) -1140

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07315950 MOSS LAKE NEAR GAINESVILLE, TX--Continued



07316000 RED RIVER NEAR GAINESVILLE, TX

LOCATION.--Lat 33°43′40", long 97°09′35", in SW 1/4 sec.36, T.9 S., R.1 E., Love County, OK, Hydrologic Unit 11130201, on downstream right bank at end of bridge on Interstate 35, 0.2 mi downstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 5.0 mi downstream from Fish Creek, 4.5 mi southwest of Thackerville, OK, 7.0 mi north of Gainesville, and at mile 791.5.

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

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

REVISED RECORDS.--WSP 1211: Drainage area.

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

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

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

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

No peak greater than base discharge.

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

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

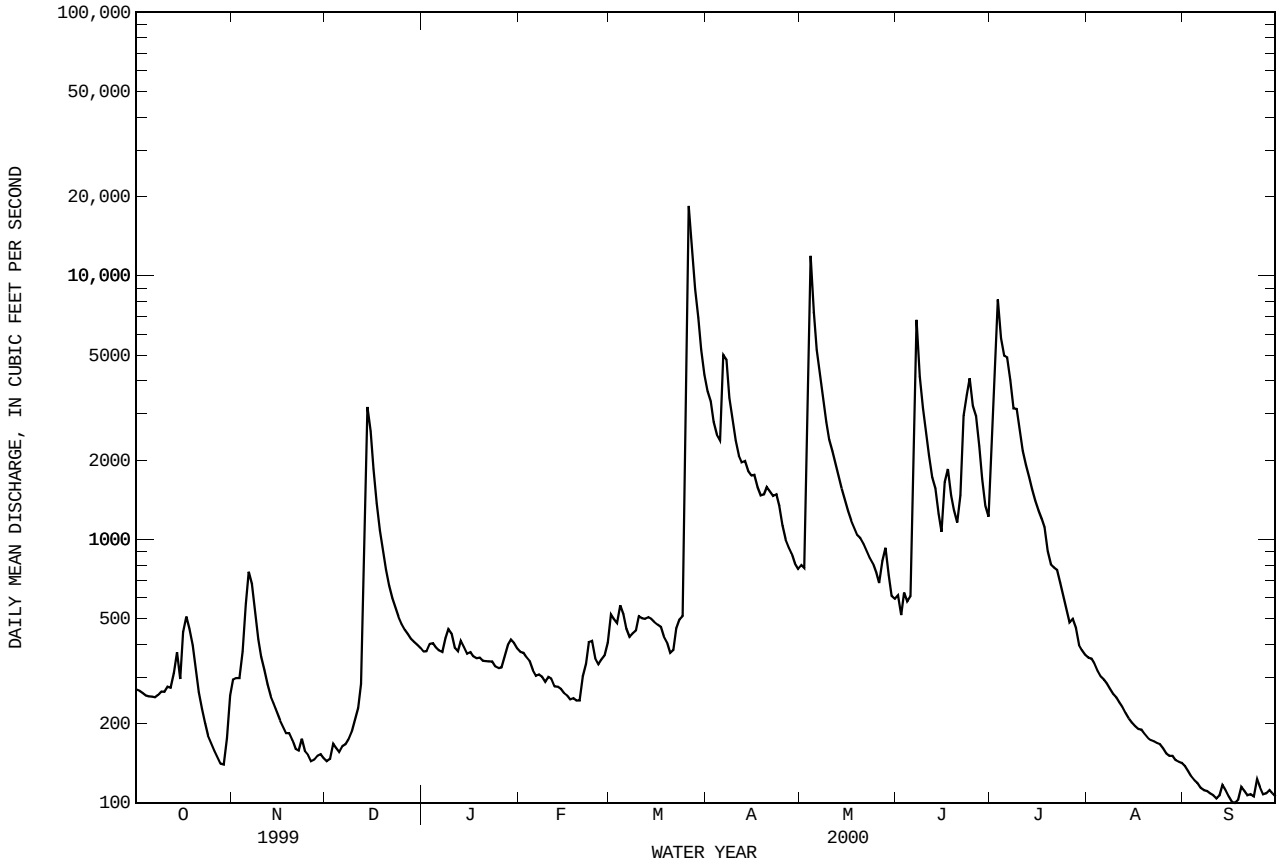
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1937 - 2000, BY WATER YEAR (WY)

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

e Estimated

07316000 RED RIVER NEAR GAINESVILLE, TX--Continued

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



07331500 LAKE TEXOMA NEAR DENISON, TX

LOCATION.--Lat 33°49′05", long 96°34′20", Bryan County, OK, Hydrologic Unit 11130210, in control tower of Denison Dam on Red River, 1.2 mi upstream from Shawnee Creek, 1.8 mi upstream from Sand Creek, 4.0 mi northwest of Denison, 6.0 mi southwest of Colbert, and at mile 725.9.

DRAINAGE AREA.--39,719 mi^2, of which 5,936 mi^2 is probably noncontributing.

PERIOD OF RECORD.--Jul 1942 to Sep 1993; Oct 1999 to Sep 2000.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Mar 30, 1944, nonrecording gage at same site and datum. Prior to Oct 1, 1948, supplementary nonrecording gage in Cumberland pool at same datum. U.S. Army Corps of Engineers satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam. The controlled outlet consists of eight 20-foot diameter conduits and the uncontrolled outlet is a concrete, ogee-type weir spillway. Flow was diverted through conduits Jul 27, 1942; regulated storage began Oct 31, 1943; power pool was first filled March 15, 1945. When contents are below 2,105,000 acre-feet, the reservoir is divided into two pools by protective levees around the Cumberland oil field on the Washita outlet channel for the upper pool (known as Cumberland pool)at elevation 610 feet. At higher elevations the two pools are considered as being at a common level, contents being computed from Denison pool gage. Conservation pool storage is 5,382,000 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	670.0
Crest of spillway	640.0
Top of maximum power pool	617.0

COOPERATION.--Area and capacity tables provided by the U.S. Army Corps of Engineers. Record of contents provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 6,028,000 acre-ft, May 6, 1990 (elevation, 644.76 ft); minimum contents since pool was first filled, 1,565,100 acre-ft, Sep 16, 1964; minimum elevation, 599.96 ft Mar 1 and 2, 1957.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,773,000 acre-ft, Jul 10, elevation, 619.14 ft; minimum contents, 2,221,000 acre-ft, Feb 22, Mar 2, elevation, 612.38 ft.

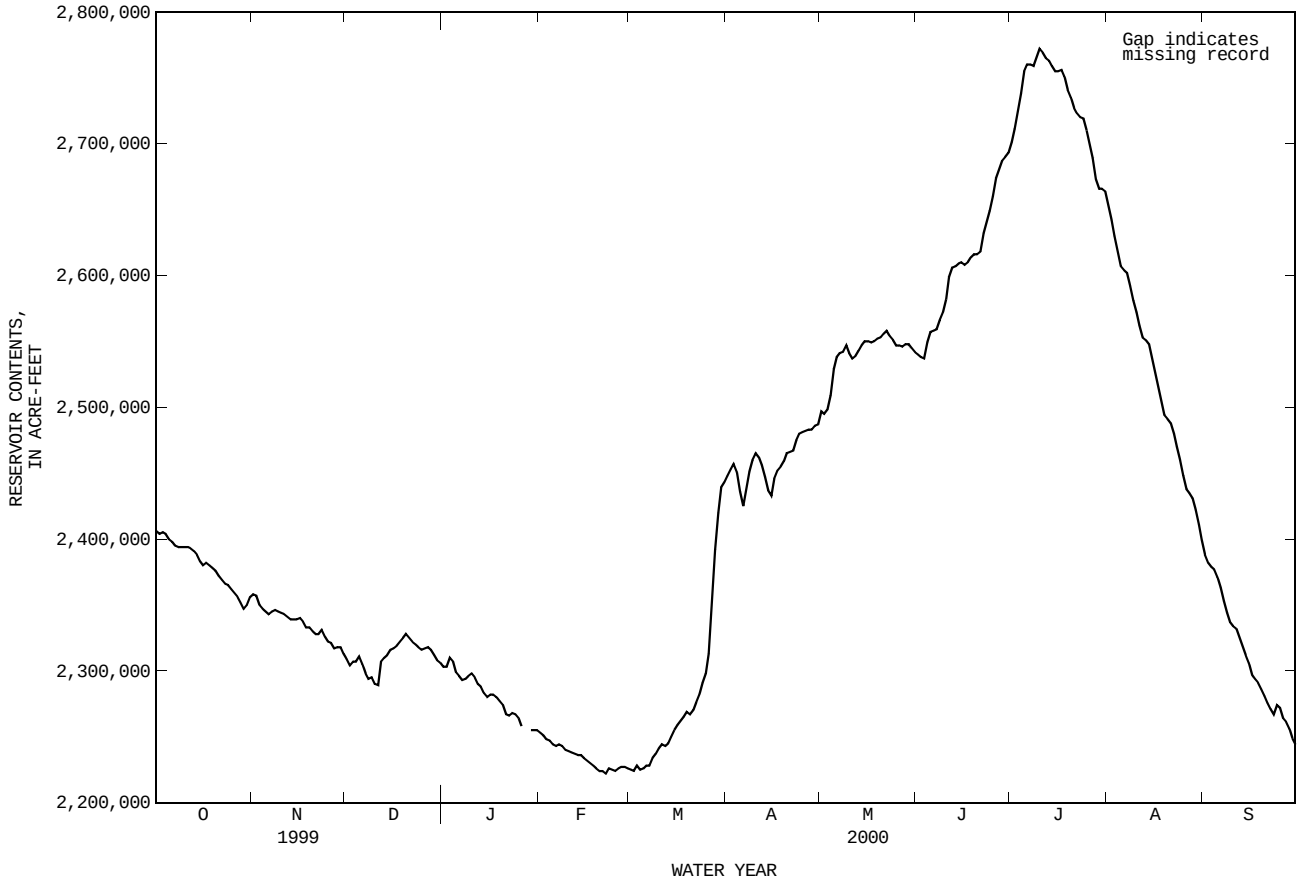
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

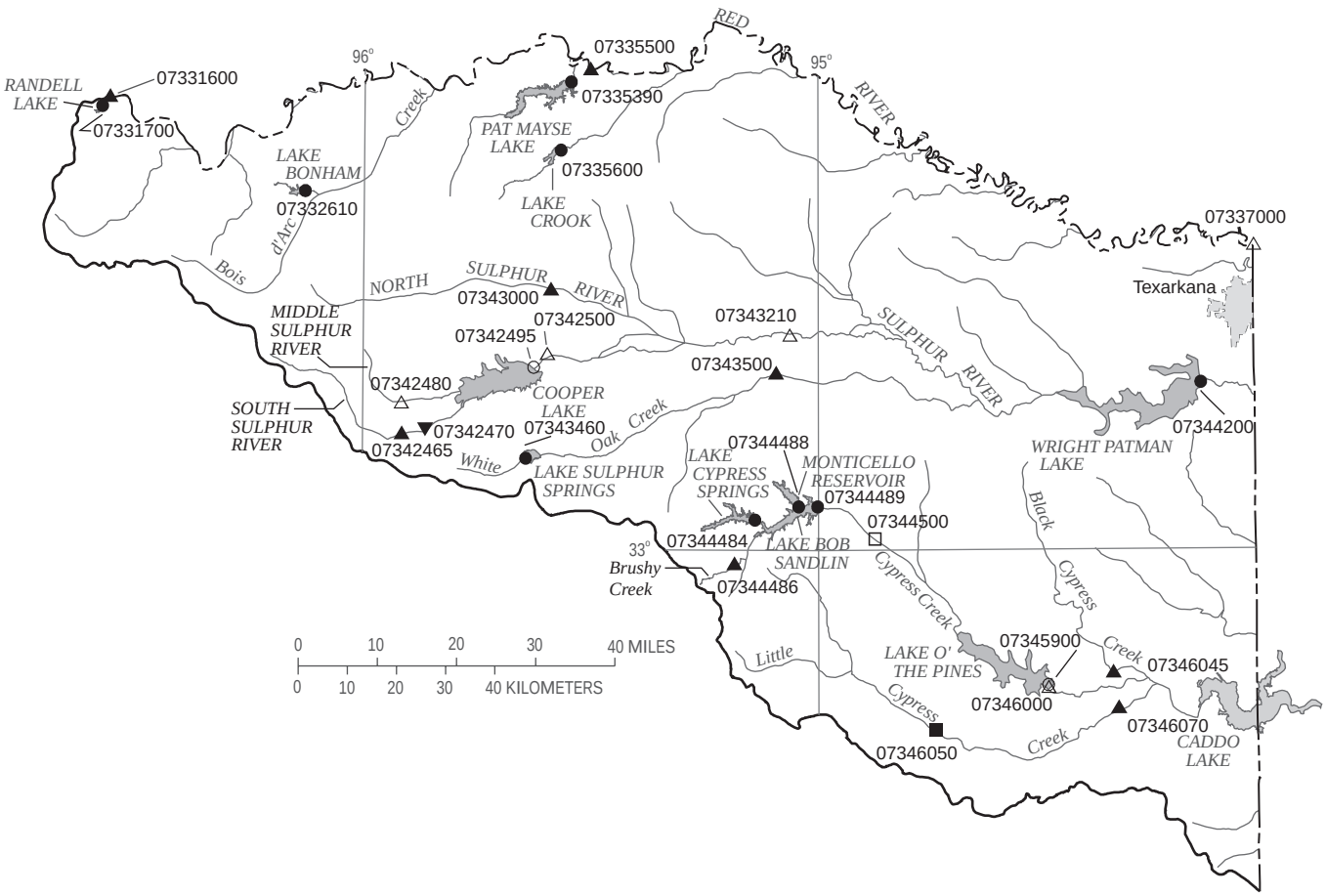
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2406000	2358000	2309000	2303000	2253000	2225000	2448000	2497000	2540000	2701000	2653000	2388000
2	2404000	2357000	2304000	2303000	2251000	2224000	2453000	2495000	2538000	2711000	2642000	2382000
3	2405000	2350000	2307000	2310000	2248000	2228000	2457000	2498000	2537000	2724000	2630000	2379000
4	2404000	2347000	2307000	2307000	2247000	2225000	2451000	2509000	2549000	2738000	2618000	2377000
5	2400000	2345000	2311000	2299000	2244000	2226000	2436000	2529000	2557000	2755000	2607000	2371000
6	2398000	2343000	2305000	2296000	2243000	2228000	2425000	2538000	2558000	2760000	2604000	2363000
7	2395000	2345000	2298000	2293000	2244000	2228000	2439000	2541000	2559000	2760000	2602000	2353000
8	2394000	2346000	2294000	2294000	2243000	2234000	2451000	2542000	2566000	2759000	2592000	2344000
9	2394000	2345000	2295000	2296000	2240000	2237000	2460000	2547000	2572000	2766000	2581000	2337000
10	2394000	2344000	2290000	2298000	2239000	2241000	2465000	2541000	2582000	2772000	2572000	2334000
11	2394000	2343000	2289000	2295000	2238000	2244000	2462000	2537000	2599000	2769000	2562000	2332000
12	2393000	2341000	2307000	2290000	2237000	2243000	2456000	2539000	2606000	2765000	2553000	2325000
13	2391000	2339000	2310000	2288000	2236000	2245000	2447000	2543000	2607000	2763000	2551000	2319000
14	2388000	2339000	2312000	2283000	2236000	2250000	2437000	2547000	2609000	2759000	2548000	2312000
15	2383000	2339000	2316000	2280000	2234000	2255000	2433000	2550000	2610000	2755000	2538000	2306000
16	2380000	2340000	2317000	2282000	2232000	2259000	2446000	2550000	2608000	2755000	2527000	2297000
17	2382000	2337000	2319000	2282000	2230000	2262000	2452000	2549000	2610000	2756000	2515000	2294000
18	2380000	2333000	2322000	2280000	2228000	2265000	2455000	2550000	2614000	2751000	2504000	2291000
19	2378000	2333000	2325000	2277000	2226000	2269000	2459000	2552000	2616000	2741000	2494000	2286000
20	2376000	2330000	2328000	2274000	2224000	2267000	2465000	2553000	2616000	2735000	2491000	2281000
21	2372000	2328000	2325000	2267000	2224000	2270000	2466000	2556000	2618000	2727000	2488000	2276000
22	2369000	2328000	2322000	2266000	2222000	2276000	2467000	2558000	2632000	2723000	2480000	2271000
23	2366000	2331000	2320000	2268000	2226000	2282000	2475000	2554000	2641000	2720000	2470000	2267000
24	2365000	2326000	2318000	2267000	2225000	2291000	2480000	2551000	2649000	2719000	2460000	2274000
25	2362000	2322000	2316000	2264000	2224000	2298000	2481000	2547000	2660000	2710000	2448000	2272000
26	2359000	2321000	2317000	2258000	2226000	2313000	2482000	2547000	2674000	2700000	2438000	2264000
27	2356000	2317000	2318000	---	2227000	2355000	2483000	2546000	2681000	2689000	2435000	2261000
28	2352000	2318000	2316000	---	2227000	2392000	2483000	2548000	2687000	2673000	2431000	2256000
29	2347000	2318000	2312000	2255000	2226000	2420000	2486000	2548000	2690000	2666000	2422000	2249000
30	2350000	2313000	2308000	2255000	---	2439000	2487000	2545000	2693000	2666000	2411000	2244000
31	2356000	---	2306000	2255000	---	2443000	---	2542000	---	2664000	2399000	---
MEAN	2380000	2336000	2311000	---	2234000	2279000	2460000	2540000	2609000	2731000	2525000	2310000
MAX	2406000	2358000	2328000	---	2253000	2443000	2487000	2558000	2693000	2772000	2653000	2388000
MIN	2347000	2313000	2289000	---	2222000	2224000	2425000	2495000	2537000	2664000	2399000	2244000
(+)	614.21	613.64	613.54	612.84	612.44	615.32	615.89	616.53	618.27	617.95	614.76	612.69
(@)	---	-43000	-7000	-51000	-29000	+217000	+44000	+55000	+151000	-29000	-265000	-155000

WTR YR 2000 MAX 2772000 MIN 2222000

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07331500 LAKE TEXOMA NEAR DENISON, TX--Continued





EXPLANATION

07344486	▲	**Surface-water continuous station and number**
07342500	△	**Surface-water continuous/water-quality station and number**
07344488	●	**Reservoir station and number**
07342495	○	**Reservoir/water-quality station and number**
07342470	▼	**Water-quality station and number**
07344500	□	**Surface-water partial record/stage only/water-quality station and number**
07346050	■	**Surface-water partial record/stage only station and number**

Figure 7.-- Map showing location of gaging stations in the fourth section of the Red River Basin

07331600 Red River at Denison Dam near Denison, TX 226
07331700 Randell Lake near Denison, TX 228
07332610 Lake Bonham near Bonham, TX 232
07335390 Pay Mayse Lake near Chicota, TX 236
07335500 Red River at Arthur City, TX 238
07335600 Lake Crook near Paris, TX 240
07337000 Red River at Index, AR 244
07342465 South Sulphur River at Commerce, TX 248
07342470 South Sulphur River near Commerce 250
07342480 Middle Sulphur River at Commerce, TX 252
07342495 Cooper Lake near Cooper, TX 256
07342500 South Sulphur River near Cooper, TX 268
07343000 North Sulphur River near Cooper, TX 272
07343210 Sulphur River below Talco, TX 274
07343460 Lake Sulphur Springs near Sulphur Springs, TX 278
07343500 White Oak Creek near Talco, TX 282
07344200 Wright Patman Lake near Texarkana, TX 284
07344484 Lake Cypress Springs near Mt. Vernon, TX 286
07344486 Brushy Creek at Scroggins, TX 288
07344488 Monticello Reservoir near Mt. Pleasant, TX 290
07344489 Lake Bob Sandlin near Mount Pleasant, TX. 292
07344500 Big Cypress Creek near Pittsburg, TX 294
07345900 Lake O the Pines near Jefferson, TX 298
07346000 Big Cypress Creek near Jefferson, TX 314
07346045 Black Cypress Bayou at Jefferson, TX 318
07346050 Little Cypress Creek near Ore City, TX 320
07346070 Little Cypress Creek near Jefferson, TX 322
07346310* Caddo Lake near Mooringsport, LA 324

* Station is not located within the illustrated map area.

07331600 RED RIVER AT DENISON DAM NEAR DENISON, TX

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

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

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

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

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

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

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

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

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

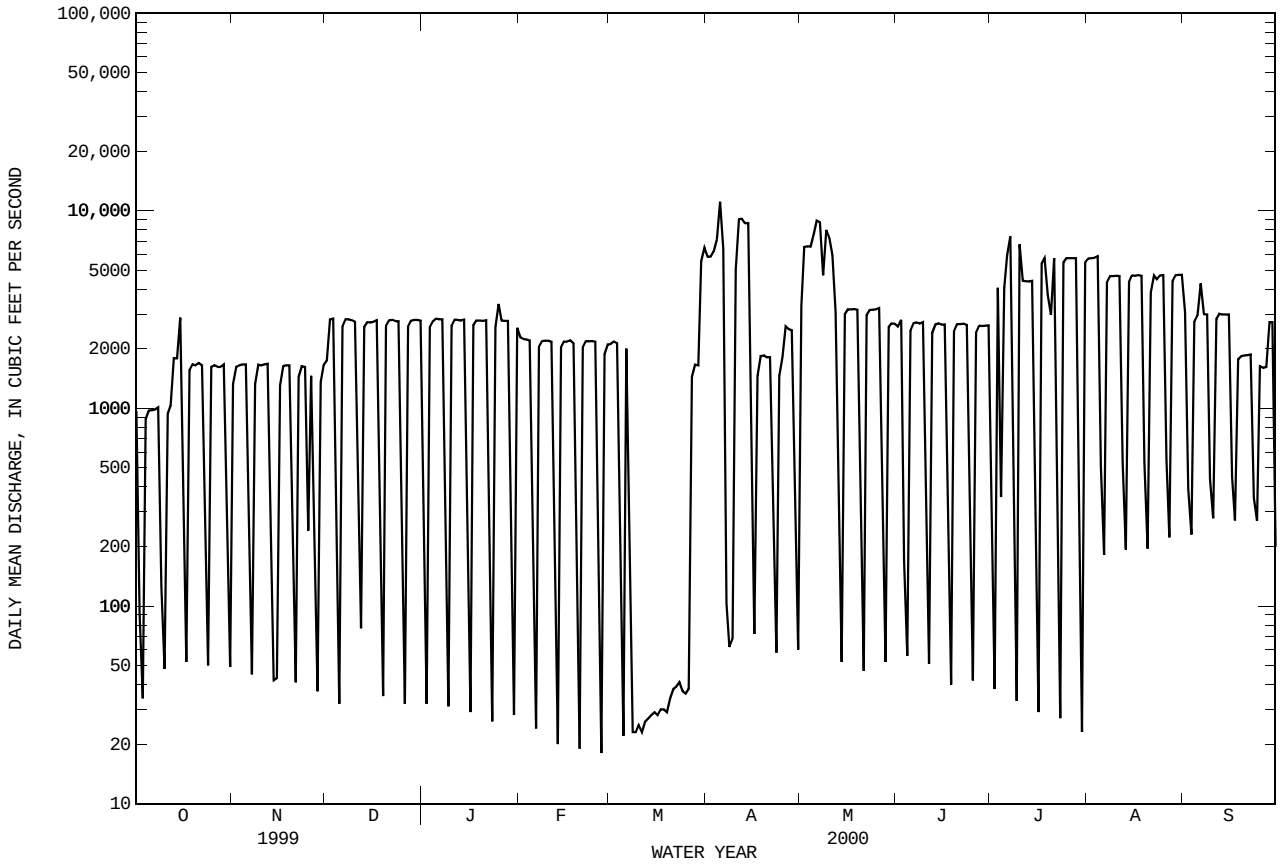
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1945 - 2000h, BY WATER YEAR (WY)

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

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

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

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



07331700 RANDELL LAKE NEAR DENNISON, TX

LOCATION.--Lat 33°48′06", long 96°34′48", Grayson County, Hydrologic Unit 11140101, on right bank near the right end of the dam on Shawne Creek, 5.6 mi northeast of Denison.

DRAINAGE AREA.--11 mi^2.

PERIOD OF RECORD.--Mar 1999 to current year.

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

REMARKS.--The lake is formed by a rolled earthfill dam 2,100 ft long. The outlet works consist of twenty-three 8- by 12-ft tainter gates and two 8-ft wide open concrete spillways. Dam was completed and impoundment began in 1909. The lake was built and owned by the city of Denison. Conservation pool storage is 6,290 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	640.00
Top of tainter gates	628.00
Crest of concrete spillway	630.00
Top of conservation pool	621.85

COOPERATION.--Capacity table furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,590 acre-ft, Apr 5, 1999, elevation, 618.31 ft; minimum contents, 2,250 acre-ft, Sep 3,4, 5, 1999, elevation, 608.04 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 4,590 acre-ft, Apr 5, elevation, 618.31 ft; minimum contents, 2,250 acre-ft, Sep 4, 5, elevation, 608.04 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 3,930 acre-ft, May 15, elevation, 615.56 ft; minimum contents, 2,410 acre-ft, Oct 1, elevation, 608.92 ft.

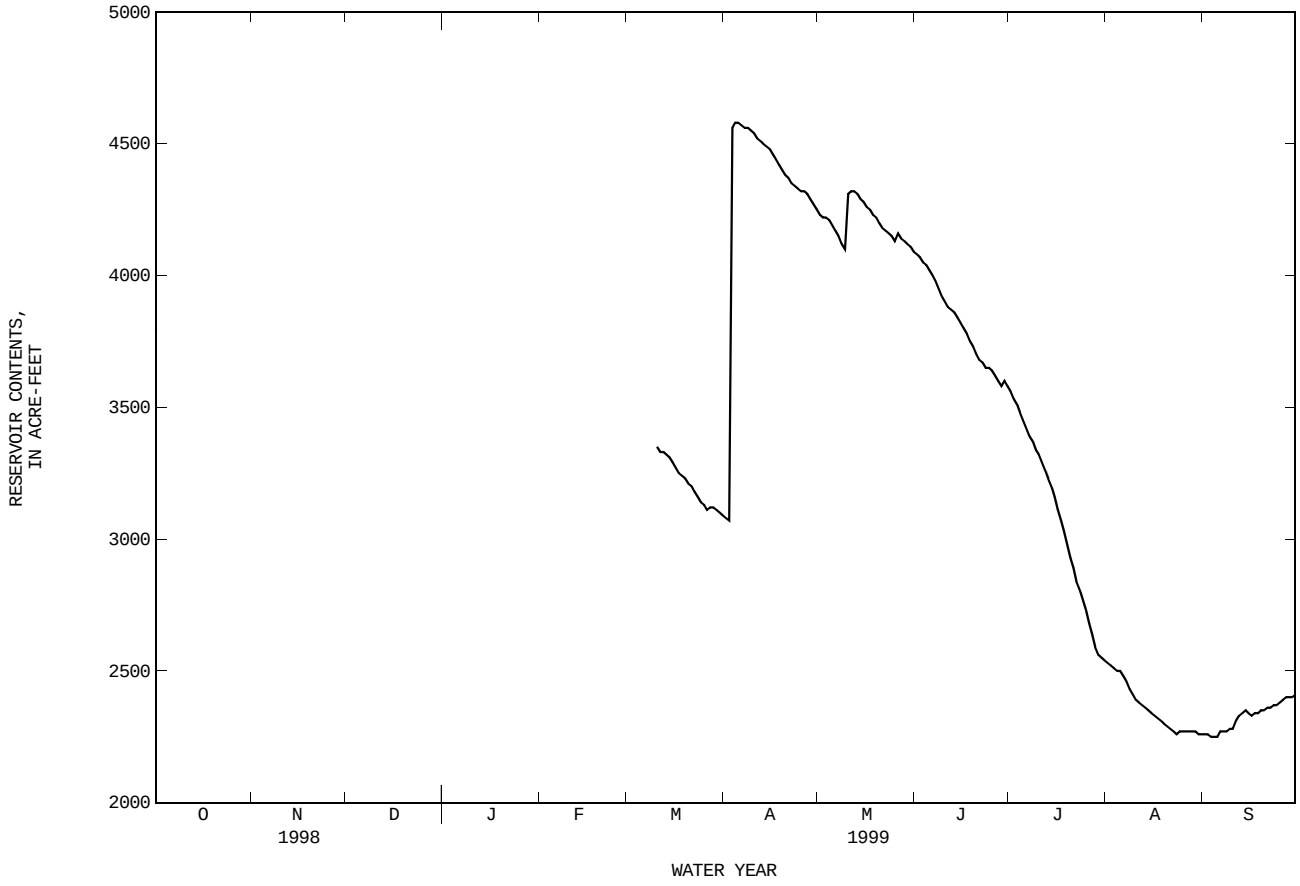
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	3080	4230	4080	3560	2530	2260
2	---	---	---	---	---	---	3070	4220	4070	3530	2520	2260
3	---	---	---	---	---	---	4560	4220	4050	3510	2510	2250
4	---	---	---	---	---	---	4580	4210	4040	3480	2500	2250
5	---	---	---	---	---	---	4580	4190	4020	3450	2500	2250
6	---	---	---	---	---	---	4570	4170	4000	3420	2480	2270
7	---	---	---	---	---	---	4560	4150	3980	3390	2460	2270
8	---	---	---	---	---	---	4560	4120	3950	3370	2430	2270
9	---	---	---	---	---	---	4550	4100	3920	3340	2410	2280
10	---	---	---	---	---	3350	4540	4310	3900	3320	2390	2280
11	---	---	---	---	---	3330	4520	4320	3880	3290	2380	2310
12	---	---	---	---	---	3330	4510	4320	3870	3260	2370	2330
13	---	---	---	---	---	3320	4500	4310	3860	3230	2360	2340
14	---	---	---	---	---	3310	4490	4290	3840	3200	2350	2350
15	---	---	---	---	---	3290	4480	4280	3820	3160	2340	2340
16	---	---	---	---	---	3270	4460	4260	3800	3110	2330	2330
17	---	---	---	---	---	3250	4440	4250	3780	3070	2320	2340
18	---	---	---	---	---	3240	4420	4230	3750	3030	2310	2340
19	---	---	---	---	---	3230	4400	4220	3730	2980	2300	2350
20	---	---	---	---	---	3210	4380	4200	3700	2930	2290	2350
21	---	---	---	---	---	3200	4370	4180	3680	2890	2280	2360
22	---	---	---	---	---	3180	4350	4170	3670	2840	2270	2360
23	---	---	---	---	---	3160	4340	4160	3650	2810	2260	2370
24	---	---	---	---	---	3140	4330	4150	3650	2770	2270	2370
25	---	---	---	---	---	3130	4320	4130	3640	2730	2270	2380
26	---	---	---	---	---	3110	4320	4160	3620	2680	2270	2390
27	---	---	---	---	---	3120	4310	4140	3600	2640	2270	2400
28	---	---	---	---	---	3120	4290	4130	3580	2590	2270	2400
29	---	---	---	---	---	3110	4270	4120	3600	2560	2270	2400
30	---	---	---	---	---	3100	4250	4110	3580	2550	2260	2410
31	---	---	---	---	---	3090	---	4090	---	2540	2260	---
MEAN	---	---	---	---	---	---	4350	4200	3810	3070	2360	2330
MAX	---	---	---	---	---	---	4580	4320	4080	3560	2530	2410
MIN	---	---	---	---	---	---	3070	4090	3580	2540	2260	2250
(+)						612.10	616.95	616.27	614.13	609.72	608.16	609.11
(@)							+1160	-160	-510	-1040	-280	+150

WTR YR 1999 MAX 4590 MIN 2250

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07331700 RANDELL LAKE NEAR DENNISON, TX--Continued



07331700 RANDELL LAKE NEAR DENNISON, TX--Continued

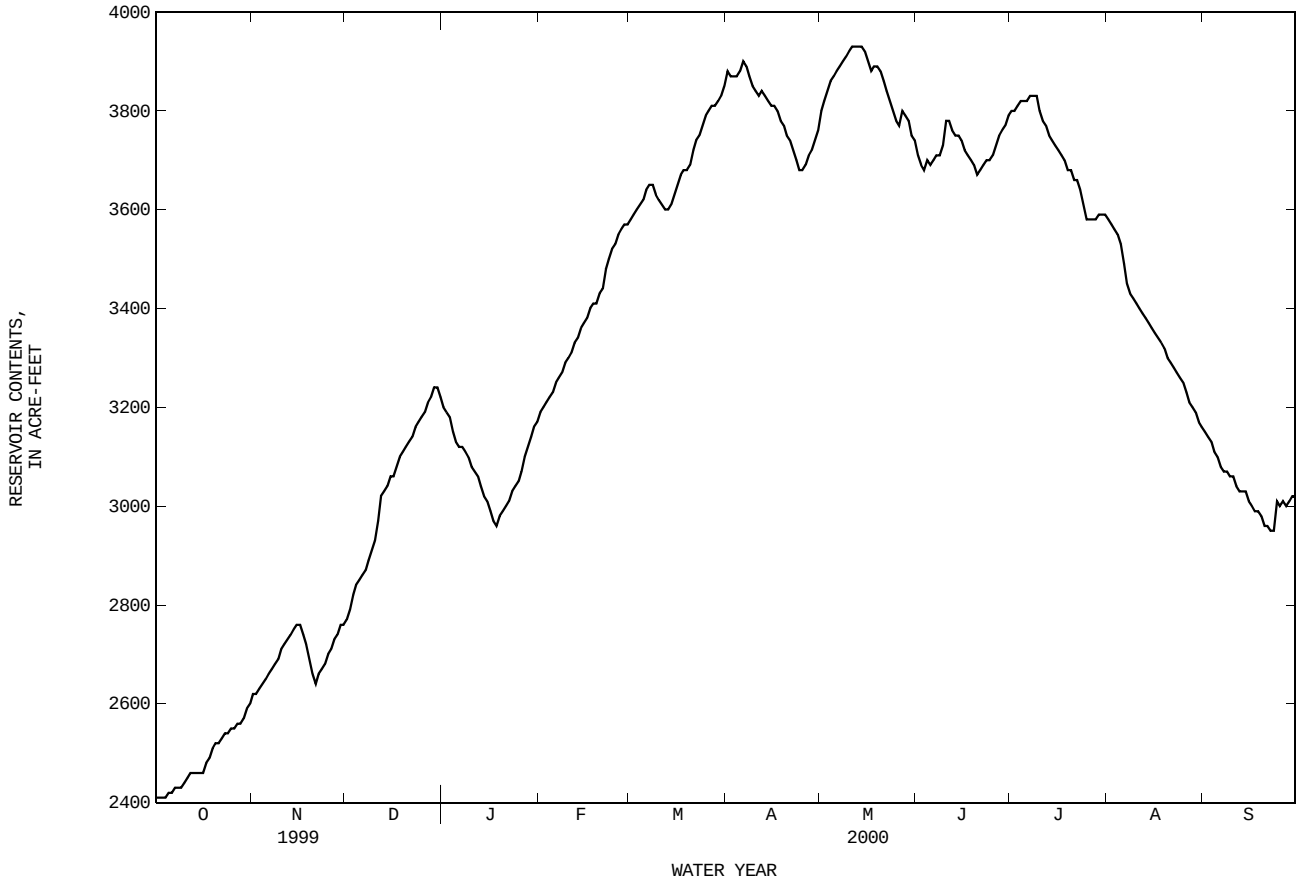
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2410	2620	2770	3200	3190	3580	3880	3800	3710	3800	3580	3150
2	2410	2620	2790	3190	3200	3590	3870	3820	3690	3800	3570	3140
3	2410	2630	2820	3180	3210	3600	3870	3840	3680	3810	3560	3130
4	2410	2640	2840	3150	3220	3610	3870	3860	3700	3820	3550	3110
5	2420	2650	2850	3130	3230	3620	3880	3870	3690	3820	3530	3100
6	2420	2660	2860	3120	3250	3640	3900	3880	3700	3820	3490	3080
7	2430	2670	2870	3120	3260	3650	3890	3890	3710	3830	3450	3070
8	2430	2680	2890	3110	3270	3650	3870	3900	3710	3830	3430	3070
9	2430	2690	2910	3100	3290	3630	3850	3910	3730	3830	3420	3060
10	2440	2710	2930	3080	3300	3620	3840	3920	3780	3800	3410	3060
11	2450	2720	2970	3070	3310	3610	3830	3930	3780	3780	3400	3040
12	2460	2730	3020	3060	3330	3600	3840	3930	3760	3770	3390	3030
13	2460	2740	3030	3040	3340	3600	3830	3930	3750	3750	3380	3030
14	2460	2750	3040	3020	3360	3610	3820	3930	3750	3740	3370	3030
15	2460	2760	3060	3010	3370	3630	3810	3920	3740	3730	3360	3010
16	2460	2760	3060	2990	3380	3650	3810	3900	3720	3720	3350	3000
17	2480	2740	3080	2970	3400	3670	3800	3880	3710	3710	3340	2990
18	2490	2720	3100	2960	3410	3680	3780	3890	3700	3700	3330	2990
19	2510	2690	3110	2980	3410	3680	3770	3890	3690	3680	3320	2980
20	2520	2660	3120	2990	3430	3690	3750	3880	3670	3680	3300	2960
21	2520	2640	3130	3000	3440	3720	3740	3860	3680	3660	3290	2960
22	2530	2660	3140	3010	3480	3740	3720	3840	3690	3660	3280	2950
23	2540	2670	3160	3030	3500	3750	3700	3820	3700	3640	3270	2950
24	2540	2680	3170	3040	3520	3770	3680	3800	3700	3610	3260	3010
25	2550	2700	3180	3050	3530	3790	3680	3780	3710	3580	3250	3000
26	2550	2710	3190	3070	3550	3800	3690	3770	3730	3580	3230	3010
27	2560	2730	3210	3100	3560	3810	3710	3800	3750	3580	3210	3000
28	2560	2740	3220	3120	3570	3810	3720	3790	3760	3580	3200	3010
29	2570	2760	3240	3140	3570	3820	3740	3780	3770	3590	3190	3020
30	2590	2760	3240	3160	---	3830	3760	3750	3790	3590	3170	3020
31	2600	---	3220	3170	---	3850	---	3740	---	3590	3160	---
MEAN	2490	2700	3040	3080	3380	3690	3800	3850	3720	3710	3360	3030
MAX	2600	2760	3240	3200	3570	3850	3900	3930	3790	3830	3580	3150
MIN	2410	2620	2770	2960	3190	3580	3680	3740	3670	3580	3160	2950
(+)	610.02	610.68	612.57	612.38	614.06	615.19	614.85	614.73	614.94	614.11	612.33	611.75
(@)	+190	+160	+460	-50	+400	+280	-90	-20	+50	-200	-430	-140

WTR YR 2000 MAX 3930 MIN 2410 (@) +610

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07331700 RANDELL LAKE NEAR DENNISON, TX--Continued



07332610 LAKE BONHAM NEAR BONHAM, TX

LOCATION.--Lat 33°39′06", long 96°07′48", Fannin County, Hydrologic Unit 11140101, on south shore of lake near raw water intake structure, 42 mi west of Paris, and approximately 98 miles from Fort Worth.

DRAINAGE AREA.--29.0 mi^2.

PERIOD OF RECORD.--Mar 1999 to current year.

GAGE.--Water-stage recorder. Data collection platform (DCP) with a Sutron bubbler are mounted in a 3 x 4 ft metal look-in shelter mounted about 3 ft above ground. Shelter is located inside fenced in area. Datum of gage is sea level. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam. The dam was completed and storage began Apr 28, 1970. Spillway cut through natural ground. The dam was built by the city of Bonham Water Authority to impound water for municipal use. There was no known diversion from the lake during the current water year. Conservation pool storage is 12,000 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	580.0
Crest of spillway	565.0
Emergency spillway	571.0

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 13,970 acre-ft, May 10, elevation, 565.97 ft; minimum contents, 10,240 acre-ft, Sep 30, elevation, 562.38 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 14,040 acre-ft, Mar 10, elevation, 566.04 ft; minimum contents, 9,820 acre-ft, Nov 22, elevation, 561.92 ft.

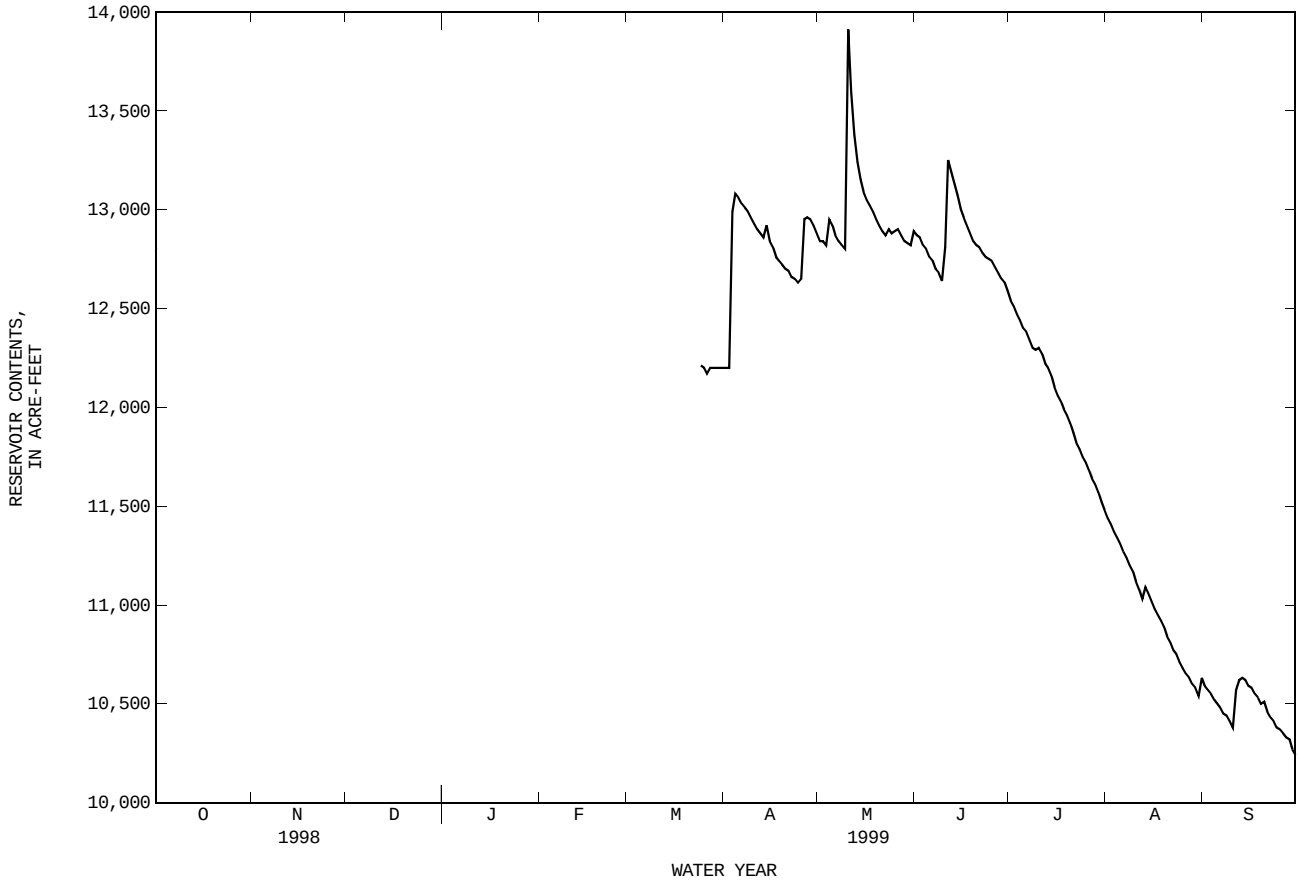
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	12200	12840	12870	12540	11440	10590
2	---	---	---	---	---	---	12200	12840	12860	12510	11410	10570
3	---	---	---	---	---	---	12990	12820	12820	12470	11370	10550
4	---	---	---	---	---	---	13080	12950	12800	12440	11340	10520
5	---	---	---	---	---	---	13060	12920	12760	12400	11310	10500
6	---	---	---	---	---	---	13030	12870	12740	12380	11270	10480
7	---	---	---	---	---	---	13010	12840	12700	12340	11240	10450
8	---	---	---	---	---	---	12990	12820	12680	12300	11200	10440
9	---	---	---	---	---	---	12960	12800	12640	12290	11170	10410
10	---	---	---	---	---	---	12930	13910	12810	12300	11120	10380
11	---	---	---	---	---	---	12900	13600	13250	12270	11080	10570
12	---	---	---	---	---	---	12880	13380	13190	12220	11030	10620
13	---	---	---	---	---	---	12860	13240	13130	12200	11090	10630
14	---	---	---	---	---	---	12920	13150	13070	12160	11060	10620
15	---	---	---	---	---	---	12840	13090	13000	12100	11020	10590
16	---	---	---	---	---	---	12810	13050	12960	12060	10980	10580
17	---	---	---	---	---	---	12760	13020	12920	12030	10950	10550
18	---	---	---	---	---	---	12740	12990	12880	11990	10920	10530
19	---	---	---	---	---	---	12720	12950	12840	11960	10890	10500
20	---	---	---	---	---	---	12700	12920	12820	11920	10840	10510
21	---	---	---	---	---	---	12690	12890	12810	11870	10810	10460
22	---	---	---	---	---	---	12660	12870	12780	11820	10770	10430
23	---	---	---	---	---	---	12650	12900	12760	11790	10750	10410
24	---	---	---	---	---	12210	12630	12880	12750	11750	10710	10380
25	---	---	---	---	---	12200	12650	12890	12740	11720	10680	10370
26	---	---	---	---	---	12170	12950	12900	12710	11680	10650	10350
27	---	---	---	---	---	12200	12960	12870	12680	11640	10630	10330
28	---	---	---	---	---	12200	12950	12840	12650	11610	10600	10320
29	---	---	---	---	---	12200	12920	12830	12630	11570	10580	10270
30	---	---	---	---	---	12200	12880	12820	12590	11520	10540	10240
31	---	---	---	---	---	12200	---	12890	---	11480	10630	---
MEAN	---	---	---	---	---	---	12820	12990	12830	12040	10970	10470
MAX	---	---	---	---	---	---	13080	13910	13250	12540	11440	10630
MIN	---	---	---	---	---	---	12200	12800	12590	11480	10540	10240
(+)	562.26	562.48	564.84	564.72	565.07	565.02	564.90	564.76	565.02	564.09	562.96	562.16
(@)	-110	+200	+2480	-150	+410	-50	-140	-170	+310	-1110	-1150	-720

WTR YR 2000 MAX 14020 MIN 9830 (@) -200

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07332610 LAKE BONHAM NEAR BONHAM, TX--Continued



07332610 LAKE BONHAM NEAR BONHAM, TX--Continued

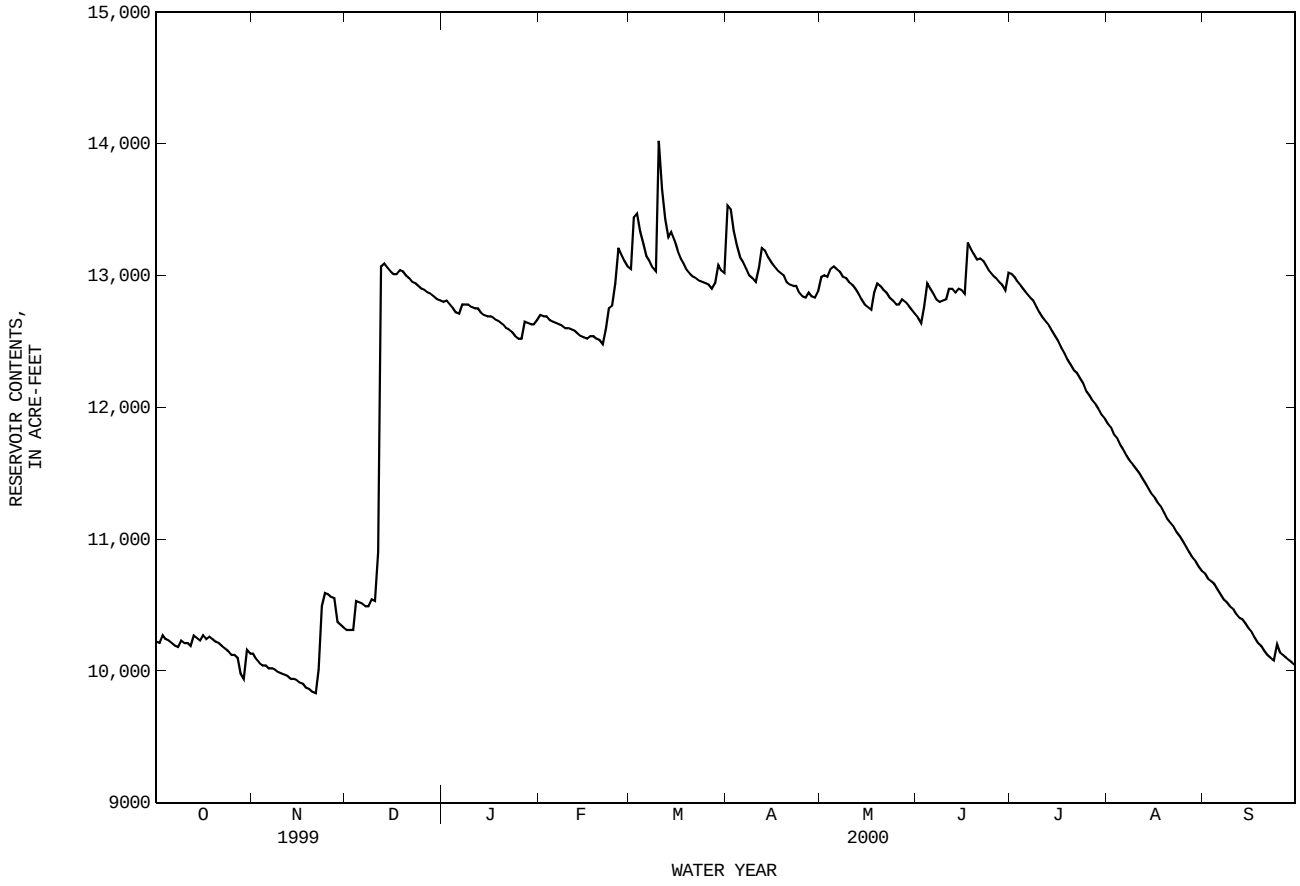
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10220	10130	10310	12800	12700	13050	13530	12990	12680	13010	11870	10740
2	10210	10090	10310	12810	12690	13440	13500	13000	12640	12990	11840	10700
3	10270	10060	10310	12780	12690	13470	13340	12990	12760	12950	11790	10680
4	10240	10040	10530	12750	12660	13330	13230	13050	12940	12920	11760	10660
5	10230	10040	10520	12720	12650	13240	13140	13070	12900	12890	11710	10620
6	10210	10020	10510	12710	12640	13150	13100	13050	12860	12860	11670	10580
7	10190	10020	10490	12780	12630	13110	13050	13030	12820	12830	11630	10540
8	10180	10010	10490	12780	12620	13060	13000	12990	12800	12810	11590	10520
9	10230	9990	10540	12780	12600	13030	12980	12980	12810	12760	11560	10490
10	10210	9980	10530	12760	12600	14020	12950	12950	12820	12720	11530	10470
11	10210	9970	10900	12750	12590	13660	13060	12930	12900	12680	11500	10430
12	10190	9960	13070	12750	12580	13430	13210	12900	12900	12650	11460	10400
13	10270	9940	13090	12720	12560	13290	13190	12860	12870	12620	11420	10390
14	10250	9940	13060	12700	12540	13330	13140	12820	12900	12580	11380	10360
15	10230	9930	13030	12690	12530	13270	13100	12780	12890	12540	11340	10320
16	10270	9910	13010	12690	12520	13190	13070	12760	12860	12500	11310	10290
17	10240	9900	13010	12680	12540	13130	13040	12740	13250	12450	11270	10250
18	10260	9870	13040	12660	12540	13090	13020	12870	13200	12410	11240	10210
19	10240	9860	13030	12650	12520	13040	13000	12940	13160	12360	11200	10190
20	10220	9840	13000	12630	12510	13010	12950	12920	13120	12320	11150	10150
21	10210	9830	12980	12600	12480	12990	12930	12890	13130	12280	11120	10120
22	10190	10010	12950	12590	12600	12980	12920	12870	13110	12260	11090	10100
23	10170	10490	12940	12570	12750	12960	12920	12830	13070	12220	11050	10080
24	10150	10590	12920	12540	12770	12950	12870	12810	13030	12180	11020	10200
25	10120	10580	12900	12520	12940	12940	12840	12780	13000	12120	10980	10140
26	10120	10560	12890	12520	13210	12930	12830	12780	12980	12090	10940	10120
27	10100	10550	12870	12650	13160	12900	12870	12820	12950	12050	10900	10100
28	9980	10370	12860	12640	13110	12940	12840	12800	12930	12020	10860	10080
29	9940	10350	12840	12630	13070	13080	12830	12770	12890	11980	10830	10060
30	10160	10330	12820	12630	---	13040	12880	12740	13020	11940	10790	10040
31	10130	---	12810	12660	---	13020	---	12710	---	11910	10760	---
MEAN	10190	10110	12080	12680	12690	13160	13040	12880	12940	12480	11310	10330
MAX	10270	10590	13090	12810	13210	14020	13530	13070	13250	13010	11870	10740
MIN	9940	9830	10310	12520	12480	12900	12830	12710	12640	11910	10760	10040
(+)	562.26	562.48	564.84	564.72	565.07	565.02	564.90	564.76	565.02	564.09	562.96	562.16
(@)	-110	+200	+2480	-150	+410	-50	-140	-170	+310	-1110	-1150	-720

WTR YR 2000 MAX 14020 MIN 9830 (@) -200

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07332610 LAKE BONHAM NEAR BONHAM, TX--Continued



07335390 PAT MAYSE LAKE NEAR CHICOTA, TX

LOCATION.--Lat 33°51′10", long 93°32′38", Lamar County, Hydrologic Unit 11140101, on upstream side of dam on Sanders Creek, 2,800 ft to right of outlet channel, 2.0 mi southeast of Chicota, and 4.6 mi upstream from mouth.

DRAINAGE AREA.--175 mi^2.

PERIOD OF RECORD.--Oct 1967 to Sep 1986; Oct 1999 to Sep 2000.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 10, 1968, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam about 7,080 ft long, including a spillway 100 ft wide located near right abutment of dam. The dam was completed and deliberate impoundment began Sep 28, 1967. The flood-control outlet works consists of an uncontrolled morning-glory type drop-inlet spillway that is connected to a 7.25-foot-diameter concrete conduit through the dam. A 24- and 12-inch diameter low-flow pipe is provided for additional outlets. The lake was built for flood control, municipal, and industrial water supply, recreation, fish and wildlife conservation, and for channel improvements on Sanders Creek. Water is diverted from lake for municipal and industrial uses by the city of Paris. Conservation pool storage is 124,500 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	488.50
Crest of spillway	477.00
Top of flood control pool	460.50
Top of conservation pool	452.05
Crest of morning-glory-type drop-inlet spillway	450.60

COOPERATION.--Area and capacity tables provided by the U.S. Army Corps of Engineers. Record of contents provided by the U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 208,000 acre-ft, Dec 11 and 12, 1971 elevation, 462.87 ft; minimum since conservation pool was first reached on Apr 20, 1968, 100,900 acre-ft, Nov 10, 1978 elevation, 446.80 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 136,900 acre-ft, Aug 15, elevation, 454.00 ft; minimum contents, 101,400 acre-ft, Nov 21, 22, elevation, 448.05 ft.

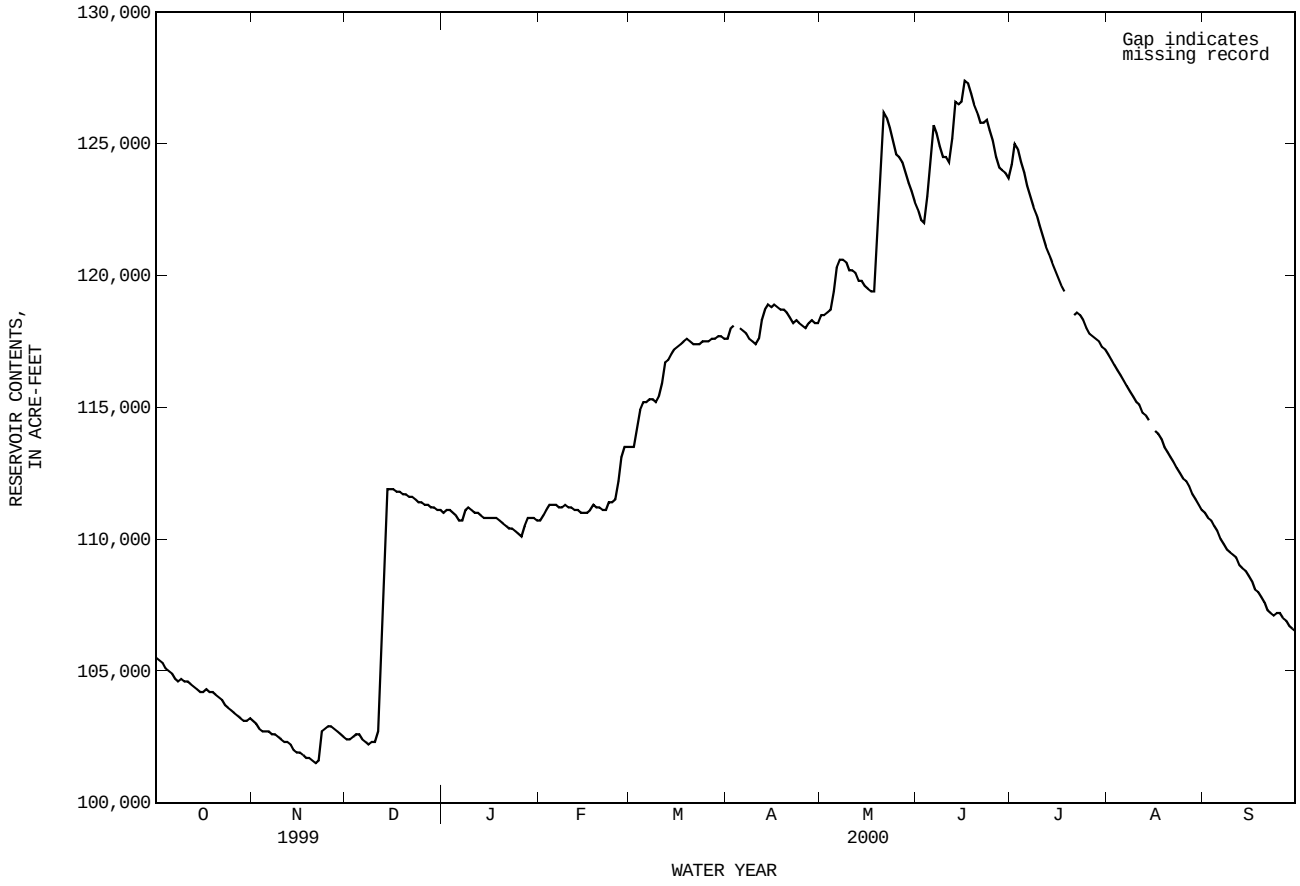
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	105500	103100	102400	111000	110700	113500	117600	118500	122500	124200	117000	111000
2	105400	103000	102400	111100	110900	113500	118000	118500	122100	125000	116800	110800
3	105300	102800	102500	111100	111100	114200	118100	118600	122000	124800	116600	110700
4	105100	102700	102600	111000	111300	114900	---	118700	123000	124300	116400	110500
5	105000	102700	102600	110900	111300	115200	118000	119400	124400	123900	116200	110300
6	104900	102700	102400	110700	111300	115200	117900	120300	125700	123400	116000	110000
7	104700	102600	102300	110700	111200	115300	117800	120600	125400	123000	115800	109800
8	104600	102600	102200	111100	111200	115300	117600	120600	124900	122600	115600	109600
9	104700	102500	102300	111200	111300	115200	117500	120500	124500	122300	115400	109500
10	104600	102400	102300	111100	111200	115400	117400	120200	124500	121900	115200	109400
11	104600	102300	102700	111000	111200	115900	117600	120200	124300	121500	115100	109300
12	104500	102300	105500	111000	111100	116700	118300	120100	125200	121100	114800	109000
13	104400	102200	108900	110900	111100	116800	118700	119800	126600	120800	114700	108900
14	104300	102000	111900	110800	111000	117000	118900	119800	126500	120500	114500	108800
15	104200	101900	111900	110800	111000	117200	118800	119600	126600	120200	---	108600
16	104200	101900	111900	110800	111000	117300	118900	119500	127400	119900	114100	108400
17	104300	101800	111800	110800	111100	117400	118800	119400	127300	119600	114000	108100
18	104200	101700	111800	110800	111300	117500	118700	119400	126900	119400	113800	108000
19	104200	101700	111700	110700	111200	117600	118700	121400	126500	---	113500	107800
20	104100	101600	111700	110600	111200	117500	118600	124000	126200	---	113300	107600
21	104000	101500	111600	110500	111100	117400	118400	126200	125800	118500	113100	107300
22	103900	101600	111600	110400	111100	117400	118200	126000	125800	118600	112900	107200
23	103700	102700	111500	110400	111400	117400	118300	125600	125900	118500	112700	107100
24	103600	102800	111400	110300	111400	117500	118200	125100	125500	118300	112500	107200
25	103500	102900	111400	110200	111500	117500	118100	124600	125100	118000	112300	107200
26	103400	102900	111300	110100	112200	117500	118000	124500	124500	117800	112200	107000
27	103300	102800	111300	110500	113100	117600	118200	124300	124100	117700	112000	106900
28	103200	102700	111200	110800	113500	117600	118300	123900	124000	117600	111700	106700
29	103100	102600	111200	110800	113500	117700	118200	123500	123900	117500	111500	106600
30	103100	102500	111100	110800	---	117700	118200	123200	123700	117300	111300	106500
31	103200	---	111100	110700	---	117600	---	122800	---	117200	111100	---
MEAN	104200	102400	108000	110800	111400	116500	---	121600	125000	---	---	108500
MAX	105500	103100	111900	111200	113500	117700	---	126200	127400	---	---	111000
MIN	103100	101500	102200	110100	110700	113500	---	118500	122000	---	---	106500
(+)	448.38	448.25	449.79	449.72	450.21	450.91	451.02	451.77	451.92	450.85	449.79	448.98
(@)	---	-700	+8600	-400	+2800	+4100	+600	+4600	+900	-6100	-6100	-4600

WTR YR 2000 MAX 127400 MIN 101500

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07335390 PAT MAYSE LAKE NEAR CHICOTA, TX--Continued



07335500 RED RIVER AT ARTHUR CITY, TX

LOCATION.--Lat 33°52′32", long 95°30′06", in NW 1/4 sec.11, T.8 S., R.17 E., Choctaw County, OK, Hydrologic Unit 11140101, on right downstream bank of bridge on U.S. Highway 271 at Arthur City, 10.6 mi downstream from Muddy Boggy River, 26.0 mi upstream from Kiamichi River, and at mile 633.1.

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

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

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

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

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

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

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

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

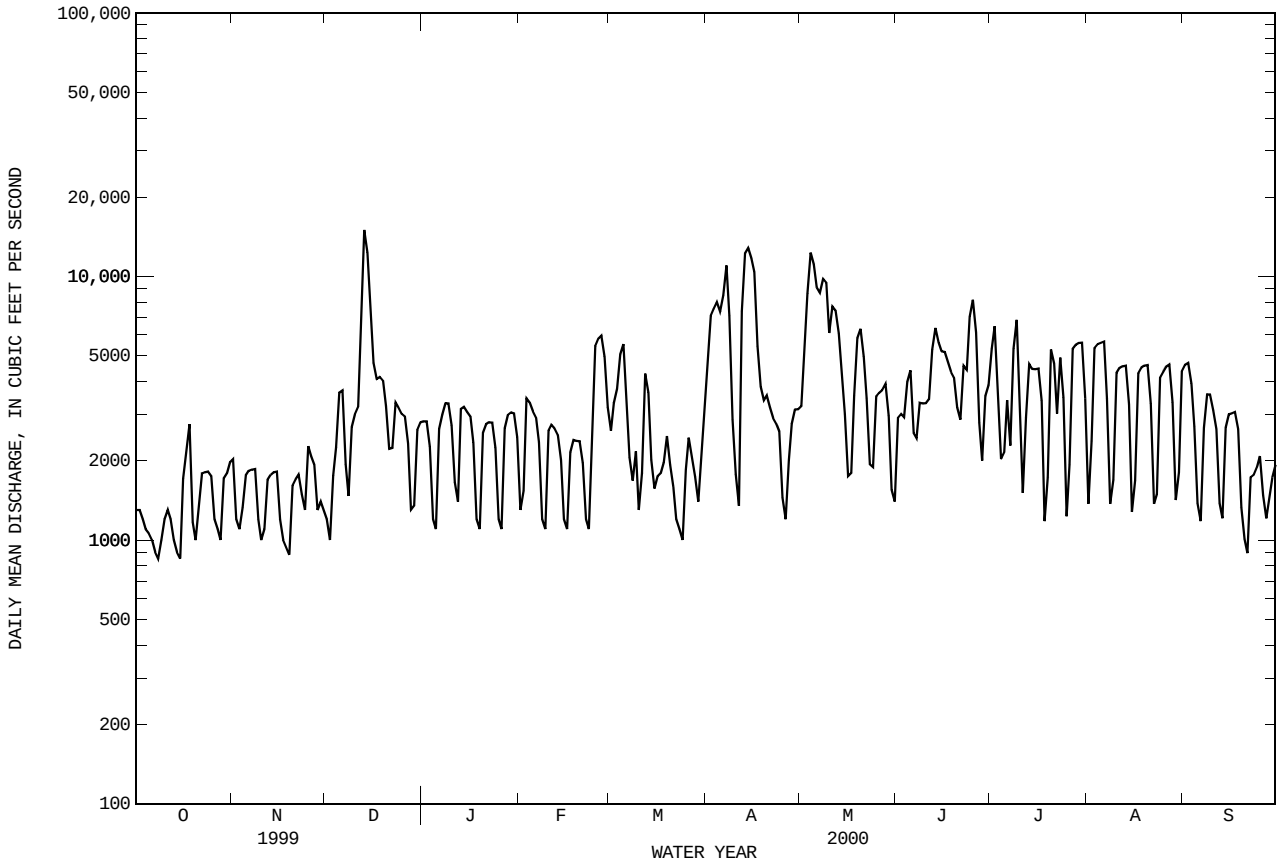
MEAN	6881	7339	7332	6925	8343	10690	11640	17010	18030	7810	4911	4807
MAX	40240	37170	32340	39930	24200	38610	55500	103900	83820	27700	34840	19010
(WY)	1982	1975	1992	1992	1946	1987	1990	1990	1957	1989	1950	1950
MIN	263	242	894	1126	1138	1118	1344	2837	2074	1586	1108	859
(WY)	1957	1957	1957	1964	1959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

e Estimated

07335500 RED RIVER AT ARTHUR CITY, TX--Continued

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

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



07335600 LAKE CROOK NEAR PARIS, TX

LOCATION.--Lat 33°43′42", long 95°34′00", Lamar County, Hydrologic Unit 11140101, Lamar County, 3 mi from city of Paris, 1 mi from Lamar County Road #31700. Gage is located on intake structure.

DRAINAGE AREA.--52 mi^2

PERIOD OF RECORD.--Mar 24, 1999 to current year.

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

REMARKS.--Lake Crook dam is an earthfill 3,100 ft long with a maximum height of 38 ft and a crown width of 20 ft. A concrete overflow type spillway 300 ft long is located near the center of the dam. Lake Crook is about 2.7 miles in length with an average width of 0.6 mi, and the shoreline is approximately 12 miles in length. The lake is owned by the City of Paris. Conservation pool storage is 9,964 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	488.0
Crest of spillway	476.0
Top of conservation pool	477.0
Stream bed	450.0

COOPERATION.--Capacity table 1-C was provided by Texas Water Development Board and was put into use Mar 24, 1999.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 9,360 acre-ft, May 10, elevation, 476.57 ft; minimum contents, 6,270 acre-ft, Sep 29, 30, elevation, 473.86 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 11,020 acre-ft, May 19, elevation, 477.73 ft; minimum contents, 5,940 acre-ft, Dec 8, elevation, 473.49 ft.

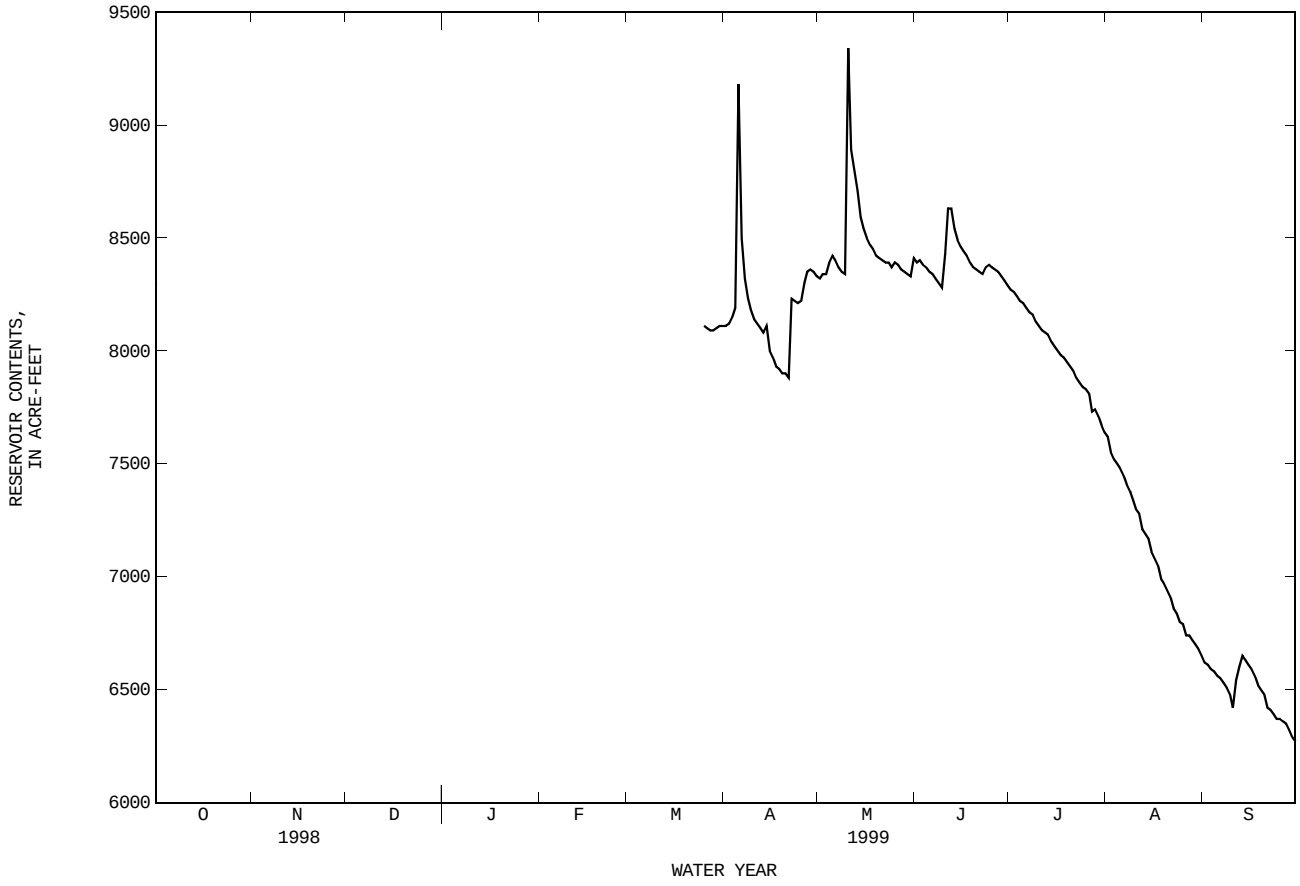
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	8110	8320	8390	8270	7620	6620
2	---	---	---	---	---	---	8120	8340	8400	8260	7550	6610
3	---	---	---	---	---	---	8150	8340	8380	8240	7520	6590
4	---	---	---	---	---	---	8190	8390	8370	8220	7500	6580
5	---	---	---	---	---	---	9180	8420	8350	8210	7480	6560
6	---	---	---	---	---	---	8500	8400	8340	8190	7450	6550
7	---	---	---	---	---	---	8320	8370	8320	8170	7410	6530
8	---	---	---	---	---	---	8230	8350	8300	8160	7380	6510
9	---	---	---	---	---	---	8180	8340	8280	8130	7340	6480
10	---	---	---	---	---	---	8140	9340	8430	8110	7300	6420
11	---	---	---	---	---	---	8120	8890	8630	8090	7280	6540
12	---	---	---	---	---	---	8100	8800	8630	8080	7210	6600
13	---	---	---	---	---	---	8080	8710	8540	8070	7190	6650
14	---	---	---	---	---	---	8110	8590	8490	8040	7170	6630
15	---	---	---	---	---	---	8000	8540	8460	8020	7110	6610
16	---	---	---	---	---	---	7970	8500	8440	8000	7080	6590
17	---	---	---	---	---	---	7930	8470	8420	7980	7050	6560
18	---	---	---	---	---	---	7920	8450	8390	7970	6990	6520
19	---	---	---	---	---	---	7900	8420	8370	7950	6970	6500
20	---	---	---	---	---	---	7900	8410	8360	7930	6940	6480
21	---	---	---	---	---	---	7880	8400	8350	7910	6910	6420
22	---	---	---	---	---	---	8230	8390	8340	7880	6860	6410
23	---	---	---	---	---	---	8220	8390	8370	7860	6840	6390
24	---	---	---	---	---	---	8210	8370	8380	7840	6800	6370
25	---	---	---	---	---	8110	8220	8390	8370	7830	6790	6370
26	---	---	---	---	---	8100	8300	8380	8360	7810	6740	6360
27	---	---	---	---	---	8090	8350	8360	8350	7730	6740	6350
28	---	---	---	---	---	8090	8360	8350	8330	7740	6720	6320
29	---	---	---	---	---	8100	8350	8340	8310	7710	6700	6290
30	---	---	---	---	---	8110	8330	8330	8290	7670	6680	6270
31	---	---	---	---	---	8110	---	8410	---	7640	6650	---
MAX	---	---	---	---	---	---	9180	9340	8630	8270	7620	6650
MIN	---	---	---	---	---	---	7880	8320	8280	7640	6650	6270
(+)						475.61	475.83	475.91	475.79	475.14	474.23	473.86
(@)							+220	+80	-120	-650	-990	-380

WTR YR 1999 MAX 9360 MIN 6270

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07335600 LAKE CROOK NEAR PARIS, TX--Continued



07335600 LAKE CROOK NEAR PARIS, TX--Continued

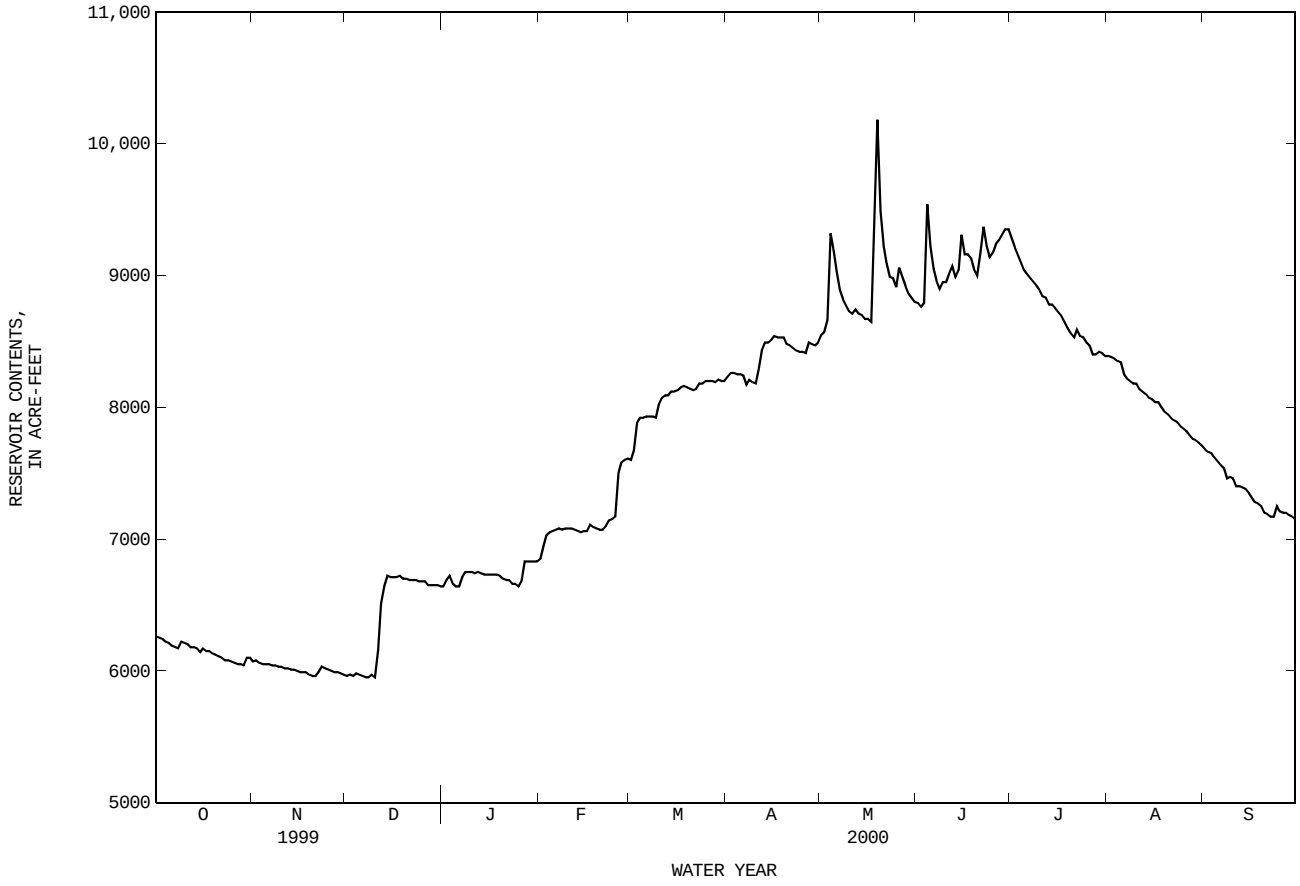
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6260	6070	5960	6640	6850	7600	8230	8550	8790	9280	8390	7680
2	6250	6080	5970	6690	6950	7670	8260	8570	8760	9220	8380	7660
3	6240	6060	5960	6720	7030	7880	8260	8660	8790	9160	8370	7650
4	6220	6050	5980	6660	7050	7920	8250	9320	9540	9100	8350	7620
5	6210	6050	5970	6640	7060	7920	8250	9180	9220	9040	8340	7590
6	6190	6050	5960	6640	7070	7930	8240	9030	9050	9010	8250	7560
7	6180	6040	5950	6710	7080	7930	8170	8890	8960	8980	8220	7540
8	6170	6040	5950	6750	7070	7930	8210	8820	8900	8950	8200	7460
9	6220	6030	5970	6750	7080	7920	8190	8770	8950	8920	8180	7470
10	6210	6030	5950	6750	7080	8020	8180	8730	8950	8890	8180	7460
11	6200	6020	6160	6740	7080	8070	8300	8710	9010	8840	8140	7400
12	6180	6020	6510	6750	7070	8090	8430	8740	9070	8830	8120	7400
13	6180	6010	6640	6740	7060	8090	8490	8710	8990	8780	8100	7390
14	6170	6010	6720	6730	7050	8120	8490	8700	9040	8780	8070	7380
15	6140	6000	6710	6730	7060	8120	8510	8670	9310	8750	8060	7350
16	6170	5990	6710	6730	7060	8130	8540	8670	9160	8720	8040	7310
17	6150	5990	6710	6730	7110	8150	8530	8650	9160	8690	8040	7280
18	6150	5990	6720	6730	7090	8160	8530	9330	9130	8650	8000	7270
19	6130	5970	6700	6720	7080	8150	8530	10180	9050	8600	7970	7250
20	6120	5960	6700	6700	7070	8140	8480	9490	9000	8560	7950	7200
21	6110	5960	6690	6690	7070	8130	8470	9220	9170	8530	7920	7190
22	6100	5990	6690	6690	7100	8140	8450	9090	9370	8590	7900	7170
23	6080	6030	6690	6660	7140	8180	8430	8990	9220	8540	7890	7170
24	6080	6020	6680	6660	7150	8180	8420	8980	9140	8530	7860	7250
25	6070	6010	6680	6640	7170	8200	8420	8910	9170	8490	7840	7210
26	6060	6000	6680	6680	7500	8200	8410	9060	9240	8470	7820	7200
27	6050	5990	6650	6830	7580	8200	8490	8990	9270	8400	7790	7200
28	6050	5990	6650	6830	7600	8190	8480	8920	9310	8400	7760	7180
29	6040	5980	6650	6830	7610	8210	8470	8860	9350	8420	7750	7170
30	6100	5970	6650	6830	---	8200	8490	8830	9350	8410	7730	7150
31	6100	---	6640	6830	---	8200	---	8800	---	8390	7710	---
MAX	6260	6080	6720	6830	7610	8210	8540	10180	9540	9280	8390	7680
MIN	6040	5960	5950	6640	6850	7600	8170	8550	8760	8390	7710	7150
(+)	473.67	473.52	474.22	474.39	475.11	475.70	475.99	476.20	476.57	475.89	475.21	474.68
(@)	-170	-130	+670	+190	+780	+590	+290	+310	+550	-960	-680	-560

WTR YR 2000 MAX 10180 MIN 5950 (@) +880

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07335600 LAKE CROOK NEAR PARIS, TX--Continued



07337000 RED RIVER AT INDEX, AR

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

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

WATER-DISCHARGE RECORDS

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

REVISED RECORDS.--WSP 1211: Drainage area.

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

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

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

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

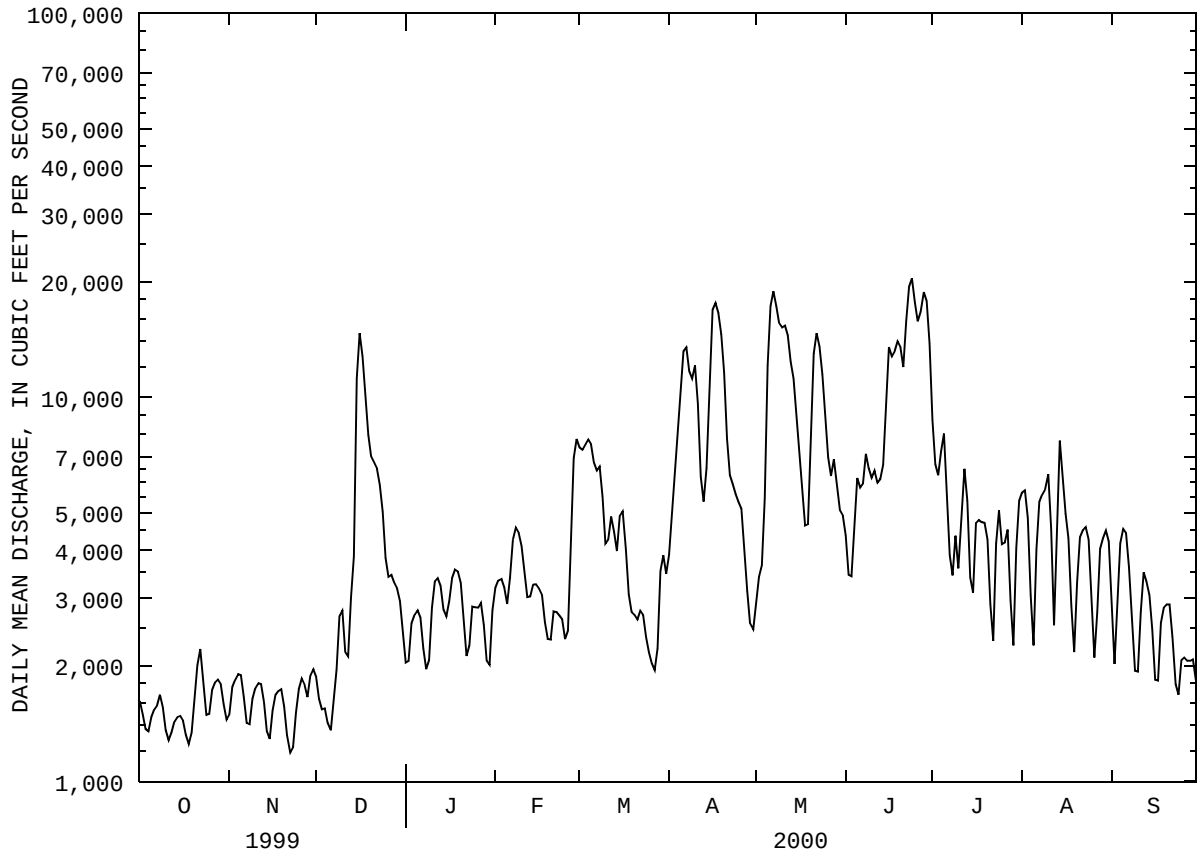
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1944 - 2000, BY WATER YEAR (WY)

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

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

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

07337000 RED RIVER AT INDEX, AR--Continued



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

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

DATE	TIME	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)
NOV										
02...	1245	81213	80513	1780	767	86	8.4	8.1	1580	16.4
JAN										
05...	1415	81213	80513	4260	750	110	12.2	8.4	1580	9.8
MAR										
01...	1420	81213	80513	7410	749	94	8.9	7.8	721	16.8
APR										
05...	1155	81213	80513	10200	768	85	8.4	8.4	691	16.0

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM PERCENT (00932)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
NOV										
02...	340	87	29	6.5	4	180	53	240	260	.100
JAN										
05...	370	94	33	5.9	4	160	48	240	270	.080
MAR										
01...	180	48	14	4.2	2	70	45	91	110	.100
APR										
05...	160	45	12	3.8	2	64	46	89	100	.090

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

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

DATE	TIME	AGENCY ANA-LYZING SAMPLE (CODE NUMBER) (00028)	AGENCY COL-LECTING SAMPLE (CODE NUMBER) (00027)	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	BARO-METRIC PRES-SURE (MM OF HG) (00025)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN, DIS-SOLVED (MG/L) (00300)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
JUL											
12...	0645	81213	80513	6320	762	81	5.9	7.7	1220	31.8	270
12...	0650	80513	80513	--	762	83	6.0	7.7	1210	31.7	--
12...	0652	80513	80513	--	762	81	5.9	7.7	1220	31.8	--
12...	0654	80513	80513	--	762	80	5.8	7.7	1220	31.8	--
12...	0656	80513	80513	--	762	80	5.8	7.7	1220	31.8	--
12...	0658	80513	80513	--	762	80	5.8	7.7	1220	31.8	--
12...	0700	80513	80513	--	762	81	5.9	7.8	1220	31.8	--
12...	0702	80513	80513	--	762	82	6.0	7.8	1220	31.8	--
12...	0704	80513	80513	--	762	82	6.0	7.8	1210	31.8	--
12...	0706	80513	80513	--	762	82	6.0	7.8	1200	31.8	--
12...	0708	80513	80513	--	762	82	6.0	7.8	1200	31.8	--
SEP											
13...	1300	81213	80513	3240	760	80	6.4	7.4	2140	26.0	440

07337000 RED RIVER AT INDEX, AR--Continued

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

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

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

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

07342465 SOUTH SULPHUR RIVER AT COMMERCE, TX

LOCATION.--Lat 33°12′42", long 95°54′50", Hunt County, Hydrologic Unit 11140301, on right bank at downstream side of bridge on south-bound State Highway 50, 13 mi upstream from Dunbar Creek, and 2.8 mi south of Commerce.

DRAINAGE AREA.--150 mi^2.

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

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 460.74 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records fair. No known regulation or diversions. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,700 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 3	0630	3,440	16.47	Jun 22	0515	4,000	17.89
Jun 4	1600	3,760	17.29				

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

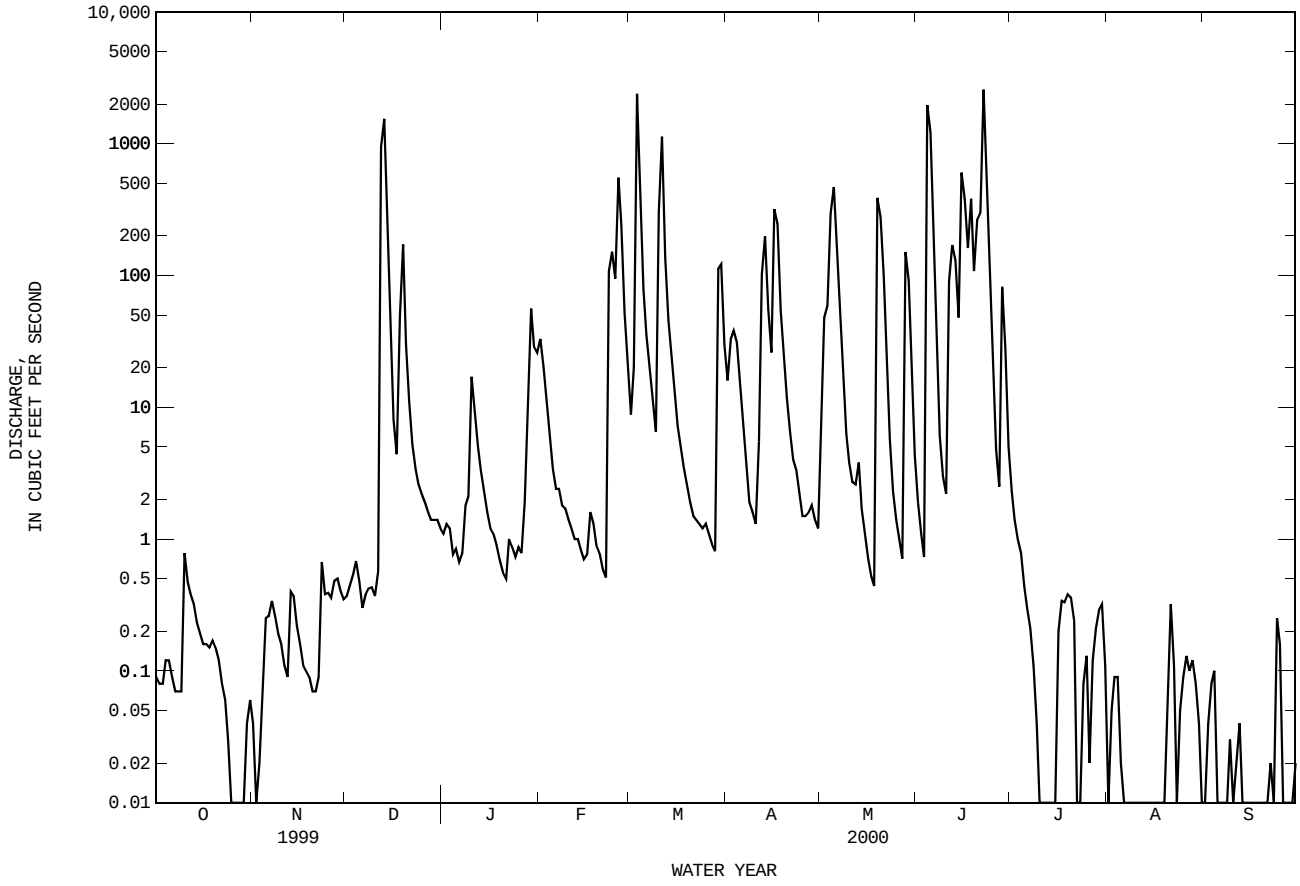
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.09	.04	.37	1.1	33	8.8	16	9.7	1.9	2.3	.00	.01
2	.08	.01	.45	1.3	20	20	33	48	1.1	1.4	.05	.04
3	.08	.02	.54	1.2	11	2380	38	59	.73	.99	.09	.08
4	.12	.09	.68	.76	6.1	660	31	296	1960	.78	.09	.10
5	.12	.25	.48	.84	3.4	79	15	470	1230	.44	.02	.00
6	.09	.26	.30	.67	2.4	36	7.2	121	92	.30	.00	.00
7	.07	.34	.38	.78	2.4	20	3.6	38	21	.21	.00	.00
8	.07	.26	.42	1.8	1.8	11	1.9	15	6.1	.11	.00	.00
9	.07	.19	.43	2.1	1.7	6.5	1.6	6.3	3.0	.04	.01	.03
10	.78	.16	.37	17	1.4	304	1.3	3.8	2.2	.00	.00	.00
11	.47	.11	.57	8.9	1.2	1130	5.5	2.7	90	.00	.00	.02
12	.38	.09	942	5.0	1.0	138	102	2.6	170	.00	.00	.04
13	.32	.40	1540	3.3	1.0	46	198	3.8	130	.00	.00	.00
14	.23	.37	107	2.3	.82	24	56	1.7	48	.00	.00	.00
15	.19	.22	23	1.6	.70	13	26	1.1	602	.00	.00	.00
16	.16	.16	8.1	1.2	.76	7.2	318	.72	381	.20	.00	.00
17	.16	.11	4.4	1.1	1.6	4.9	247	.52	161	.34	.00	.00
18	.15	.10	49	.90	1.3	3.5	54	.44	382	.33	.00	.00
19	.17	.09	171	.69	.90	2.6	24	387	108	.38	.00	.00
20	.15	.07	30	.56	.78	1.9	12	277	263	.36	.04	.00
21	.12	.07	11	.50	.59	1.5	6.6	99	298	.24	.32	.01
22	.08	.09	5.2	1.0	.51	1.4	4.0	23	2570	.01	.11	.02
23	.06	.67	3.4	.87	108	1.3	3.3	5.7	249	.00	.01	.01
24	.03	.38	2.6	.73	152	1.2	2.3	2.3	47	.08	.05	.25
25	.00	.39	2.2	.87	95	1.3	1.5	1.4	13	.13	.09	.16
26	.00	.36	1.9	.78	550	1.1	1.5	1.0	4.8	.02	.13	.00
27	.00	.48	1.6	1.9	240	.92	1.6	.71	2.5	.12	.10	.00
28	.00	.50	1.4	10	52	.81	1.8	151	82	.21	.12	.00
29	.00	.40	1.4	56	23	112	1.4	91	28	.29	.08	.00
30	.04	.35	1.4	29	---	121	1.2	17	5.0	.32	.04	.02
31	.06	---	1.2	26	---	30	---	4.3	---	.11	.01	---
TOTAL	4.34	7.03	2912.79	180.75	1314.36	5168.93	1216.3	2140.79	8952.33	9.71	1.36	0.79
MEAN	.14	.23	94.0	5.83	45.3	167	40.5	69.1	298	.31	.044	.026
MAX	.78	.67	1540	56	550	2380	318	470	2570	2.3	.32	.25
MIN	.00	.01	.30	.50	.51	.81	1.2	.44	.73	.00	.00	.00
AC-FT	8.6	14	5780	359	2610	10250	2410	4250	17760	19	2.7	1.6
CFSM	.00	.00	.63	.04	.30	1.11	.27	.46	1.99	.00	.00	.00
IN.	.00	.00	.72	.04	.33	1.28	.30	.53	2.22	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2000, BY WATER YEAR (WY)

MEAN	159	171	319	143	196	180	138	223	107	55.9	5.00	14.8
MAX	451	646	804	513	682	346	411	734	433	333	32.0	91.5
(WY)	1994	1997	1992	1998	1997	1992	1997	1992	1992	1994	1992	1994
MIN	.008	.093	.33	5.83	.12	8.01	10.4	2.53	.93	.000	.005	.002
(WY)	1993	1996	1996	2000	1996	1996	1996	1998	1996	1998	1993	1993

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1992 - 2000	
ANNUAL TOTAL	21491.44		21909.48			
ANNUAL MEAN	58.9		59.9		143	
HIGHEST ANNUAL MEAN					297	1992
LOWEST ANNUAL MEAN					7.81	1996
HIGHEST DAILY MEAN	3050	Jan 29	2570	Jun 22	8230	Oct 20 1993
LOWEST DAILY MEAN	.00	Aug 5	.00	Oct 25	.00	Oct 2 1991
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 5	.00	Aug 10	.00	Oct 7 1991
INSTANTANEOUS PEAK FLOW			4000	Jun 22	14900	Dec 4 1998
INSTANTANEOUS PEAK STAGE			17.89	Jun 22	29.44	Dec 4 1998
ANNUAL RUNOFF (AC-FT)	42630		43460		103300	
ANNUAL RUNOFF (CFSM)	.39		.40		.95	
ANNUAL RUNOFF (INCHES)	5.33		5.43		12.92	
10 PERCENT EXCEEDS	65		107		221	
50 PERCENT EXCEEDS	1.1		.87		2.4	
90 PERCENT EXCEEDS	.03		.00		.00	

07342465 SOUTH SULPHUR RIVER AT COMMERCE, TX--Continued



07342470 SOUTH SULPHUR RIVER NEAR COMMERCE, TX

LOCATION.--Lat 33°13′11", long 95°51′45", Hunt County, Hydrologic Unit 11140301, at State Highway 11, 0.7 mi upstream from St. Louis Southwestern Railroad bridge, 1.8 mi downstream from Dunbar Creek, and 3.0 mi southeast of Commerce.

DRAINAGE AREA.--189 mi^2.

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1987 to current year.
BIOCHEMICAL DATA: Oct 1987 to current year.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)
FEB											
29...	0830	22	295	7.9	16.3	76	7.4	--	2.4	>15000	670
MAY											
31...	1225	14	382	7.7	29.0	72	7.2	93	2.6	4800	680
JUL											
11...	1321	1.7	677	9.1	33.0	7.9	8.8	124	7.4	160	97
AUG											
15...	1040	.03	780	8.9	28.0	31	8.2	106	2.5	K130	120

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
FEB											
29...	98	--	34.3	2.99	17.9	.8	3.9	100	21.4	8.1	.2
MAY											
31...	120	3	41.1	3.03	27.1	1	5.0	110	25.0	13.9	.3
JUL											
11...	110	--	36.5	3.83	102	4	8.5	180	66.6	53.7	.4
AUG											
15...	80	--	27.0	3.11	131	6	11.6	160	72.0	70.7	.4

DATE	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)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
FEB											
29...	10.6	196	167	160	1.25	.085	1.34	.318	1.0	1.3	.192
MAY											
31...	9.2	233	216	154	5.09	.110	5.20	.066	1.0	1.1	.346
JUL											
11...	6.2	428	412	23	5.83	.093	5.92	<.020	--	.94	1.03
AUG											
15...	4.0	494	462	67	10.0	.123	10.1	.028	.99	1.0	1.51

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
FEB											
29...	.160	.491	15	8	<1	3.0	50	<1	<1.0	<1.0	<1
MAY											
31...	.297	.911	12	7	<1	2.9	62	<1	<1.0	<.8	<1
JUL											
11...	.984	3.02	14	--	--	--	--	--	--	--	--
AUG											
15...	1.29	3.95	9.5	4	<1	3.8	40	<1	<1.0	<.8	2

07342470 SOUTH SULPHUR RIVER NEAR COMMERCE, TX--Continued

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

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB											
29...	3	50	<1	17	<.2	3	3	<2.4	<1	3	1
MAY											
31...	4	E10	<1	11	<.2	3	4	<2.4	<1	6	<1
JUL											
11...	--	E10	--	8	--	--	--	--	--	--	--
AUG											
15...	4	<10	<1	2	E.1	110	3	<2.4	<1	4	<1

07342480 MIDDLE SULPHUR RIVER AT COMMERCE, TX

LOCATION.--Lat 33°15'59", long 95°54'55", Hunt County, Hydrologic Unit 11140301, at right end of bridge on State Highway 11 at downstream side of highway embankment, 1.5 mi upstream from Willow Creek and 1.5 mi northwest of post office in Commerce.

DRAINAGE AREA.--44.1 mi^2.

WATER-DISCHARGE RECORDS

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

GAGE.--Water-stage recorder and crest-stage gage. Datum is 460.00 ft above sea level. No flow at times. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Mar 3	0900	1,300	13.72	Jun 22	0915	1,840	14.29

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

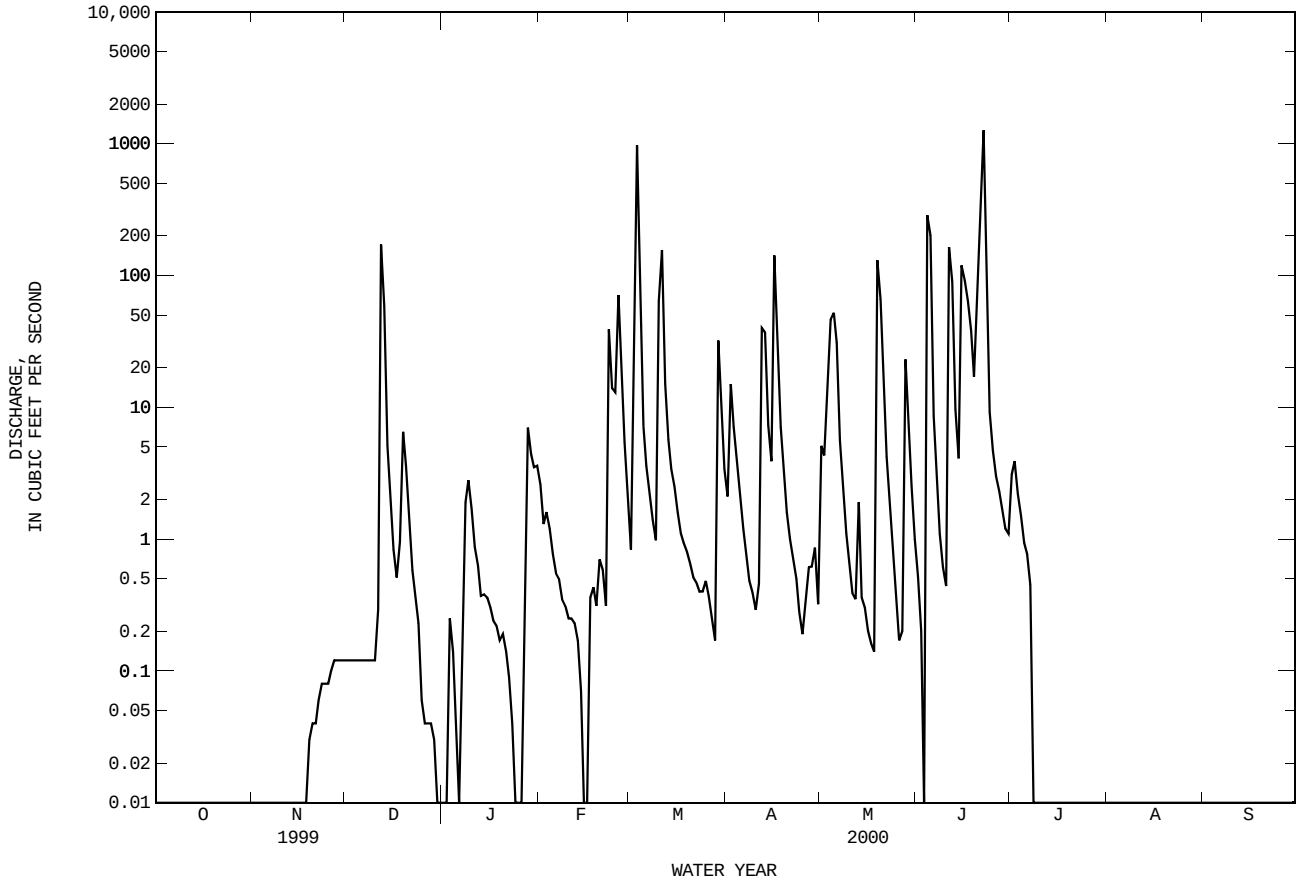
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.12	.00	2.6	.83	2.1	5.1	.52	3.1	.00	.00
2	.00	.00	.12	.01	1.3	55	15	4.3	.20	3.9	.00	.00
3	.00	.00	.12	.25	1.6	969	7.1	13	.00	2.2	.00	.00
4	.00	.00	.12	.14	1.2	76	4.1	46	287	1.5	.00	.00
5	.00	.00	.12	.04	.77	7.2	2.1	52	202	.93	.00	.00
6	.00	.00	.12	.00	.55	3.6	1.2	31	8.6	.77	.00	.00
7	.00	.00	.12	.07	.50	2.3	.76	5.6	3.1	.45	.00	.00
8	.00	.00	.12	1.9	.35	1.4	.48	2.3	1.1	.00	.00	.00
9	.00	.00	.12	2.8	.31	.98	.39	1.1	.61	.00	.00	.00
10	.00	.00	.12	1.7	.25	64	.29	.68	.44	.00	.00	.00
11	.00	.00	.29	.87	.25	156	.46	.39	164	.00	.00	.00
12	.00	.00	171	.63	.23	15	40	.35	90	.00	.00	.00
13	.00	.00	59	.37	.17	5.7	37	1.9	9.6	.00	.00	.00
14	.00	.00	5.1	.38	.07	3.4	7.3	.36	4.1	.00	.00	.00
15	.00	.00	1.9	.36	.00	2.5	3.9	.30	119	.00	.00	.00
16	.00	.00	.83	.30	.00	1.6	142	.20	92	.00	.00	.00
17	.00	.00	.51	.24	.36	1.1	35	.16	64	.00	.00	.00
18	.00	.00	.95	.22	.43	.93	7.1	.14	38	.00	.00	.00
19	.00	.03	6.5	.17	.31	.80	3.5	130	17	.00	.00	.00
20	.00	.04	3.6	.19	.70	.65	1.6	66	59	.00	.00	.00
21	.00	.04	1.4	.14	.58	.51	1.0	14	246	.00	.00	.00
22	.00	.06	.58	.09	.31	.47	.71	4.2	1260	.00	.00	.00
23	.00	.08	.36	.04	39	.40	.50	1.9	68	.00	.00	.00
24	.00	.08	.23	.01	14	.40	.28	.91	9.2	.00	.00	.00
25	.00	.08	.06	.00	13	.48	.19	.41	4.7	.00	.00	.00
26	.00	.10	.04	.00	71	.37	.36	.17	3.0	.00	.00	.00
27	.00	.12	.04	.89	18	.25	.61	.20	2.3	.00	.00	.00
28	.00	.12	.04	7.0	5.4	.17	.62	23	1.7	.00	.00	.00
29	.00	.12	.03	4.4	2.3	32	.86	8.3	1.2	.00	.00	.00
30	.00	.12	.00	3.5	---	9.7	.32	2.5	1.1	.00	.00	.00
31	.00	---	.00	3.6	---	3.4	---	1.0	---	.00	.00	---
TOTAL	0.00	0.99	253.66	30.31	175.54	1416.14	316.83	417.47	2757.47	12.85	0.00	0.00
MEAN	.000	.033	8.18	.98	6.05	45.7	10.6	13.5	91.9	.41	.000	.000
MAX	.00	.12	171	7.0	71	969	142	130	1260	3.9	.00	.00
MIN	.00	.00	.00	.00	.00	.17	.19	.14	.00	.00	.00	.00
AC-FT	.00	2.0	503	60	348	2810	628	828	5470	25	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2000, BY WATER YEAR (WY)

MEAN	43.7	57.7	106	50.7	71.4	62.2	56.2	70.5	43.3	23.1	3.87	2.76
MAX	179	212	257	144	290	130	171	247	126	119	31.6	11.5
(WY)	1994	1997	1992	1998	1997	1992	1993	1992	1992	1994	1992	1995
MIN	.000	.033	.000	.98	.10	5.41	2.02	.83	.003	.000	.000	.000
(WY)	2000	2000	1996	2000	1996	1996	1992	1998	1998	1993	1993	1993

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1992 - 2000	
ANNUAL TOTAL	5523.16		5381.26			
ANNUAL MEAN	15.1		14.7		49.2	
HIGHEST ANNUAL MEAN					99.8	1992
LOWEST ANNUAL MEAN					2.37	1996
HIGHEST DAILY MEAN	1500	Jan 29	1260	Jun 22	3460	Dec 4 1998
LOWEST DAILY MEAN	.00	Oct 1	.00	Oct 1	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	.00	Oct 1	.00	Oct 1	.00	Oct 1 1991
INSTANTANEOUS PEAK FLOW			1840	Jun 22	6870	Jun 14 1997
INSTANTANEOUS PEAK STAGE			14.29	Jun 22	16.68	Jun 14 1997
ANNUAL RUNOFF (AC-FT)	10960		10670		35660	
10 PERCENT EXCEEDS	12		14		63	
50 PERCENT EXCEEDS	.12		.17		.46	
90 PERCENT EXCEEDS	.00		.00		.00	

07342480 MIDDLE SULPHUR RIVER AT COMMERCE, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1987 to current year.
BIOCHEMICAL DATA: Oct 1987 to current year.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)
FEB											
29...	1145	1.9	199	7.8	16.0	79	7.8	--	2.0	K22	940
MAY											
31...	1520	.98	229	7.8	29.0	45	7.4	96	4.1	1100	1600

DATE	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)
FEB											
29...	75	5	26.2	2.34	8.2	.4	3.9	70	15.3	3.8	.2
MAY											
31...	87	--	30.9	2.35	6.2	.3	6.8	90	16.0	7.3	.2

DATE	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)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)
FEB											
29...	10.2	155	114	52	.230	.023	.253	.069	1.1	1.2	.147
MAY											
31...	8.6	164	139	84	1.08	.198	1.28	.110	1.3	1.4	.188

DATE	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)
FEB											
29...	.113	.346	20	7	<1	4.6	40	<1	<1.0	<1.0	<1
MAY											
31...	.165	.506	15	19	<1	3.8	48	<1	<1.0	<.8	<1

DATE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB											
29...	3	80	<1	10	<.2	<1	3	<2.4	<1	1	<1
MAY											
31...	5	50	<1	10	<.2	1	6	<2.4	<1	7	<1

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07342495 COOPER LAKE NEAR COOPER, TX

LOCATION.--Lat 33°20′00", long 95°37′30", Delta-Hopkins County line, Hydrologic Unit 11140301, in control room near center of dam on South Sulphur River, about 4.0 mi southeast of Cooper, and at river mile 23.2.

DRAINAGE AREA.--479.0 mi^2.

WATER-CONTENT RECORDS

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

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

REMARKS.--The lake is formed by a rolled earthfill dam, 28,070 ft long, including the dike. Closure of dam and deliberate impoundment of water began Sep 28, 1991. The spillway is a 700-foot wide vertical faced uncontrolled ogee weir located near the right abutment of the dam. The service spillway (outlet works) consists of both service and emergency gates and low-flow release facilities. The outlet works structures is 452 feet long, and consists of an approach channel, approach channel U-frame structure, intake structure and service bridge, over 10.5-foot diameter conduits, and a stilling basin and discharge channel. The emergency part of the outlet structure consists of five 40- x 20-foot tainter gates. The dam was built, and is owned by the U.S. Army Corps of Engineers in cooperation with the North Texas Municipal Water District, the Sulphur River Municipal Water District, and the city of Irving. The principal uses of the dam and lake are for flood control, water supply, and recreation. Conservation pool storage is 310,000 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	459.0
Top of flood control pool	446.2
Top of conservation pool	440.0
Invert, lowest gated outlet	398.0

COOPERATION.--Area and capacity tables provided by the U.S. Army Corps of Engineers. Record of contents provided by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 441,900 acre-ft, May 10, 1995, elevation, 445.05 ft; minimum contents after initial filling, 191,100 acre-ft, May 11, 1992, elevation, 432.66 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 349,200 acre-ft, Jun 23, elevation, 441.88 ft; minimum contents, 217,800 acre-ft, Dec 10, 11, elevation, 434.63 ft.

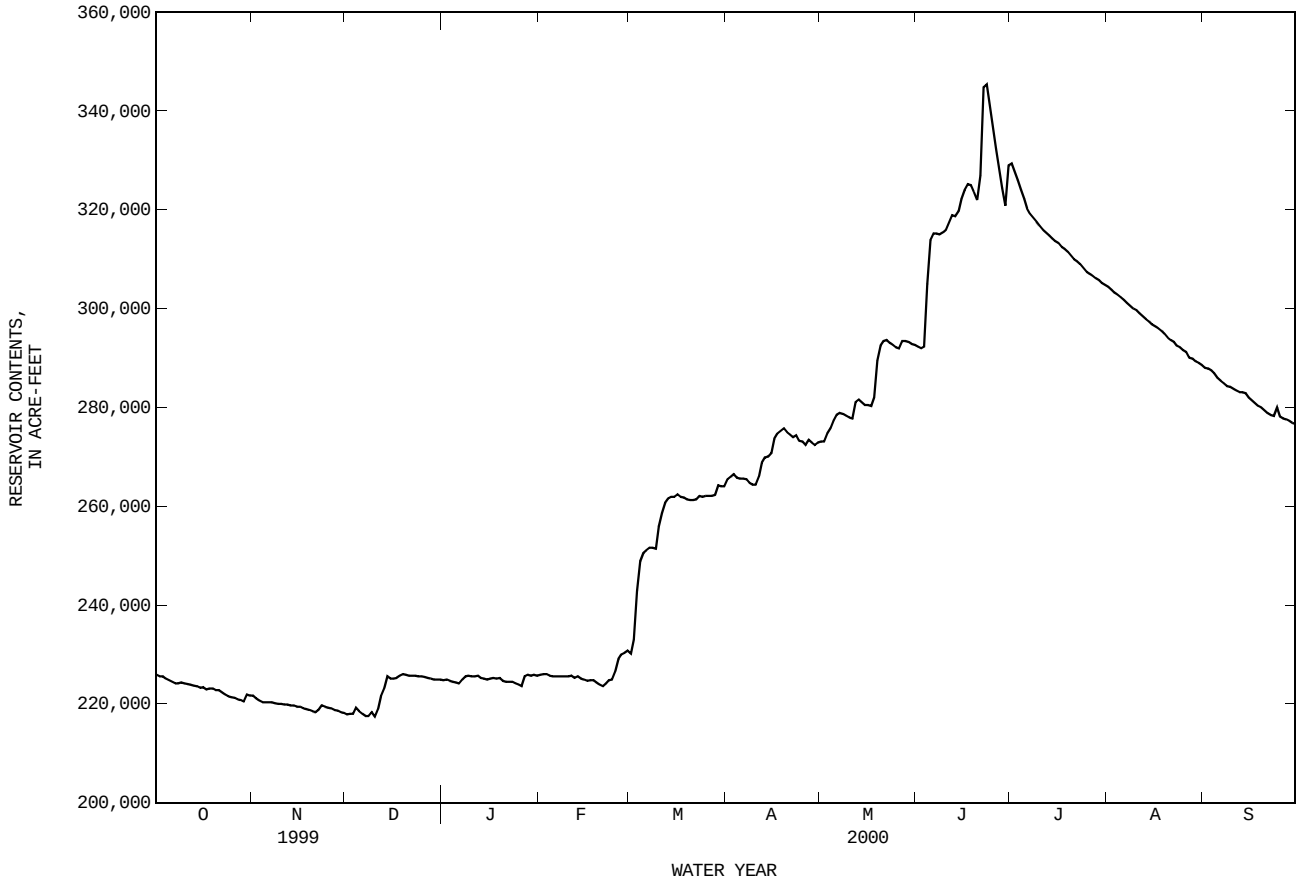
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	225900	221700	217900	224800	225900	230100	265400	273100	292300	329300	304400	288000
2	225600	221100	218000	224900	226000	233000	265900	273100	291900	327700	303800	287800
3	225600	220600	218000	224600	226000	242800	266500	274700	292300	325900	303200	287400
4	225100	220300	219200	224500	225700	248800	265800	275800	304900	324000	302800	286900
5	224800	220300	218500	224300	225600	250500	265600	277400	313800	322200	302300	286000
6	224500	220300	218000	224200	225600	251000	265600	278500	315200	320200	301700	285400
7	224200	220300	217600	224900	225600	251600	265400	278800	315200	319100	301100	284900
8	224200	220100	217600	225600	225600	251600	264700	278700	315000	318300	300600	284300
9	224300	220000	218300	225700	225600	251400	264400	278300	315400	317500	300000	284100
10	224200	220000	217400	225600	225600	255800	264400	277900	315900	316700	299600	283800
11	224000	219800	218900	225600	225700	258600	265900	277700	317300	315900	299000	283400
12	223800	219800	221500	225700	225200	260700	268800	281000	318900	315400	298500	283000
13	223700	219700	223100	225200	225600	261600	269800	281600	318700	314800	297900	283000
14	223500	219700	225600	225100	225100	261900	270000	281000	319600	314200	297300	282800
15	223200	219400	225100	224900	224900	261900	270700	280500	322200	313600	296800	281900
16	223400	219400	225100	225100	224600	262400	273600	280500	324000	313200	296400	281400
17	222900	219100	225200	225200	224800	261900	274700	280300	325100	312400	296000	280800
18	223100	218900	225700	225100	224800	261700	275200	281900	324900	312100	295500	280300
19	223100	218800	226000	225200	224300	261400	275800	289500	323600	311500	294900	279900
20	222800	218500	225900	224600	223800	261200	275000	292500	322000	310700	294100	279400
21	222800	218300	225700	224500	223500	261200	274500	293400	326900	309900	293600	278800
22	222300	218800	225700	224500	224200	261400	274000	293600	344700	309500	293200	278500
23	221800	219700	225700	224500	224800	262100	274300	293000	345300	309000	292500	278300
24	221500	219400	225600	224200	224900	261900	273200	292700	341300	308200	292100	279900
25	221400	219200	225600	223800	226500	262100	273100	292100	336900	307400	291500	278100
26	221200	219100	225400	223500	229000	262100	272300	291900	332300	307000	291200	277700
27	220900	218800	225200	225600	230000	262100	273400	293400	328300	306700	290000	277600
28	220800	218600	225100	225900	230300	262300	272900	293400	324400	306100	289900	277200
29	220500	218300	224900	225700	230800	264200	272300	293200	320800	305700	289300	276800
30	221800	218200	224900	225900	---	264000	272900	292800	328900	305100	288900	276700
31	221700	---	224900	225700	---	264000	---	292700	---	304700	288600	---
MAX	225900	221700	226000	225900	230800	264200	275800	293600	345300	329300	304400	288000
MIN	220500	218200	217400	223500	223500	230100	264400	273100	291900	304700	288600	276700
(+)	434.92	434.66	435.12	435.17	435.46	437.36	437.86	438.99	440.90	439.68	438.76	438.08
(@)	-4500	-3500	+6700	+800	+5100	+33200	+8900	+19800	+36200	-24200	-16100	-11900

CAL YR 1999 MAX 369500 MIN 217400 (@) -91200
WTR YR 2000 MAX 345300 MIN 217400 (@) +50500

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07342495 COOPER LAKE NEAR COOPER, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Sep 1992 to current year.
BIOCHEMICAL DATA: Sep 1992 to current year.
PESTICIDE DATA: Aug 1999 to current year.

REMARKS.--Pesticide samples are composited from discrete samples collected at the surface, middle, and bottom of the reservoir.

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

331938095374701 - Cooper Lk Site AC

DATE	TIME	RESER-VOIR STORAGE (AC-FT) (00054)	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
FEB												
29...	1324	232000	1.00	215	7.8	14.5	.18	9.4	94	K12	K13	86
29...	1328	--	10.0	215	7.8	14.5	--	9.2	92	--	--	--
29...	1332	--	20.0	215	7.8	14.5	--	9.1	91	--	--	--
29...	1336	--	30.0	215	7.8	14.5	--	9.2	92	--	--	--
29...	1341	--	37.0	215	7.8	15.0	--	9.7	98	--	--	84
MAY												
31...	1459	294000	1.00	219	9.0	29.0	.58	10.3	136	73	K5	87
31...	1504	--	10.0	219	8.9	27.5	--	9.9	128	--	--	--
31...	1510	--	20.0	223	7.6	26.0	--	4.6	58	--	--	--
31...	1515	--	30.0	225	7.3	25.5	--	3.2	40	--	--	--
31...	1521	--	40.0	228	7.2	25.0	--	.3	4	--	--	89
AUG												
15...	1007	299000	1.00	221	8.4	29.0	1.28	6.4	84	K2	K2	82
15-15	1007	--	--	--	--	--	--	--	--	--	--	--
15...	1013	--	10.0	221	8.3	29.0	--	6.1	80	--	--	--
15...	1020	--	20.0	221	8.1	28.5	--	5.6	73	--	--	--
15...	1025	--	30.0	222	7.6	28.5	--	2.8	36	--	--	--
15...	1031	--	40.0	239	7.2	27.5	--	.1	1	--	--	86

331938095374701 - Cooper Lk Site AC

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB												
29...	29.0	3.21	10.5	.5	20	3.4	88	14.1	5.3	.2	1.3	121
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	28.6	3.16	10.4	.5	20	3.5	88	13.9	5.1	.2	1.3	120
MAY												
31...	29.6	3.22	10.5	.5	20	3.2	90	13.8	5.7	.2	.2	120
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	30.2	3.26	10.5	.5	20	3.2	90	13.5	5.8	.2	2.2	124
AUG												
15...	28.0	3.06	10.0	.5	20	3.5	87	10.4	5.6	.2	2.1	115
15-15	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	29.2	3.21	10.1	.5	19	3.6	100	7.0	5.6	.2	4.0	128

07342495 COOPER LAKE NEAR COOPER, TX--Continued

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

331938095374701 - Cooper Lk Site AC

DATE	NITROGEN, NITRATE DISSOLVED (MG/L AS N) (00618)	NITROGEN, NITRITE DISSOLVED (MG/L AS N) (00613)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)	NITROGEN, 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)	IRON, DISSOLVED (UG/L AS FE) (01046)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	2,6-DIETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)
FEB												
29...	--	<.010	.131	.163	.40	.57	<.050	<.010	--	<10	5	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	<.010	.134	.160	.44	.60	<.050	.027	.083	<10	6	--
MAY												
31...	--	<.010	<.050	<.020	--	.40	<.050	<.010	--	<10	E1	--
31...	--	<.010	<.050	<.020	--	.41	<.050	<.010	--	<10	E2	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	.067	.017	.084	.153	.45	.60	E.032	.012	.037	<10	16	--
31...	--	<.010	.135	.203	.47	.68	<.050	.015	.046	<10	286	--
AUG												
15...	--	<.010	<.050	<.020	--	.35	<.050	<.010	--	<10	E1	--
15-15	--	--	--	--	--	--	--	--	--	--	--	<.003
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	<.010	<.050	<.020	--	.39	<.050	<.010	--	<10	8	--
15...	--	<.010	<.050	<.020	--	.41	<.050	<.010	--	E10	57	--
15...	--	<.010	<.050	.583	.41	.99	.193	.179	.549	1100	1210	--

331938095374701 - Cooper Lk Site AC

DATE	ACETOCHLOR, WATER FLTRD REC (UG/L) (49260)	ALACHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DISSOLVED (UG/L) (34253)	ATRAZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZINPHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BENFLURALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYLATE, WATER, DISS, REC (UG/L) (04028)	CARBARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBOFURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLORPYRIFOS DISSOLVED (UG/L) (38933)	PERMETHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANAZINE, WATER, DISS, REC (UG/L) (04041)
FEB												
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15-15	<.002	.019	<.002	.949	<.001	<.002	<.002	<.003	<.003	<.004	<.005	<.004
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--

331938095374701 - Cooper Lk Site AC

DATE	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRAZINE, WATER, DISS, REC (UG/L) (04040)	DIAZINON, DISSOLVED (UG/L) (39572)	DIELDRIN DISSOLVED (UG/L) (39381)	DISULFOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHALFLURALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHOPROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DISSOLVED (UG/L) (39341)	LINURON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALATHION, DISSOLVED (UG/L) (39532)
FEB												
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--	--
MAY												
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
15...	--	--	--	--	--	--	--	--	--	--	--	--
15-15	<.002	E.14	<.002	<.001	<.017	E.003	<.004	<.003	<.003	<.004	<.002	<.005
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--	--

331938095374701 - Cooper Lk Site AC

DATE	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
FEB											
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
15...	--	--	--	--	--	--	--	--	--	--	--
15-15	.093	<.004	<.004	<.003	<.006	<.004	<.006	<.004	<.004	<.002	<.018
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--

331938095374701 - Cooper Lk Site AC

DATE	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
FEB											
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
MAY											
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
AUG											
15...	--	--	--	--	--	--	--	--	--	--	--
15-15	<.007	<.004	<.013	<.003	.010	<.010	<.007	<.013	<.002	<.001	<.002
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--

332110095422201 - Cooper Lk Site BC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB												
29...	1436	1.00	214	8.1	16.5	.24	9.7	102	90	60	84	28.7
29...	1441	14.0	213	8.0	16.5	--	9.4	99	--	--	84	28.6
MAY												
31...	1547	1.00	219	8.9	30.5	.55	8.7	118	K2	K1	87	29.4
31...	1552	10.0	220	8.4	29.0	--	6.3	83	--	--	--	--
31...	1559	18.0	218	7.3	28.5	--	3.3	43	--	--	83	28.3
AUG												
15...	1125	1.00	221	8.9	31.0	.67	7.5	102	K1	K1	84	28.5
15...	1130	10.0	220	9.0	30.0	--	7.8	104	--	--	--	--
15...	1134	18.0	227	8.2	30.0	--	4.9	66	--	--	85	28.7

07342495 COOPER LAKE NEAR COOPER, TX--Continued

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

332110095422201 - Cooper Lk Site BC

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB											
29...	3.13	10.9	.5	21	3.4	86	14.5	6.0	.2	1.1	121
29...	3.13	10.8	.5	21	3.3	86	14.5	5.8	.2	1.1	120
MAY											
31...	3.18	10.8	.5	21	3.3	89	13.5	6.0	.2	.4	120
31...	--	--	--	--	--	--	--	--	--	--	--
31...	2.99	10.6	.5	21	3.4	87	13.1	6.0	.2	1.6	119
AUG											
15...	3.12	10.4	.5	20	3.6	92	10.7	5.7	.2	2.3	120
15...	--	--	--	--	--	--	--	--	--	--	--
15...	3.13	10.5	.5	20	3.6	92	10.6	5.7	.3	2.3	120

332110095422201 - Cooper Lk Site BC

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB											
29...	--	<.010	.230	.021	.42	.44	<.050	<.010	--	<10	2
29...	--	<.010	.220	.023	.41	.43	<.050	<.010	--	<10	E1
MAY											
31...	--	<.010	<.050	<.020	--	.43	<.050	<.010	--	<10	<2
31...	--	<.010	<.050	.048	.41	.46	<.050	.022	.067	E10	6
31...	.129	.016	.145	.131	.50	.63	<.050	<.010	--	<10	35
AUG											
15...	--	<.010	<.050	<.020	--	.41	<.050	<.010	--	<10	E1
15...	--	<.010	<.050	<.020	--	.41	<.050	<.010	--	<10	<2
15...	--	<.010	<.050	<.020	--	.40	<.050	<.010	--	<10	4

331818095422501 - Cooper Lk Site CC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
FEB											
29...	1514	1.00	216	7.8	15.5	.18	9.4	96	K11	K1	86
29...	1520	10.0	216	7.8	15.0	--	9.2	93	--	--	--
29...	1525	20.0	216	7.8	15.0	--	9.1	92	--	--	--
29...	1529	27.0	216	7.8	15.0	--	9.0	91	--	--	86
MAY											
31...	1624	1.00	219	8.9	28.0	.70	9.8	127	K1	K1	87
31...	1632	10.0	221	8.2	26.5	--	7.7	97	--	--	--
31...	1640	20.0	226	7.2	25.5	--	1.0	12	--	--	--
31...	1647	30.0	235	7.0	24.5	--	.3	4	--	--	92
AUG											
15...	1213	1.00	220	8.5	30.0	1.01	6.7	90	K1	K1	82
15...	1218	10.0	220	8.0	29.5	--	5.1	68	--	--	--
15...	1223	20.0	220	7.9	29.0	--	4.7	62	--	--	--
15...	1228	30.0	239	7.0	28.0	--	.1	1	--	--	87

331818095422501 - Cooper Lk Site CC

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
FEB											
29...	29.0	3.19	10.6	.5	20	3.4	88	14.4	5.3	.2	1.5
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	29.0	3.21	10.6	.5	20	3.4	88	14.2	5.3	.2	1.4
MAY											
31...	29.6	3.16	10.7	.5	20	3.2	90	13.5	5.9	.2	.5
31...	--	--	--	--	--	--	--	--	--	--	--
31...	--	--	--	--	--	--	--	--	--	--	--
31...	31.2	3.33	10.7	.5	20	3.3	96	12.2	5.9	.2	3.1
AUG											
15...	28.0	3.01	10.0	.5	20	3.7	92	9.8	5.6	.2	3.1
15...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
15...	29.8	3.13	9.8	.5	19	3.8	100	6.0	5.6	.2	5.3

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

331818095422501 - Cooper Lk Site CC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB											
29...	121	<.010	.131	.094	.41	.51	<.050	<.010	--	E10	4
29...	--	--	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--	--	--
29...	121	<.010	.142	.115	.44	.56	<.050	<.010	--	<10	3
MAY											
31...	121	<.010	<.050	<.020	--	.46	<.050	<.010	--	<10	19
31...	--	<.010	<.050	.025	.43	.45	<.050	<.010	--	E10	3
31...	--	<.010	.052	.178	.48	.66	<.050	.015	.046	E10	174
31...	129	<.010	<.050	.419	.46	.88	.102	.093	.285	40	512
AUG											
15...	118	<.010	<.050	<.020	--	.41	<.050	<.010	--	<10	8
15...	--	<.010	<.050	<.020	--	.43	<.050	.013	.040	<10	26
15...	--	<.010	<.050	<.020	--	.36	E.032	.018	.055	30	160
15...	131	<.010	<.050	.496	.41	.91	.443	.416	1.28	1530	682

332019095441901 - Cooper Lk Site DC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAY							
31...	1704	1.00	224	9.3	31.5	13.0	180
31...	1707	8.00	241	7.5	29.0	4.6	61
AUG							
15...	1308	1.00	222	8.7	31.5	8.2	113
15...	1311	9.00	226	7.9	30.5	5.2	70

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

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>331927095480001 - Cooper Lk Site HC

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DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
FEB												
29...	1750	1.00	306	7.9	18.5	--	9.2	101	K60	700	120	5
MAY												
31...	1850	1.00	383	7.5	26.5	.34	4.9	62	1800	3400	150	4

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

!

>331927095480001 - Cooper Lk Site HC

!

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB												
29...	43.3	2.95	16.7	.7	22	3.6	120	24.6	6.9	.3	11.2	184
MAY												
31...	53.6	3.30	19.2	.7	21	4.9	140	23.0	10.7	.3	12.9	224

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

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>331927095480001 - Cooper Lk Site HC

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DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
FEB											
29...	1.16	.051	1.21	.147	1.0	1.1	.066	.051	.156	30	18
MAY											
31...	2.12	.190	2.31	.072	.92	1.0	.137	.106	.325	10	33

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake AC (331938095374701)

Phytoplankton Analyses October 1999 to September 2000

Date	02/29/00
Time	1324
TOTAL CELLS/mL	1,879
NUMBER OF SPECIES	35
DEPTH COLLECTED (ft.)	0.30

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclotella meneghiniana	10
Cyclotella sp. 1	557
Melosira italica	37
Stephanodiscus hantzschii 8-11um	37
Stephanodiscus medius	10
Stephanodiscus minutulus	10
Stephanodiscus niagarae	5
Order Pennales	
Anomoeoneis vitrea	5
Cymbella silesiaca	21
Fragilaria capucina	42
Navicula salinarum	16
Nitzschia acicularis	16
Nitzschia palea	9
Surirella visurgis	5
Synedra ulna	5
CHLOROPHYTA	
Ankistrodesmus convolutus	5
Ankistrodesmus falcatus	16
Chlamydomonas sp.	5
Dictyosphaerium pulchellum	42
Monoraphidium capricornutum	57
Non-motile Chlorococcales-spherical	10
Oocystis parva	37
Pediastrum duplex	94
Scenedesmus bijuga	135
Scenedesmus quadricauda	21
Selenastrum minutum	10
Sphaerocystis schroeteri	53
Tetraedron minimum	5
Tetrastrum glabrum	42
CYANOPHYTA	
Aphanocapsa delicatissima	271
Non-motile blue-greens (>1 um)	10
CRYPTOPHYTA	
Cryptomonas erosa	21
Cryptomonas ovata	5
Rhodomonas minuta v. *nannoplanctica*	47
Misc. microflagellate	208

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake HC (331927095480001)

Phytoplankton Analyses October 1999 to September 2000

Date	02/29/00
Time	1750
TOTAL CELLS/mL	2,038
NUMBER OF SPECIES	40
DEPTH COLLECTED (ft.)	0.50

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclotella sp. 1	91
Stephanodiscus hantzschii 8-11 um	26
Order Pennales	
Cymbella minuta	13
Fragilaria capucina	65
Fragilaria pinnata	13
Gomphonema parvulum	52
Navicula cryptocephala	13
Navicula erifuga	13
Navicula sp.	26
Nitzschia acicularis	52
Nitzschia gracilis	39
Nitzschia palea	52
Nitzschia pumila	13
Nitzschia sp.	13
CHLOROPHYTA	
Ankistrodesmus convolutus	13
Ankistrodesmus falcatus	52
Chlamydomonas globosa	39
Chlamydomonas incerta	13
Chlamydomonas platystigma	26
Chlamydomonas	13
Closterium gracile v. *tenue*	13
Dictyosphaerium pulchellum	78
Golenkinia radiata	13
Monoraphidium capricornutum	13
Non-motile Chlorococcales-spherical	65
Oocystis parva	65
Scenedesmus bijuga	26
Sphaerellopsis sp.	13
Tetrastrum glabrum	313
CYANOPHYTA	
Aphanocapsa delicatissima	130
Non-motile blue-greens (>1 um)	65
CHRYSOPHYTA	
Dinobryon divergens (single)	13
Dinobryon sertularia (single)	13
Erkenia subaequiciliata	26
PYRRHOPHYTA	
Peridinium sp.	13
Peridinium umbonatum	22
CRYPTOPHYTA	
Cryptomonas erosa	130
Cryptomonas ovata	13
Rhodomonas minuta v. *nannoplanctica*	117
Misc. microflagellate	260

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake AC (331938095374701)

Phytoplankton Analyses October 1999 to September 2000

Date	05/31/00
Time	1459
TOTAL CELLS/mL	19,722
NUMBER OF SPECIES	29
DEPTH COLLECTED (ft.)	0.95

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Actinocyclus normanii	104
Stephanodiscus hantzschii 8-11 um	69
Stephanodiscus medius	764
Stephanodiscus minutulus	417
Order Pennales	
Navicula cf. *lacunolaciniata*	35
Nitzschia acicularis	35
Nitzschia palea	35
Synedra tenera	9
CHLOROPHYTA	
Ankistrodesmus falcatus	69
Chlamydomonas globosa	208
Chlamydomonas platystigma	35
Monoraphidium capricornutum	104
Non-motile Chlorococcales-spherical	69
Oocystis parva	486
Pediastrum duplex	417
Pediastrum simplex	105
Pediastrum tetras	278
Scenedesmus quadricauda	278
Schroederia judayi	139
Selenastrum minutum	139
Tetraedron minimum	69
Tetraedron muticum	35
CYANOPHYTA	
Aphanocapsa delicatissima	6,204
Non-motile blue-greens (>1 um)	69
CHRYSOPHYTA	
Erkenia subaequiciliata	174
Mallomonas akrokomos	35
CRYPTOPHYTA	
Cryptomonas erosa	1,111
Rhodomonas minuta v. *nannoplanctica*	5,834
Misc. micros, 1 flagellum	2,396

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake HC (331927095480001)

Phytoplankton Analyses October 1999 to September 2000

Date	05/31/00
Time	1850
TOTAL CELLS/mL	4,331
NUMBER OF SPECIES	20
DEPTH COLLECTED (ft.)	0.55

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclostephanos invisitatus	174
Stephanodiscus minutulus	365
Order Pennales	
Navicula cryptocephala	35
Nitzschia pumila	9
CHLOROPHYTA	
Ankistrodesmus convolutus	17
Ankistrodesmus falcatus	139
Chlamydomonas globosa	87
Chlamydomonas platystigma	35
Dictyosphaerium pulchellum	208
Non-motile Chlorococcales-spherical	17
Scenedesmus bijuga	69
Tetraedron muticum	139
CYANOPHYTA	
Merismopedia tenuissima	278
Oscillatoria limnetica	1,736
Synechococcus sp.	104
PYRRHOPHYTA	
Gymnodinium sp. 2	17
Gymnodinium sp. 3	17
CRYPTOPHYTA	
Cryptomonas erosa	382
Rhodomonas minuta v. *nannoplanctica*	399
Misc. micros, 1 flagellum	104

07342495 COOPER LAKE NEAR COOPER, TX--Continued

Cooper Lake AC (331938095374701)

Phytoplankton Analyses October 1999 to September 2000

Date	08/15/00
Time	1007
TOTAL CELLS/mL	76,501
NUMBER OF SPECIES	49
DEPTH COLLECTED (ft.)	2.10

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Stephanodiscus hantzschii 8-11um	930
Stephanodiscus minutulus	112
Order Pennales	
Nitzschia acicularis	37
Nitzschia palea	298
Nitzschia pumila	74
Synedra tenera	74
CHLOROPHYTA	
Ankistrodesmus falcatus	149
Chlamydomonas incerta	6
Chlamydomonas sp.	37
Chlorogonium sp.	37
Closterium moniliferum	6
Crucigenia crucifera	595
Dictyosphaerium pulchellum	1,382
Euastrum sp.	6
Golenkinia radiata	37
Lagerheimia quadriseta	37
Monoraphidium capricornutum	670
Non-motile Chlorococcales-spherical	112
Oocystis parva	149
Pediastrum simplex	6
Scenedesmus abundans	25
Scenedesmus bijuga	298
Scenedesmus dimorphus	74
Scenedesmus parisiensis	25
Tetraedron minimum	37
Tetraedron muticum	37
Tetrastrum staurogeniaeforme	149
Treubaria setigerum	37
CYANOPHYTA	
Anabaena aphanizomenoides	163
Anabaena flos-aquae	149
Anabaena sp.	149
Anabaenopsis circularis	447
Aphanizomenon gracile	149
Aphanocapsa delicatissima	17,070
Aphanocapsa elachista	2,456
Chroococcus minimus	447
Cylindrospermopsis philippinensis	7,590
Dactylococcopsis irregularis	4,167
Lyngbya contorta	1,116
Lyngbya limnetica	26,043
Merismopedia punctata	100
Merismopedia tenuissima	1,488
Non-motile blue-greens (>1 um)	856
Oscillatoria amphibia	7,255
Oscillatoria limnetica	149
PYRRHOPHYTA	
Gymnodinium sp. 1	6
CRYPTOPHYTA	
Cryptomonas erosa	298
Cryptomonas rostratiformis	37
Misc. microflagellate	930

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°21′23", long 95°35′41", Delta County, Hydrologic Unit 11140301, on levee on left bank 110 ft downstream from bridge on State Highways 19 and 154, 1.0 mi downstream from Big Creek, 1.0 mi upstream from Brushy Creek, 4.5 mi downstream from Doctors Creek, and 5.6 mi southeast of Cooper.

DRAINAGE AREA.--527 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jun 1942 to current year. Monthly discharge only for some periods, published in WSP 1311.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 371.91 ft above sea level. Prior to Feb 15, 1985, at site 360 ft to right and 90 ft upstream at same datum. Prior to Oct 1, 1970, at datum 3.00 ft higher. May 9, 1942 to Nov 8, 1949, nonrecording gage, and Nov 9, 1949 to May 13, 1955, water-stage recorder at site 1,060 ft to right of present gage. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Sep 28, 1991, at least 10% of contributing drainage area has been regulated by Lake Cooper (station 07342495, conservation pool storage 310,000 acre-ft), 13.4 miles upstream from station. No known diversions. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--49 years (water years 1943-91), 416 ft^3/s (10.72 in/yr), 301,400 acre-ft/yr.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1943-1991).--Maximum discharge 47,200 ft^3/s May 13, 1982 (gage height, 27.21 ft, from floodmark in gage well); no flow at times.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	2.1	1.6	4.5	13	7.1	9.9	20	5.2	1600	49	13
2	1.1	2.1	1.6	4.6	9.8	7.9	54	16	4.9	802	49	13
3	1.2	2.2	5.3	4.4	6.6	539	24	14	13	724	30	13
4	1.3	2.2	5.9	4.7	5.4	30	18	136	562	689	24	13
5	1.3	2.2	6.2	5.0	4.9	14	11	200	214	674	47	11
6	1.3	2.2	6.6	4.9	4.7	10	9.9	241	63	672	47	6.9
7	1.3	2.3	6.6	5.0	4.3	9.0	8.3	72	26	471	47	7.0
8	1.4	2.3	6.2	5.6	4.2	8.6	7.4	33	15	217	47	7.1
9	1.4	2.3	6.5	5.3	3.5	8.0	8.4	19	11	218	46	7.2
10	1.4	2.3	6.4	5.9	4.1	109	8.0	12	10	171	46	7.2
11	1.5	2.3	6.9	5.3	4.6	176	10	9.0	19	114	46	6.8
12	1.4	2.4	8.8	5.2	5.4	22	149	23	17	111	45	6.9
13	1.4	2.4	11	4.9	5.3	13	60	416	162	110	45	7.1
14	1.5	2.4	8.6	4.8	5.2	9.6	33	64	425	99	45	7.0
15	1.5	2.5	7.5	4.8	4.3	8.5	22	30	526	58	45	7.0
16	1.5	2.5	6.9	4.4	5.2	7.5	66	17	527	55	46	7.0
17	1.6	2.2	6.7	4.5	5.2	7.5	40	12	757	55	45	7.3
18	1.7	2.5	7.2	4.5	5.3	7.5	22	9.6	793	54	45	7.2
19	1.8	1.8	6.9	4.4	5.3	7.3	16	639	891	54	44	7.1
20	1.7	1.3	6.7	4.7	5.1	7.1	12	329	1050	53	45	7.4
21	1.8	1.5	6.6	4.7	5.0	7.4	10	101	1250	53	45	7.8
22	1.7	2.8	6.6	4.5	5.0	6.9	6.9	41	3190	53	44	7.9
23	1.8	3.1	6.1	4.4	6.3	6.6	6.6	21	1690	53	44	8.0
24	1.9	1.9	6.0	4.4	9.6	6.7	7.9	12	2070	52	44	8.9
25	1.8	1.6	6.1	4.5	9.0	6.4	6.9	8.9	1990	52	43	9.5
26	1.8	1.6	6.1	4.7	73	6.1	5.4	7.5	1950	51	43	9.5
27	1.8	1.6	6.2	5.9	25	5.4	6.0	7.2	1900	51	43	9.5
28	1.9	1.6	6.2	5.4	9.5	4.7	12	16	1630	50	43	9.7
29	1.9	1.6	5.9	5.4	7.8	85	6.9	9.3	1370	50	43	8.9
30	2.0	1.6	4.9	5.5	---	22	6.2	7.0	1470	50	43	9.1
31	2.1	---	4.2	7.7	---	12	---	6.4	---	50	28	---
TOTAL	48.9	63.4	195.0	154.5	261.6	1177.8	663.7	2548.9	24601.1	7566	1346	258.0
MEAN	1.58	2.11	6.29	4.98	9.02	38.0	22.1	82.2	820	244	43.4	8.60
MAX	2.1	3.1	11	7.7	73	539	149	639	3190	1600	49	13
MIN	1.1	1.3	1.6	4.4	3.5	4.7	5.4	6.4	4.9	50	24	6.8
AC-FT	97	126	387	306	519	2340	1320	5060	48800	15010	2670	512
CFSM	.00	.00	.01	.01	.02	.07	.04	.16	1.56	.46	.08	.02
IN.	.00	.00	.01	.01	.02	.08	.05	.18	1.74	.53	.10	.02

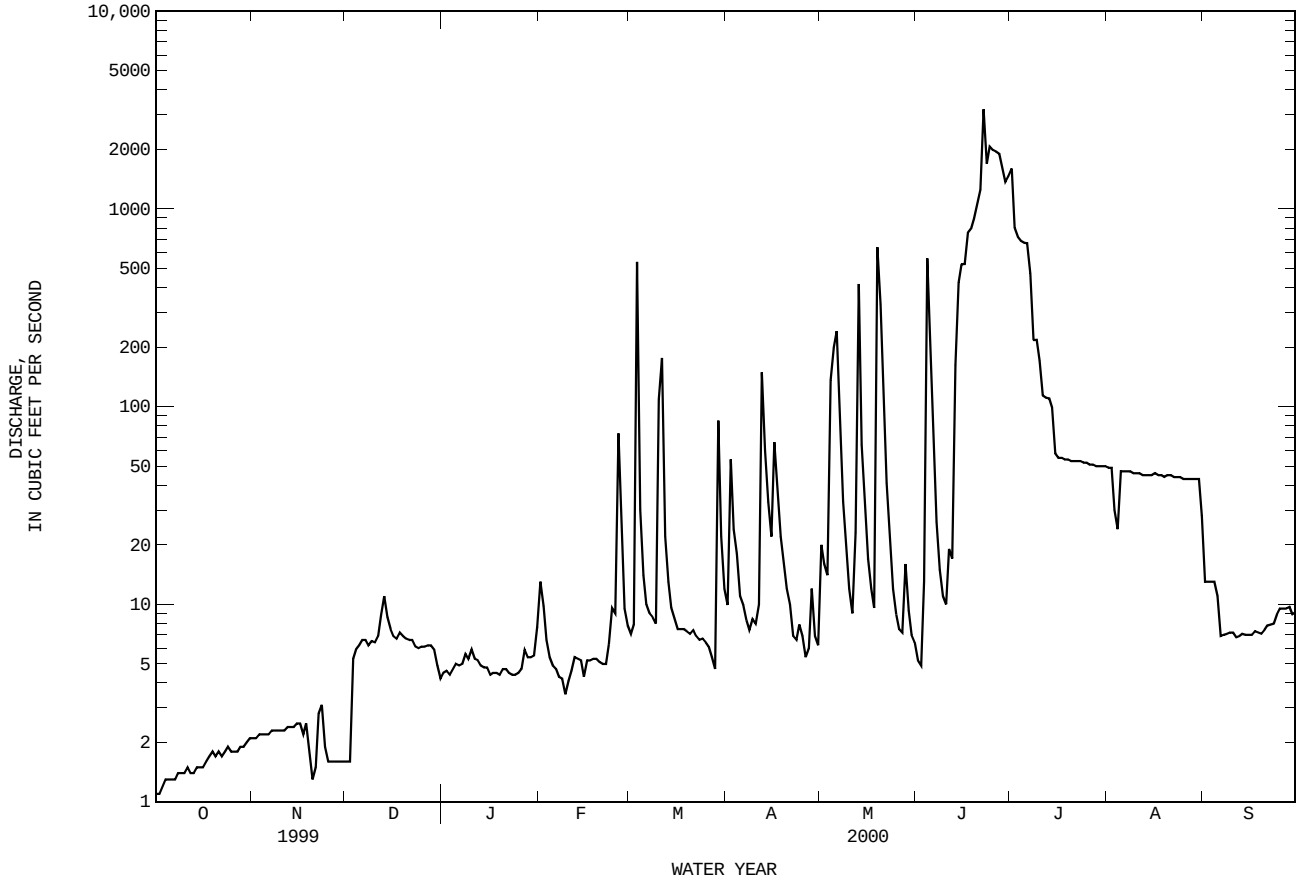
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2000z, BY WATER YEAR (WY)

MEAN	128	491	939	600	646	1052	583	514	363	209	161	17.0
MAX	551	1280	2167	2281	1748	2768	1316	1902	939	839	1205	99.5
(WY)	1994	1995	1999	1998	1999	1992	1997	1995	1995	1992	1992	1994
MIN	1.58	2.11	3.39	3.68	.71	4.17	5.16	15.7	5.95	2.32	.74	.47
(WY)	2000	2000	1996	1996	1996	1996	1996	1996	1993	1996	1999	1999

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1992 - 2000z	
ANNUAL TOTAL	88276.91		38884.9			
ANNUAL MEAN	242		106		475	
HIGHEST ANNUAL MEAN					759	1997
LOWEST ANNUAL MEAN					5.52	1996
HIGHEST DAILY MEAN	2470	Feb 2	3190	Jun 22	4850	Feb 21 1997
LOWEST DAILY MEAN	.16	Aug 24	1.1	Oct 1	.00	Oct 1 1991
ANNUAL SEVEN-DAY MINIMUM	.18	Aug 23	1.2	Oct 1	.00	Oct 1 1991
INSTANTANEOUS PEAK FLOW			3960	Jun 22	6160	Feb 21 1997
INSTANTANEOUS PEAK STAGE			18.51	Jun 22	19.90	May 14 1995
ANNUAL RUNOFF (AC-FT)	175100		77130		344400	
ANNUAL RUNOFF (CFSM)	.46		.20		.90	
ANNUAL RUNOFF (INCHES)	6.23		2.74		12.26	
10 PERCENT EXCEEDS	955		165		1650	
50 PERCENT EXCEEDS	7.1		7.6		17	
90 PERCENT EXCEEDS	.56		1.8		1.4	

z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1958 to Sep 1966, Oct 1967 to current year.
BIOCHEMICAL DATA: Dec 1979 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1958 to Sep 1966, Oct 1967 to Sep 1989.
WATER TEMPERATURE: Oct 1958 to Sep 1966, Oct 1967 to Sep 1989.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,710 microsiemens, Aug 14, 1973; minimum daily, 82 microsiemens, Jul 2, 1976, Jul 12, 1988.
WATER TEMPERATURE: Maximum daily, 36.0°C, Aug 6, 1960, Aug 10, 1962; minimum daily, 0.0°C, on many days during winter months.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
FEB											
29...	1430	7.7	301	7.6	17.0	50	8.4	--	1.5	94	32
MAY											
31...	0845	6.7	333	7.8	27.0	45	6.8	85	1.8	100	35
AUG											
15...	1520	21	233	8.0	31.0	--	7.3	99	.7	85	29

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
FEB											
29...	3.6	20	.9	3.4	97	19	16	.31	3.5	182	157
MAY											
31...	3.4	27	1	3.5	100	17	29	.25	4.0	200	183
AUG											
15...	3.1	11	.5	3.8	90	13	7.6	.25	2.4	--	124

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
FEB											
29...	62	.331	.017	.348	.092	.46	.55	E.036	.029	.09	11
MAY											
31...	98	.123	.010	.133	.063	.60	.66	.059	.037	.11	11
AUG											
15...	--	--	<.010	.058	.025	.47	.50	E.045	.031	.10	--

DATE	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)
FEB											
29...	2.5	<1.0	E2	62	<1.0	<1.0	<1.0	<1.0	1.2	E10	<1.0
MAY											
31...	2.7	<1.0	3	65	<1.0	<1.0	<.80	<1.0	1.9	E7.3	<1.0
AUG											
15...	--	--	3	48	<1.6	<8.0	<14	<13	<10	E9.6	<100

07342500 SOUTH SULPHUR RIVER NEAR COOPER, TX--Continued

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

DATE	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
FEB											
29...	--	33	<.2	1.2	1.3	<2	<1.0	--	--	2.4	1.3
MAY											
31...	--	14	<.2	1.4	3.5	<2	<1.0	--	--	2.9	1.3
AUG											
15...	E3	10	<.2	<34	<40	<2	<7.0	234	<10	<20	--

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX

LOCATION.--Lat 33°28′29", long 95°35′15", Lamar County, Hydrologic Unit 11140301, on right bank at upstream side of highway embankment near right end of upstream bridge on State Highways 19 and 24, 2.3 mi upstream from Auds Creek, 5.5 mi upstream from Hickory Creek, 8.7 mi northeast of Cooper, and 15.6 mi upstream from mouth.

DRAINAGE AREA.--276 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 372.42 ft above sea level. Prior to Nov 8, 1949, nonrecording gage, Nov 8, 1949, to May 21, 1960, water-stage recorder at site 50 ft upstream at datum 9.00 ft higher, and from May 22, 1960, to Sep 30, 1970, at datum 5.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good except those less than 1 ft^3/s, which are fair. No known regulation or diversions. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 2, 1944, reached a stage of 35.6 ft, present datum, and flood in 1932 reached about same stage, from information by U.S. Army Corps of Engineers and local residents. In 1928-29, the channel was rectified for a distance of 28 mi upstream and 18 mi downstream from this station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 20,000 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 19	0315	32,500	24.31	No other peak greater than base discharge.			

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

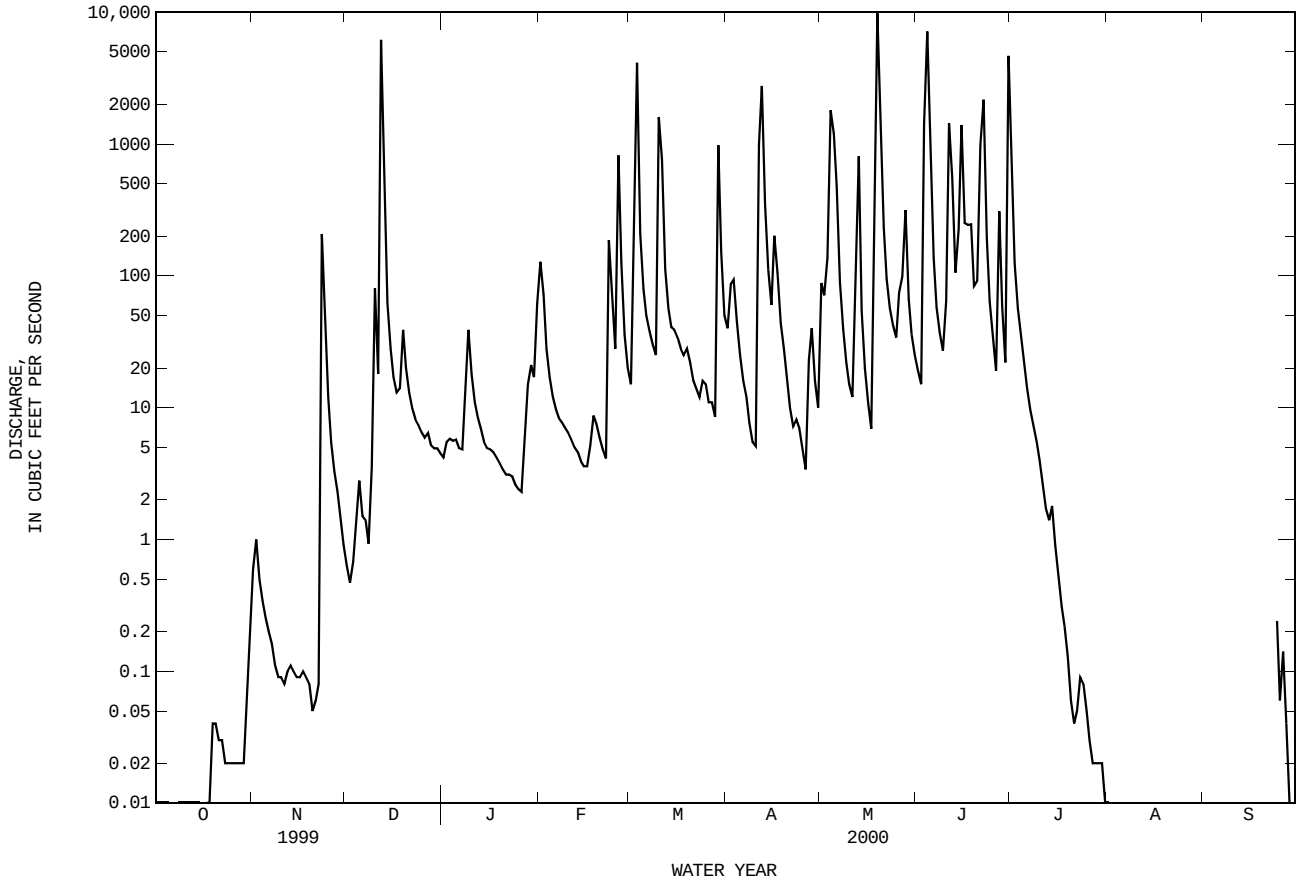
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.59	.63	4.2	128	15	40	88	19	644	.01	.00
2	.01	1.0	.47	5.5	72	665	86	71	15	125	.00	.00
3	.01	.50	.68	5.8	28	4120	93	137	1420	57	.00	.00
4	.01	.34	1.4	5.6	17	208	45	1800	7120	34	.00	.00
5	.01	.25	2.8	5.7	12	80	25	1200	718	21	.00	.00
6	.00	.20	1.5	4.9	9.6	50	16	475	137	14	.00	.00
7	.00	.16	1.4	4.8	8.3	38	12	90	58	9.6	.00	.00
8	.01	.11	.93	15	7.7	30	7.7	40	37	7.3	.00	.00
9	.01	.09	3.5	39	7.0	25	5.5	22	27	5.5	.00	.00
10	.01	.09	80	18	6.4	1600	5.1	15	64	4.0	.00	.00
11	.01	.08	18	11	5.7	761	984	12	1440	2.6	.00	.00
12	.01	.10	6170	8.3	5.0	113	2760	178	555	1.7	.00	.00
13	.01	.11	320	6.9	4.6	57	353	804	106	1.4	.00	.00
14	.01	.10	62	5.5	3.9	41	112	54	225	1.8	.00	.00
15	.01	.09	28	4.9	3.6	39	60	20	1390	.90	.00	.00
16	.00	.09	17	4.8	3.6	34	201	11	252	.52	.00	.00
17	.01	.10	13	4.6	5.2	28	105	6.9	243	.31	.00	.00
18	.01	.09	14	4.2	8.7	25	44	94	246	.22	.00	.00
19	.04	.08	39	3.8	7.5	28	28	9780	83	.13	.00	.00
20	.04	.05	20	3.4	5.9	22	17	1460	91	.06	.00	.00
21	.03	.06	13	3.1	4.8	16	10	234	991	.04	.00	.00
22	.03	.08	9.8	3.1	4.1	14	7.2	95	2170	.05	.00	.00
23	.02	207	8.1	3.0	186	12	8.1	57	195	.09	.00	.00
24	.02	51	7.4	2.6	66	16	7.0	42	64	.08	.00	.24
25	.02	12	6.5	2.4	28	15	4.8	34	34	.05	.00	.06
26	.02	5.5	5.9	2.3	818	11	3.4	75	19	.03	.00	.14
27	.02	3.3	6.4	6.1	125	11	23	99	307	.02	.00	.04
28	.02	2.3	5.2	15	36	8.5	40	315	59	.02	.00	.01
29	.02	1.4	4.9	21	20	979	16	67	22	.02	.00	.00
30	.06	.91	4.9	17	---	152	10	36	4650	.02	.00	.00
31	.19	---	4.5	62	---	50	---	25	---	.01	.00	---
TOTAL	0.68	287.77	6870.91	303.5	1637.6	9263.5	5128.8	17436.9	22757	931.47	0.01	0.49
MEAN	.022	9.59	222	9.79	56.5	299	171	562	759	30.0	.000	.016
MAX	.19	207	6170	62	818	4120	2760	9780	7120	644	.01	.24
MIN	.00	.05	.47	2.3	3.6	8.5	3.4	6.9	15	.01	.00	.00
AC-FT	1.3	571	13630	602	3250	18370	10170	34590	45140	1850	.02	1.0

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1950 - 2000, BY WATER YEAR (WY)

MEAN	220	252	297	217	355	339	388	468	310	96.8	20.2	109
MAX	1784	1406	1527	1172	1483	1223	3017	2461	1792	872	160	584
(WY)	1972	1958	1992	1950	1950	1968	1966	1982	1989	1976	1971	1973
MIN	.000	.000	.000	.16	.81	4.43	2.97	2.43	.28	.000	.000	.000
(WY)	1953	1956	1956	1964	1976	1954	1972	1972	1988	1954	1952	1952

07343000 NORTH SULPHUR RIVER NEAR COOPER, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1950 - 2000	
ANNUAL TOTAL	47845.22		64618.63			
ANNUAL MEAN	131		177		255	
HIGHEST ANNUAL MEAN					541	1957
LOWEST ANNUAL MEAN					34.7	1996
HIGHEST DAILY MEAN	9320	Jan 29	9780	May 19	40900	Oct 19 1971
LOWEST DAILY MEAN	.00	Aug 15	.00	Oct 6	.00	Oct 1 1949
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 15	.00	Aug 2	.00	Aug 2 1951
INSTANTANEOUS PEAK FLOW			32500	May 19	90600	Oct 19 1971
INSTANTANEOUS PEAK STAGE			24.31	May 19	36.16	Oct 19 1971
ANNUAL RUNOFF (AC-FT)	94900		128200		184800	
10 PERCENT EXCEEDS	134		203		295	
50 PERCENT EXCEEDS	9.8		5.5		11	
90 PERCENT EXCEEDS	.01		.00		.00	



07343210 SULPHUR RIVER NEAR TALCO, TX

LOCATION.--Lat 33°23'26", long 95°03'44", Red River County, Hydrologic Unit 11140302, downstream side at left end of bridge on County Road 2152, 1.0 mi downstream from Little Mustang Creek, 2.3 mi downstream from U.S Highway 271, 2.8 mi northeast of Talco.

DRAINAGE AREA.--1,405 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Dec 1956 to current year. Prior to Oct 1997, published as "near Talco" (station 07343200).

REVISED RECORDS.--WDR TX-76-1: (P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 275.48 ft above sea level. Prior to May 21, 1997, at site 2.3 mi upstream at datum 15.34 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. The River Crest Steam Electric Generating Plant diverts an unknown amount of water upstream from station. Since Sep 1991, at least 10% of contributing drainage area has been regulated by Cooper Lake (station 07342495, conservation pool storage 310,000 acre-ft), 44 mi upstream. Flow may be slightly affected at times by discharge from the flood-detention pools of 14 floodwater-retarding structures with a combined detention capacity of 8,210 acre-ft. These structures control runoff from 23.4 mi^2 in the Auds and Depot Creek drainage basin. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--35 years (water years 1957-91) prior to regulation by Cooper Lake (station 07342495), 1,408 ft^3/s (1,020,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1957-91).--Maximum discharge 48,000 ft^3/s Dec 11,1971 (gage height, 21.20 ft); no flow at times, at site 2.3 mi upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in 1908 and 1914 each reached a stage of 27.5 ft, and flood in 1945 reached a stage of 26.5 ft, from information by local residents, at site 2.3 mi upstream.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.46	2.5	5.2	13	94	250	635	188	18	3490	18	41
2	.40	2.2	4.6	13	215	164	728	260	8.7	5360	18	37
3	.33	2.1	4.1	12	289	1760	689	376	5.8	4790	18	27
4	.30	2.1	4.1	11	238	4590	566	830	938	2550	18	21
5	.31	2.1	3.9	10	169	3680	357	3320	3770	1210	17	17
6	.41	2.4	3.6	10	112	1360	203	3790	5540	869	12	16
7	.46	2.9	3.4	11	78	618	117	3170	4070	758	15	16
8	.51	3.0	3.6	16	60	304	74	1480	1590	650	27	14
9	.55	3.0	4.8	21	43	147	55	738	653	391	33	13
10	.59	2.9	5.0	51	33	162	38	430	322	290	34	12
11	.53	3.1	9.0	65	27	1370	32	310	245	250	40	11
12	.48	3.3	175	53	23	2220	945	229	842	170	38	11
13	.45	3.4	1810	40	20	892	3260	380	998	133	37	14
14	.48	3.2	1390	30	14	418	1710	1010	442	124	35	16
15	.52	3.2	371	24	8.6	208	749	536	713	125	33	14
16	.56	3.2	169	21	6.1	136	402	235	1790	96	33	13
17	.58	3.1	99	19	5.2	103	430	139	1310	65	34	12
18	.59	3.3	70	17	4.8	102	435	66	1920	46	35	12
19	1.3	3.5	58	15	4.1	100	262	2170	2730	24	34	12
20	1.2	3.5	55	14	3.8	92	194	5500	1560	17	34	11
21	.97	3.5	61	13	3.5	80	145	6780	1410	15	33	11
22	.83	3.7	52	12	3.5	71	88	5380	4170	14	34	10
23	.66	4.6	39	12	4.3	71	91	2990	5890	14	34	10
24	.54	11	31	11	8.3	69	126	1190	6430	16	35	14
25	.51	90	25	9.9	117	65	130	563	5310	19	37	15
26	.61	61	22	9.0	424	63	103	258	4090	18	36	15
27	.95	26	19	12	1410	418	101	118	3270	17	36	23
28	1.4	13	17	15	1060	729	359	211	3040	17	36	21
29	1.9	8.6	15	21	473	737	483	413	3060	17	36	17
30	2.6	6.1	14	37	---	2150	305	199	2220	17	38	15
31	2.8	---	14	60	---	1300	---	52	---	18	39	---
TOTAL	24.78	285.5	4557.3	677.9	4951.2	24429	13812	43311	68355.5	21590	957	491
MEAN	.80	9.52	147	21.9	171	788	460	1397	2279	696	30.9	16.4
MAX	2.8	90	1810	65	1410	4590	3260	6780	6430	5360	40	41
MIN	.30	2.1	3.4	9.0	3.5	63	32	52	5.8	14	12	10
AC-FT	49	566	9040	1340	9820	48450	27400	85910	135600	42820	1900	974
CFSM	.00	.01	.10	.02	.12	.56	.33	.99	1.62	.50	.02	.01
IN.	.00	.01	.12	.02	.13	.65	.37	1.15	1.81	.57	.03	.01

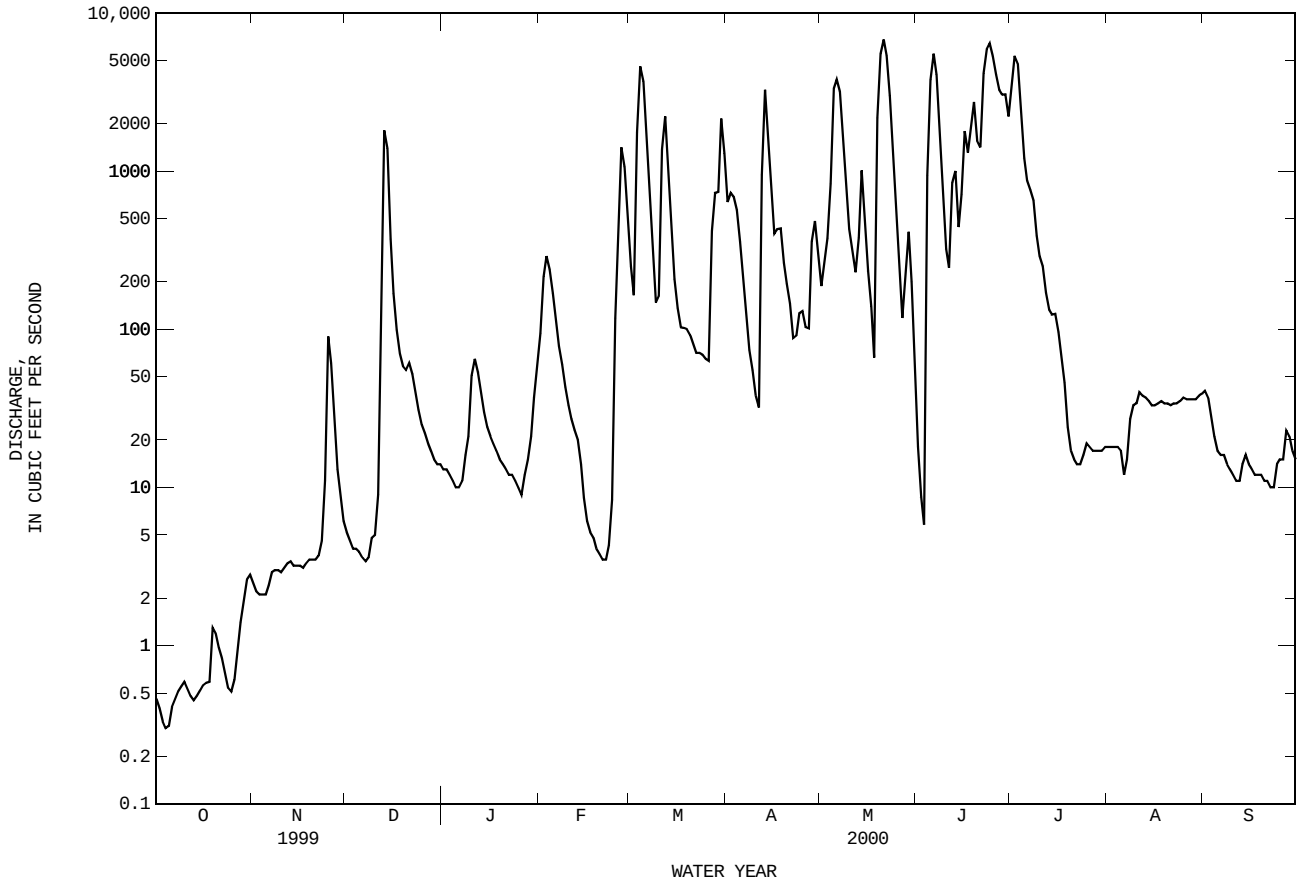
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1992 - 2000, BY WATER YEAR (WY)

MEAN	646	1589	2634	1393	1860	2162	1361	1660	914	625	301	109
MAX	2208	5798	5315	4052	6470	4213	4361	6191	2279	3164	1832	299
(WY)	1994	1997	1992	1998	1997	1992	1997	1995	2000	1992	1992	1996
MIN	.80	9.52	24.0	21.9	12.7	50.3	83.1	88.6	13.3	4.39	.42	.65
(WY)	2000	2000	1996	2000	1996	1996	1996	1998	1998	1993	1999	1999

07343210 SULPHUR RIVER NEAR TALCO, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1992 - 2000	
ANNUAL TOTAL	168056.36		183442.18			
ANNUAL MEAN	460		501		1270	
HIGHEST ANNUAL MEAN					2207	1992
LOWEST ANNUAL MEAN					161	1996
HIGHEST DAILY MEAN	7050	Jan 31	6780	May 21	31200	Oct 30 1991
LOWEST DAILY MEAN	.09	Sep 7	.30	Oct 4	.09	Sep 7 1999
ANNUAL SEVEN-DAY MINIMUM	.11	Sep 1	.38	Oct 1	.11	Sep 1 1999
INSTANTANEOUS PEAK FLOW			7160	May 21	g39500	Feb 22 1997
INSTANTANEOUS PEAK STAGE			25.16	May 21	26.50	Dec 6 1998
ANNUAL RUNOFF (AC-FT)	333300		363900		g920000	
ANNUAL RUNOFF (CFSM)	.33		.36		.90	
ANNUAL RUNOFF (INCHES)	4.45		4.86		12.28	
10 PERCENT EXCEEDS	1420		1570		3330	
50 PERCENT EXCEEDS	56		35		217	
90 PERCENT EXCEEDS	.42		2.7		8.0	

z Period of regulated streamflow.
g See GAGE paragraph.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Jan 1965 to Sep 1995, Jan 1968 to Sep 1995, Oct 1996 to current year.
BIOCHEMICAL DATA: Jan 1968 to Sep 1995, Oct 1996 to current year.
PESTICIDE DATA: Jan 1968 to Sep 1995.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1966 to Sep 1991.
WATER TEMPERATURES: Oct 1966 to Sep 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,800 microsiemens Feb 17, 1976; minimum daily 65 microsiemens Jan 15, 1989.
WATER TEMPERATURE: Maximum daily, 39.0°C, Aug 13, 1987; minimum daily, 0.0°C, on several days during winter months.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	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)
MAR												
15...	1100	230	266	7.7	13.7	98	8.6	95	2.6	100	15	37
MAY												
17...	1130	157	284	7.9	23.5	41	7.2	85	1.2	110	--	38
JUL												
13...	1515	129	309	7.9	33.0	--	5.6	78	2.2	120	1	42
AUG												
16...	1402	33	378	7.9	32.0	--	6.4	87	1.2	130	13	45
29...	1215	36	318	8.1	30.0	--	6.4	85	1.3	110	--	39
SEP												
19...	1130	11	365	8.0	23.0	20	7.2	85	1.6	140	9	50

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
MAR											
15...	2.9	10	.4	3.4	90	26	5.0	.20	8.6	180	152
MAY											
17...	3.0	12	.5	4.9	110	21	7.8	.20	9.3	186	166
JUL											
13...	3.8	16	.6	4.6	120	22	10	.24	3.1	--	173
AUG											
16...	4.1	20	.8	3.8	120	33	13	.30	4.0	--	194
29...	3.8	18	.7	3.8	120	20	8.6	.27	3.6	--	174
SEP											
19...	4.5	19	.7	4.1	130	27	13	.28	4.0	219	202

DATE	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)
MAR											
15...	162	.793	.026	.819	.086	.81	.90	.080	.077	.24	17
MAY											
17...	110	.801	.046	.847	<.020	--	1.0	.184	.126	.39	14
JUL											
13...	--	--	<.010	<.050	<.020	--	.65	E.048	.028	.09	--
AUG											
16...	--	--	<.010	<.050	<.020	--	.49	E.032	.015	.05	--
29...	--	--	<.010	<.050	<.020	--	.51	<.050	<.010	--	--
SEP											
19...	32	--	<.010	<.050	<.020	--	.44	E.033	.017	.05	7.4

07343210 SULPHUR RIVER NEAR TALCO, TX--Continued

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

DATE	ALUMINUM, DISSOLVED (UG/L AS AL) (01106)	ANTIMONY, DISSOLVED (UG/L AS SB) (01095)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, DISSOLVED (UG/L AS PB) (01049)
MAR											
15...	5.2	<1.0	2	44	<1.0	<1.0	<1.0	<1.0	2.1	56	<1.0
MAY											
17...	17	<1.0	3	49	<1.0	<1.0	<.80	<1.0	3.7	28	<1.0
JUL											
13...	--	--	E2	61	<1.6	<8.0	<14	<13	E8.5	<10	<100
AUG											
16...	--	--	E1	69	<1.6	<8.0	<14	<13	10	<10	<100
29...	--	--	E2	63	<1.6	<8.0	<14	<13	E5.8	E6.0	<100
SEP											
19...	1.3	<1.0	E1	71	<1.0	<1.0	E.45	<1.0	3.8	<10	<1.0

DATE	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	NICKEL, DISSOLVED (UG/L AS NI) (01065)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, DISSOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DISSOLVED (UG/L AS U) (22703)
MAR											
15...	--	5.9	<.2	<1.0	2.6	<2	<1.0	--	--	5.9	<1.0
MAY											
17...	--	15	<.2	<1.0	4.7	<2	<1.0	--	--	6.9	<1.0
JUL											
13...	<4	5.9	<.2	<34	<40	<2	<7.0	366	<10	E15	--
AUG											
16...	5	3.6	<.2	<34	<40	<2	<7.0	410	<10	<20	--
29...	E3	4.1	<.2	<34	<40	<2	<7.0	363	E6	<20	--
SEP											
19...	--	3.3	<.2	1.5	2.1	<2	<1.0	--	--	4.0	1.1

07343460 LAKE SULPHUR SPRINGS NEAR SULPHUR SPRINGS, TX

LOCATION.--Lat 33°10′04", long 95°38′30", Hopkins County, Hydrologic Unit 11140303, on White Oak Dam, next to spillway on White Oak Creek, 2.4 mi from Sulphur Springs.

DRAINAGE AREA.--55.0 mi^2.

PERIOD OF RECORD.--Mar 1999 to current year.

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by an earthfill dam 6,232 ft long (including service spillway) with an uncontrolled emergency spillway located at left end of dam. The dam was completed and storage began in Jan 1974. The lake is the property of the Sulphur Springs Water District, and was built to impound water for municipal use. Conservation pool storage is 17,710 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	474.0
Crest of spillway	462.0
Lowest gated outlet (invert)	441.0

COOPERATION.--The capacity table is based on a survey completed in 1982 and was furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 30,660 acre-ft, Jun 4, 2000, elevation, 464.41 ft; minimum contents, 14,010 acre-ft, Dec 8, 9, 2000, elevation, 456.76 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 20,070 acre-ft, May 18, elevation, 460.11 ft; minimum contents, 14,530 acre-ft, Apr 22, elevation, 457.10 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 30,660 acre-ft, Jun 4, elevation, 464.41 ft; minimum contents, 14,010 acre-ft, Dec 8, 9, elevation, 456.76 ft.

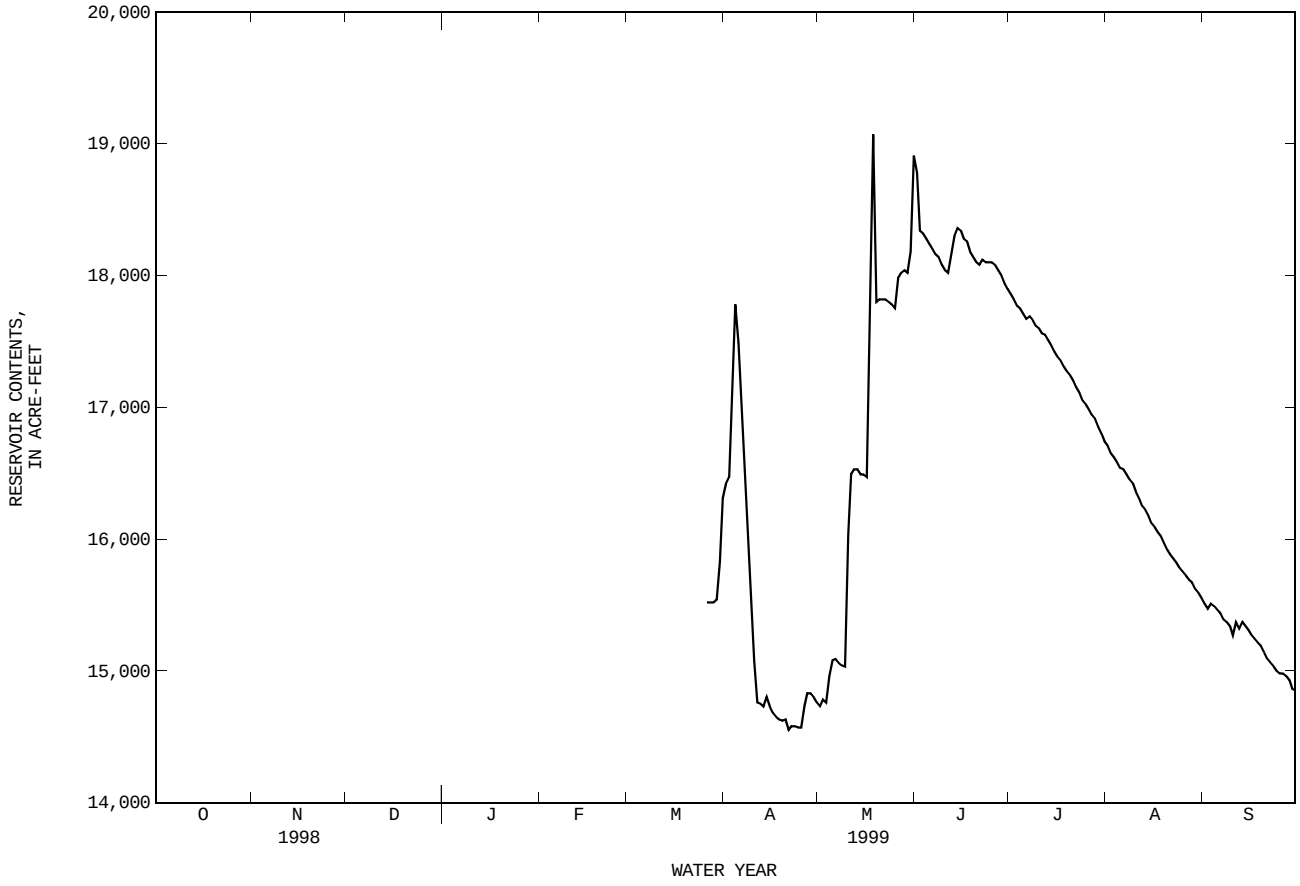
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	16420	14730	18780	17860	16710	15510
2	---	---	---	---	---	---	16470	14780	18340	17820	16650	15470
3	---	---	---	---	---	---	17180	14760	18320	17770	16620	15510
4	---	---	---	---	---	---	17780	14960	18280	17750	16580	15490
5	---	---	---	---	---	---	17490	15080	18240	17710	16540	15460
6	---	---	---	---	---	---	17040	15090	18200	17670	16530	15440
7	---	---	---	---	---	---	16540	15060	18160	17690	16490	15390
8	---	---	---	---	---	---	16070	15040	18140	17660	16450	15370
9	---	---	---	---	---	---	15570	15030	18080	17620	16420	15340
10	---	---	---	---	---	---	15080	16030	18040	17600	16360	15270
11	---	---	---	---	---	---	14760	16490	18020	17560	16310	15370
12	---	---	---	---	---	---	14750	16530	18160	17550	16250	15320
13	---	---	---	---	---	---	14730	16530	18300	17510	16220	15370
14	---	---	---	---	---	---	14800	16490	18360	17470	16180	15340
15	---	---	---	---	---	---	14730	16490	18340	17420	16120	15310
16	---	---	---	---	---	---	14680	16470	18280	17380	16090	15270
17	---	---	---	---	---	---	14650	18120	18260	17350	16050	15240
18	---	---	---	---	---	---	14630	19070	18180	17310	16020	15210
19	---	---	---	---	---	---	14620	17800	18140	17270	15970	15190
20	---	---	---	---	---	---	14630	17820	18100	17240	15920	15140
21	---	---	---	---	---	---	14550	17820	18080	17200	15880	15090
22	---	---	---	---	---	---	14580	17820	18120	17150	15850	15060
23	---	---	---	---	---	---	14580	17800	18100	17110	15820	15030
24	---	---	---	---	---	---	14570	17780	18100	17050	15780	15000
25	---	---	---	---	---	---	14570	17750	18100	17020	15750	14980
26	---	---	---	---	---	15520	14730	17980	18080	16980	15720	14980
27	---	---	---	---	---	15520	14830	18020	18040	16940	15690	14960
28	---	---	---	---	---	15520	14830	18040	18000	16910	15670	14930
29	---	---	---	---	---	15540	14800	18020	17940	16850	15620	14860
30	---	---	---	---	---	15830	14760	18180	17900	16800	15590	14850
31	---	---	---	---	---	16310	---	18910	---	16740	15550	---
MAX	---	---	---	---	---	---	17780	19070	18780	17860	16710	15510
MIN	---	---	---	---	---	---	14550	14730	17900	16740	15550	14850
(+)						458.16	457.24	459.54	459.03	458.40	457.72	457.29
(@)							-1550	+4150	-1010	-1160	-1190	-700

WTR YR 1999 MAX 20070 MIN 14530

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07343460 LAKE SULPHUR SPRINGS NEAR SULPHUR SPRINGS, TX--Continued



07343460 LAKE SULPHUR SPRINGS NEAR SULPHUR SPRINGS, TX--Continued

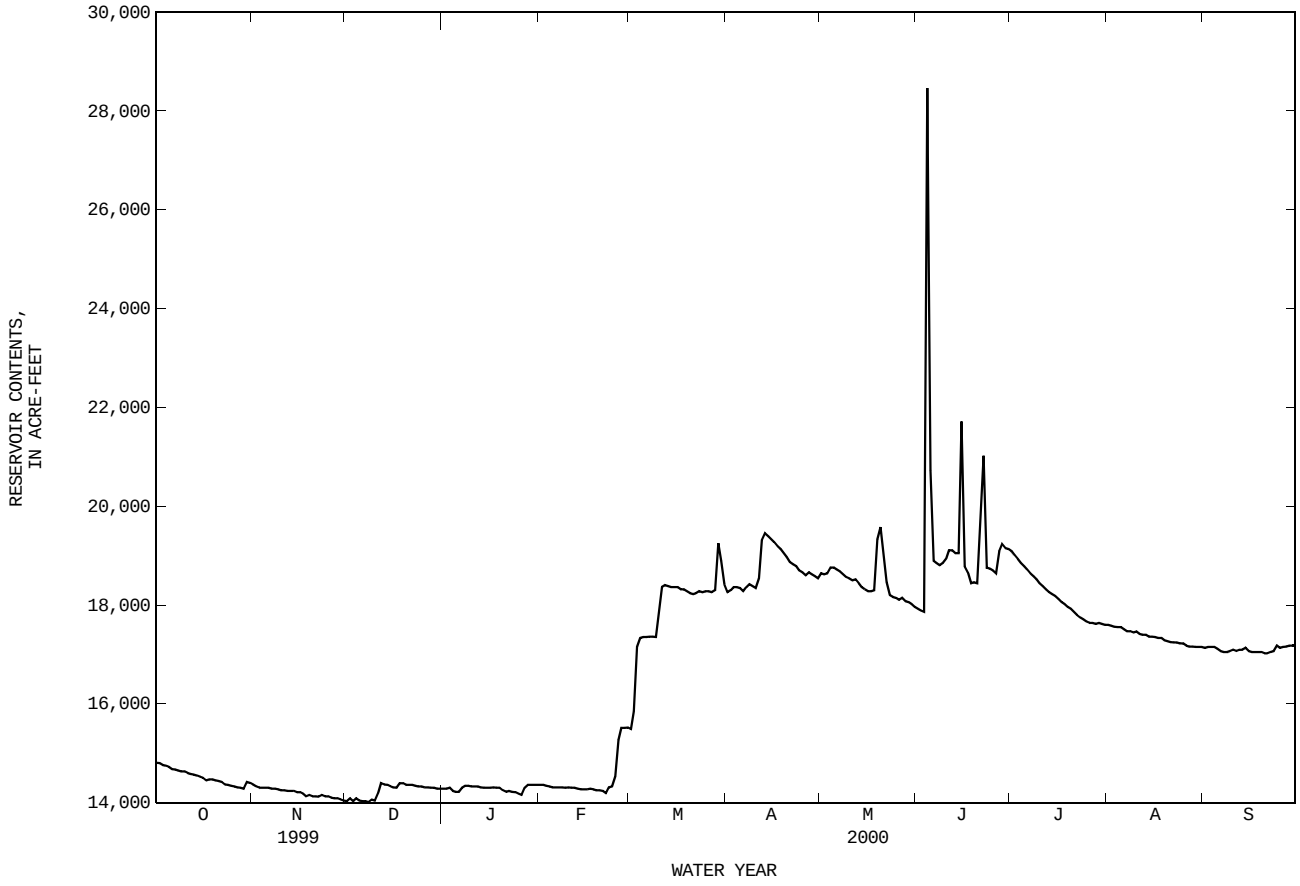
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14810	14370	14030	14280	14360	15490	18260	18640	17920	19090	17600	17130
2	14800	14330	14090	14280	14360	15850	18300	18620	17880	19010	17580	17150
3	14760	14300	14030	14300	14340	17150	18360	18640	17860	18930	17560	17150
4	14750	14300	14090	14240	14330	17330	18360	18760	28460	18850	17550	17150
5	14720	14300	14040	14220	14310	17350	18340	18760	20720	18780	17550	17110
6	14680	14300	14030	14220	14310	17350	18280	18720	18890	18720	17510	17070
7	14670	14280	14030	14300	14310	17360	18360	18680	18850	18640	17470	17050
8	14650	14280	14010	14340	14310	17360	18420	18620	18800	18580	17470	17050
9	14630	14270	14060	14340	14300	17350	18380	18560	18850	18520	17440	17070
10	14630	14250	14040	14330	14310	17840	18340	18540	18930	18440	17460	17090
11	14600	14250	14190	14330	14300	18360	18540	18500	19110	18380	17420	17070
12	14580	14240	14390	14330	14300	18400	19310	18520	19110	18320	17400	17090
13	14570	14240	14370	14310	14280	18380	19450	18440	19050	18260	17400	17090
14	14550	14240	14360	14300	14270	18360	19390	18360	19050	18220	17360	17130
15	14520	14210	14330	14300	14270	18360	19330	18320	21710	18180	17360	17070
16	14500	14210	14310	14300	14270	18360	19270	18280	18780	18120	17350	17050
17	14450	14180	14300	14310	14280	18320	19190	18280	18660	18060	17330	17050
18	14470	14130	14390	14300	14270	18320	19130	18300	18440	18020	17330	17050
19	14470	14150	14390	14300	14250	18280	19050	19330	18460	17960	17290	17050
20	14450	14130	14360	14250	14250	18240	18970	19570	18440	17920	17270	17020
21	14440	14130	14360	14220	14240	18220	18870	19030	19690	17860	17250	17020
22	14420	14120	14360	14240	14190	18240	18820	18460	21020	17800	17240	17050
23	14370	14150	14340	14220	14310	18280	18780	18200	18760	17750	17240	17070
24	14360	14130	14330	14210	14330	18260	18700	18160	18740	17710	17220	17180
25	14340	14130	14330	14180	14530	18280	18660	18140	18700	17660	17220	17130
26	14330	14100	14310	14150	15270	18280	18600	18100	18640	17640	17180	17150
27	14310	14090	14310	14300	15510	18260	18660	18140	19090	17640	17160	17160
28	14300	14090	14300	14360	15510	18300	18620	18080	19230	17620	17160	17180
29	14280	14060	14300	14360	15520	19250	18580	18060	19150	17640	17150	17180
30	14420	14040	14280	14360	---	18890	18540	18020	19130	17620	17150	17180
31	14400	---	14280	14360	---	18420	---	17960	---	17600	17150	---
MAX	14810	14370	14390	14360	15520	19250	19450	19570	28460	19090	17600	17180
MIN	14280	14040	14010	14150	14190	15490	18260	17960	17860	17600	17150	17020
(+)	457.02	456.78	456.94	456.99	457.70	459.29	459.35	459.06	459.65	458.87	458.62	458.64
(@)	-450	-360	+240	+80	+1160	+2900	+120	-580	+1170	-1530	-450	+30

WTR YR 2000 MAX 28460 MIN 14010 (@) +2330

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07343460 LAKE SULPHUR SPRINGS NEAR SULPHUR SPRINGS, TX--Continued



07343500 WHITE OAK CREEK NEAR TALCO, TX

LOCATION.--Lat 33°19′20", long 95°05′33", Titus County, Hydrologic Unit 11140303, near center of main channel at downstream side of bridge on U.S. Highway 271, 0.8 mi downstream from Lewis Creek, 2.4 mi upstream from Ripley Creek, 2.7 mi south of Talco, and 38.4 mi upstream from mouth.

DRAINAGE AREA.--494 mi^2.

PERIOD OF RECORD.--Dec 1949 to current year.
Water-quality records.--Chemical data: Oct 1967 to Sep 1998; Biochemical data: Nov 1982 to Sep 1985, Oct 1991 to Sep 1998; Specific conductance: Oct 1967 to Sep 1989; Water temperature: Oct 1967 to Sep 1989.

REVISED RECORDS.--WSP 1711: Elevation of historical maximum.

GAGE.--Water-stage recorder. Datum of gage is 286.45 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1973, at least 10% of contributing drainage area has been regulated by Lake Sulphur Springs (station 07343460, conservation pool storage 17,710 acre-ft). There are several small diversions upstream from station for municipal supply. The cities of Sulphur Springs and Mount Vernon discharged wastewater effluent into tributaries above this station. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1951-72) prior to regulation by Lake Sulphur Springs 405 ft^3/s (293,400 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1951-72).--Maximum discharge 48,000 ft^3/s Dec 11, 1971 (gage height, 21.20 ft); no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1870, 22.9 ft Mar 31, 1945, from floodmarks and from information by local residents.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	6.1	2.6	3.9	87	937	1270	65	89	1310	1.9	.01
2	2.8	6.1	2.6	3.7	100	598	1120	47	60	2200	1.6	.01
3	2.6	5.9	2.9	3.4	82	511	1160	53	44	2260	1.5	.01
4	2.6	6.2	3.0	3.2	57	877	1170	429	398	1730	1.3	.01
5	2.5	6.2	3.1	2.9	39	1090	855	1360	2130	1240	1.1	.01
6	2.5	6.1	3.0	2.8	28	1040	455	2000	3980	380	.90	.01
7	2.5	6.4	2.7	3.2	19	792	213	2150	4300	139	.81	.01
8	2.7	6.4	2.6	4.8	14	297	117	1630	3650	91	.70	.02
9	2.8	5.9	3.6	5.0	11	92	79	614	3230	71	.58	.02
10	2.7	5.0	5.4	5.4	8.6	92	60	168	2850	61	.48	.02
11	2.7	4.0	6.4	5.9	7.0	423	63	82	2390	54	.53	.02
12	2.6	3.4	7.7	5.9	5.8	686	224	59	1650	47	.44	.01
13	2.7	2.8	9.5	13	4.9	727	424	48	928	39	.28	.01
14	2.9	2.4	62	13	4.3	641	517	39	558	33	.15	.01
15	3.0	2.1	110	9.4	3.9	341	562	59	659	27	.09	.01
16	3.3	1.7	85	7.3	3.8	127	529	132	2440	23	.08	.01
17	3.6	1.6	45	6.3	3.9	71	265	80	4490	20	.07	.01
18	3.7	1.7	27	5.6	4.0	63	139	43	3970	16	.07	.01
19	4.0	1.6	17	4.9	3.8	82	102	951	3540	13	.06	.03
20	4.0	1.5	14	4.2	3.5	83	80	1680	3260	12	.04	.03
21	4.0	1.6	11	3.8	3.2	62	67	1810	2920	10	.03	.02
22	3.8	1.8	9.1	3.6	3.2	47	55	1920	3150	8.1	.02	.01
23	3.6	2.4	8.5	3.4	3.5	44	49	1690	3240	7.0	.02	.01
24	3.7	2.4	11	3.2	3.7	37	49	1490	3740	6.2	.02	.09
25	3.7	2.5	8.9	3.1	4.1	33	40	1300	3310	5.2	.02	.45
26	3.5	2.8	7.0	2.9	117	31	38	624	2910	4.4	.02	.51
27	3.7	2.7	6.0	4.2	609	160	41	168	2530	3.5	.02	.50
28	4.0	2.6	5.4	5.8	931	99	63	97	2010	2.9	.01	.44
29	4.5	2.7	5.0	19	1050	240	78	314	1150	2.3	.01	.70
30	5.1	2.5	4.5	39	---	848	85	252	687	2.1	.01	2.3
31	5.7	---	4.2	62	---	1210	---	135	---	1.9	.01	---
TOTAL	104.5	107.1	495.7	263.8	3215.2	12381	9969	21489	70263	9819.6	12.87	5.31
MEAN	3.37	3.57	16.0	8.51	111	399	332	693	2342	317	.42	.18
MAX	5.7	6.4	110	62	1050	1210	1270	2150	4490	2260	1.9	2.3
MIN	2.5	1.5	2.6	2.8	3.2	31	38	39	44	1.9	.01	.01
AC-FT	207	212	983	523	6380	24560	19770	42620	139400	19480	26	11
CFSM	.01	.01	.03	.02	.22	.81	.67	1.40	4.74	.64	.00	.00
IN.	.01	.01	.04	.02	.24	.93	.75	1.62	5.29	.74	.00	.00

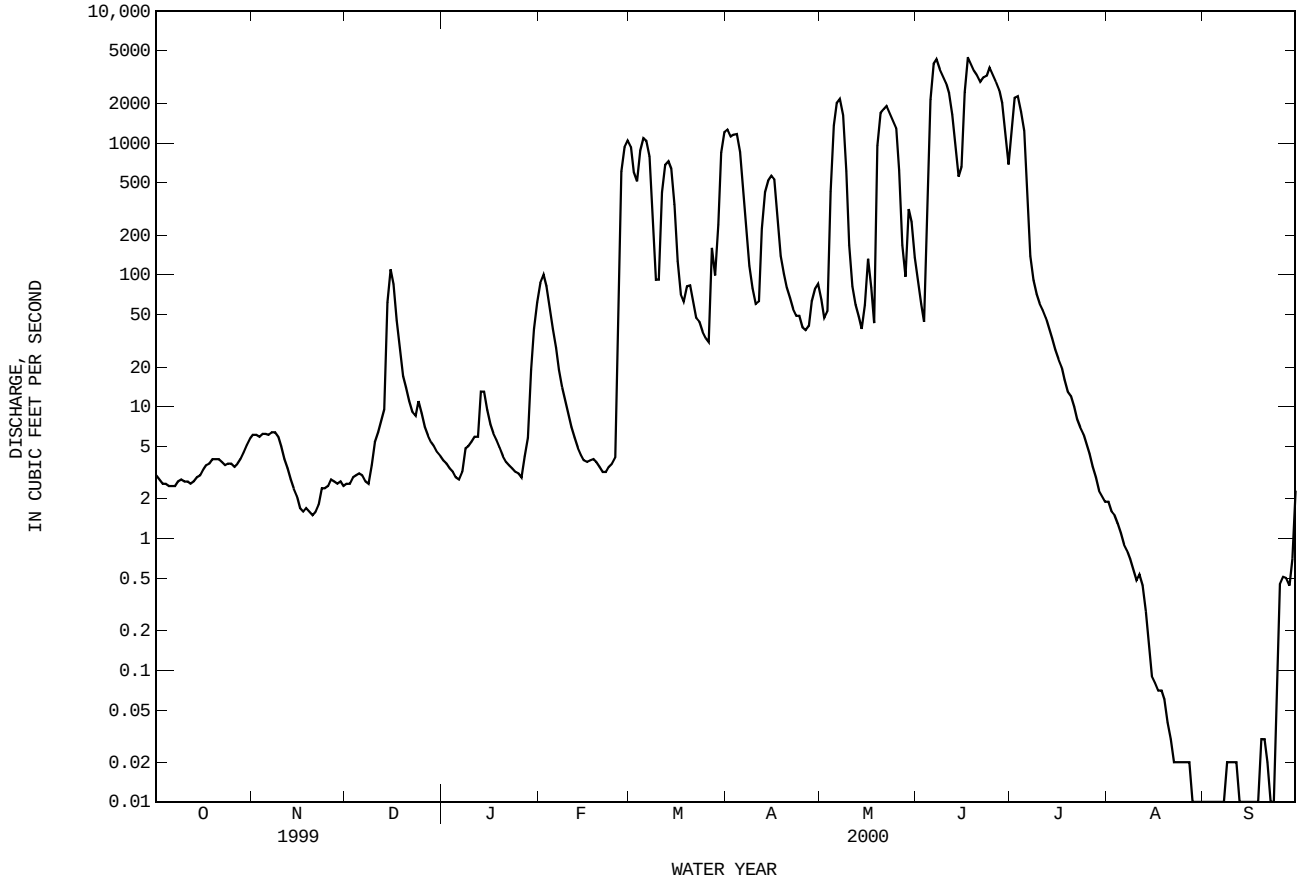
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1973 - 2000z, BY WATER YEAR (WY)

MEAN	251	723	929	620	854	921	704	695	532	316	78.8	66.3
MAX	1744	2984	2889	3222	3381	3491	2329	3166	2620	3743	898	867
(WY)	1982	1975	1983	1980	1997	1990	1973	1990	1981	1992	1992	1974
MIN	.000	.34	3.22	2.27	5.90	12.2	29.0	7.35	.83	.39	.000	.000
(WY)	1979	1976	1990	1976	1996	1996	1981	1988	1988	1978	1978	1978

07343500 WHITE OAK CREEK NEAR TALCO, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1973 - 2000z	
ANNUAL TOTAL	92552.5		128126.08			
ANNUAL MEAN	254		350		556	
HIGHEST ANNUAL MEAN					1160	1992
LOWEST ANNUAL MEAN					55.8	1996
HIGHEST DAILY MEAN	4820	May 21	4490	Jun 17	31700	Jan 24 1980
LOWEST DAILY MEAN	1.5	Nov 20	.01	Aug 28	.00	Aug 30 1973
ANNUAL SEVEN-DAY MINIMUM	1.6	Nov 16	.01	Aug 28	.00	Jul 24 1978
INSTANTANEOUS PEAK FLOW			4990	Jun 17	34600	Jan 24 1980
INSTANTANEOUS PEAK STAGE			19.34	Jun 17	19.86	Jan 24 1980
ANNUAL RUNOFF (AC-FT)	183600		254100		402700	
ANNUAL RUNOFF (CFSM)	.51		.71		1.13	
ANNUAL RUNOFF (INCHES)	6.97		9.65		15.29	
10 PERCENT EXCEEDS	854		1250		1560	
50 PERCENT EXCEEDS	30		6.4		55	
90 PERCENT EXCEEDS	2.8		.07		1.6	

z Period of regulated streamflow.



07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX

LOCATION.--Lat 33°18'16", long 94°09'38", Bowie-Cass County line, Hydrologic Unit 11140302, in intake structure of Wright Patman Dam on the Sulphur River, 0.5 mi upstream from U.S. Highway 59, 10 mi southwest of Texarkana, and 44.5 mi upstream from mouth.

DRAINAGE AREA.--3,443 mi^2.

PERIOD OF RECORD.--Jul 1953 to current year. Published as Texarkana Reservoir prior to Oct 1970 and as Lake Texarkana from Oct 1970 to Sep 1972.
Water-quality Records.--Chemical data: Mar 1967 to Sep 1984, Feb 1992 to Sep 1998.

REVISED RECORDS.--WSP 1561: 1957(M). WSP 1711: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Jul 19 to Dec 31, 1953, nonrecording gage at site about 125 ft upstream at datum 200 ft higher. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 18,500 ft long, including a 200-foot uncontrolled spillway and a 1-mile long dike. Temporary impoundment of water began Jul 2, 1953, and deliberate impoundment began Jun 27, 1956. The dam was completed in Dec 1957. The flood-control outlet works consist of two 20.0-foot-diameter conduits controlled by four 10.0- by 20.0-foot electrically driven broome-type gates. Flow is affected at times by discharge from the flood-detention pools of 25 floodwater-retarding structures with a combined detention capacity of 13,450 acre-ft. These structures control runoff from 40.0 mi^2 in the Sulphur River and Langford Creek drainage basins. Outflow discharging over the spillway passes into an outlet channel and then to the Sulphur River. The lake was built for flood control and for conservation. An unknown amount of water is diverted for industrial and municipal uses. The capacity table initiated Oct 1, 1999 is based on a 1997 TWDB survey. Conservation pool storage is 110,900 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	286.0
Crest of spillway	259.5
Top of conservation pool	218.5
Lowest gated outlet (invert)	200.0

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,912,100 acre-ft, May 9, 1966, elevation, 252.64 ft; minimum since first appreciable storage and after deliberate impoundment began, 137,500 acre-ft, Sep 5, 1958.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 434,500 acre-ft, Jul 3, 4, elevation, 231.12 ft; minimum contents, 166,600 acre-ft, Jan 26, elevation, 222.56 ft.

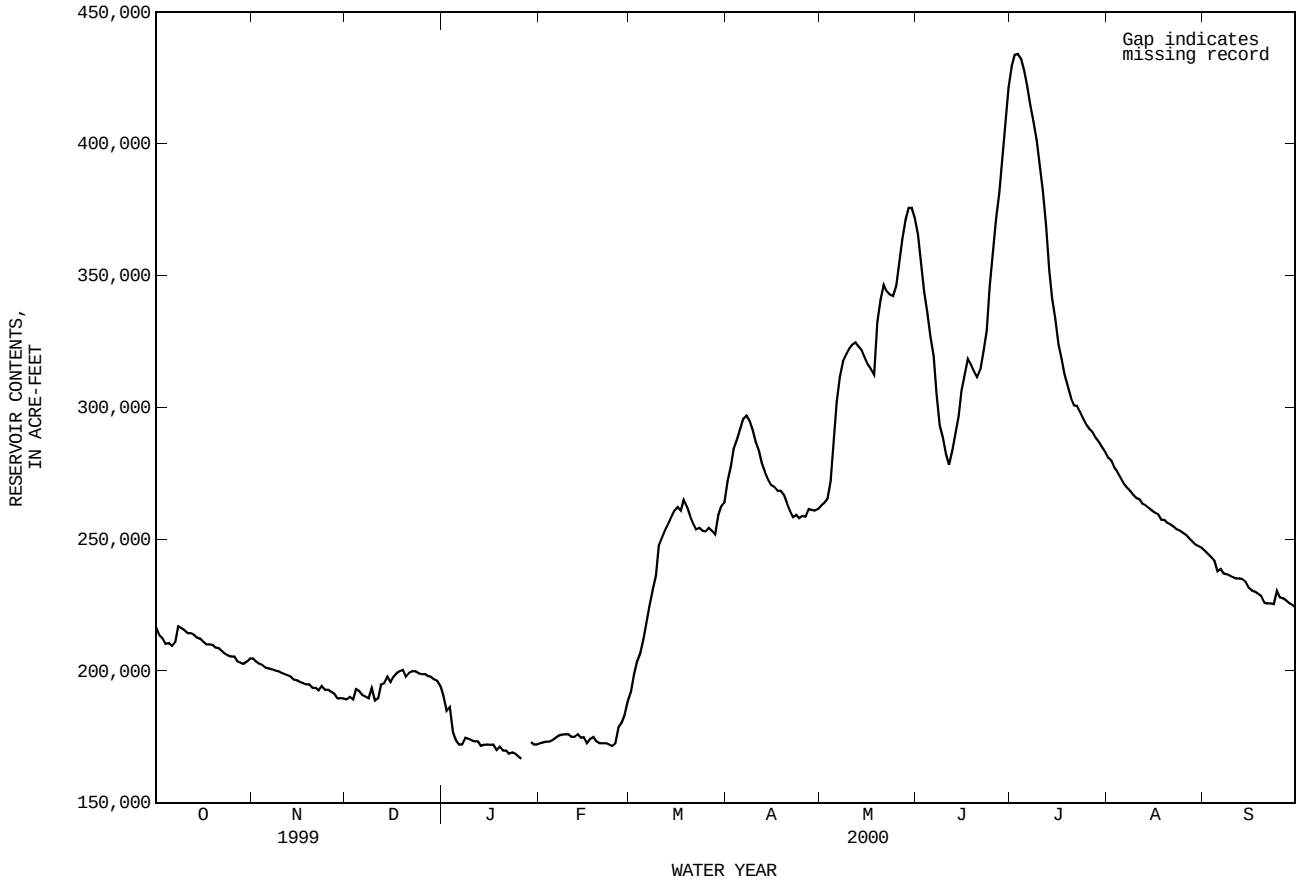
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	216500	204700	189200	190500	172600	192100	272000	262700	365500	429400	280900	245500
2	213400	203500	190200	184800	172900	198300	277500	263600	354500	433700	279700	244300
3	212300	202700	189200	186300	173100	203500	284300	265200	344100	434100	277200	243100
4	210300	202200	193100	176500	173100	206600	287700	272000	336100	432200	275400	241900
5	210600	201200	192300	173600	173800	212000	291800	289300	326700	427600	273200	237800
6	209500	200900	190800	172100	174600	218200	295600	302100	319500	422000	271000	238600
7	210900	200600	190200	172100	175500	224800	296900	311700	305000	414600	269500	236900
8	216800	200100	189500	174600	175800	230700	295000	317500	293000	408300	268300	236600
9	216300	199900	193400	174300	176000	236000	291500	320100	288400	401300	266700	236000
10	215400	199300	188700	173600	176000	247500	286800	322100	281900	391700	265500	235400
11	214300	198800	189500	173300	175000	250500	283400	323700	278200	382300	265200	235100
12	214300	198300	194700	173300	175000	253400	278800	324600	283400	369400	263300	235100
13	213700	197800	195200	171600	176000	255800	275400	323000	290200	352200	262700	234800
14	212600	196700	197800	171900	174600	258200	272600	321700	296600	341400	261800	233900
15	212300	196500	195700	172100	174800	260800	270400	318800	306300	333700	260800	231500
16	211200	195700	197800	171900	172600	262100	269800	316200	312400	324000	260000	230400
17	210000	195200	199100	172100	174100	260800	268300	314300	318500	318200	259400	230100
18	210000	194900	199900	170000	174800	264900	268300	312400	316200	312400	257300	229300
19	209800	194900	200400	171200	173300	262400	266700	332400	313700	307900	257300	228400
20	208900	193600	197800	169700	172600	258800	263900	340800	311400	303700	256100	225900
21	208600	193600	199300	169700	172600	255800	260800	346500	314300	300800	255500	225600
22	207500	192600	199900	168500	172600	253700	258200	344100	321400	300500	254600	225600
23	206400	194100	199900	169000	172100	254300	259100	342800	329300	298200	253700	225300
24	205800	192800	199100	168500	171400	253100	257900	342100	345800	295600	253100	230400
25	205500	192800	198800	167500	172400	252900	258800	346100	359600	293400	252300	227900
26	205500	192100	198800	166600	178500	254300	258500	354800	371500	291800	251400	227600
27	203500	191300	198000	---	180100	253100	261400	363800	381200	290500	250200	226700
28	203000	189500	197800	---	183200	251700	261100	371100	395000	288400	249000	225600
29	202700	189700	196700	172900	188400	259100	260800	375700	408300	286800	247800	225000
30	203500	189500	196200	172100	---	262400	261400	375700	421300	285000	247200	224200
31	204700	---	194100	172100	---	263900	---	371800	---	283100	246600	---
MAX	216800	204700	200400	190500	188400	264900	296900	375700	421300	434100	280900	245500
MIN	202700	189500	188700	166600	171400	192100	257900	262700	278200	283100	246600	224200
(+)	224.05	223.47	223.65	222.79	223.43	226.09	226.01	229.40	230.77	226.71	225.51	224.74
(@)	---	-15200	+4600	-22000	+16300	+75500	-2500	+100400	+49500	-138200	-36500	-22400

WTR YR 2000 MAX 434100 MIN 166600 (@) +7700

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07344200 WRIGHT PATMAN LAKE NEAR TEXARKANA, TX--Continued



07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX

LOCATION.--Lat 33°03'22", long 95°08'22", Franklin County, Hydrologic Unit 11140305, in brick meter house located on upstream side and near center of dam on Big Cypress Creek, 1.5 mi upstream from Andy's Creek, 2.6 mi downstream from Panther Creek, and 10.3 mi southeast of Mount Vernon.

DRAINAGE AREA.--75.0 mi^2.

PERIOD OF RECORD.--Feb 1974 to Sep 1991, Jun 1998 to current year.
Water-quality records.--Chemical data: Oct 1974 to Sep 1984.

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 5,230 ft long. Deliberate impoundment began Jul 7, 1970, and the dam was completed Feb 15, 1971. The spillway is an excavated channel through natural ground 1,000 ft wide located to the left of left end of dam. The service spillway is a rectangular 23x23 ft drop inlet located near the right end of dam. the low-flow outlet works consist of an 18 in diameter concrete pipe that has duplicate valve controls and discharges into the service spillway conduit. Conservation pool storage is 67,690 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	397.0
Crest of spillway	385.0
Top of conservation pool	378.0
Lowest gated outlet (invert)	317.75

COOPERATION.-The capacity table, provided by the Franklin County Water District, was based on data prepared by Wisenbaker, Fix, and Associates, Consulting Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 85,050 acre-ft, Dec 26, 1988, elevation, 381.33 ft; minimum contents, 59,440 acre-ft, Nov 12-14, 1978, elevation, 373.79 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 76,660 acre-ft, Jul 1, elevation, 380.49 ft; minimum contents, 61,060 acre-ft, Nov 21, 22, elevation, 376.04 ft.

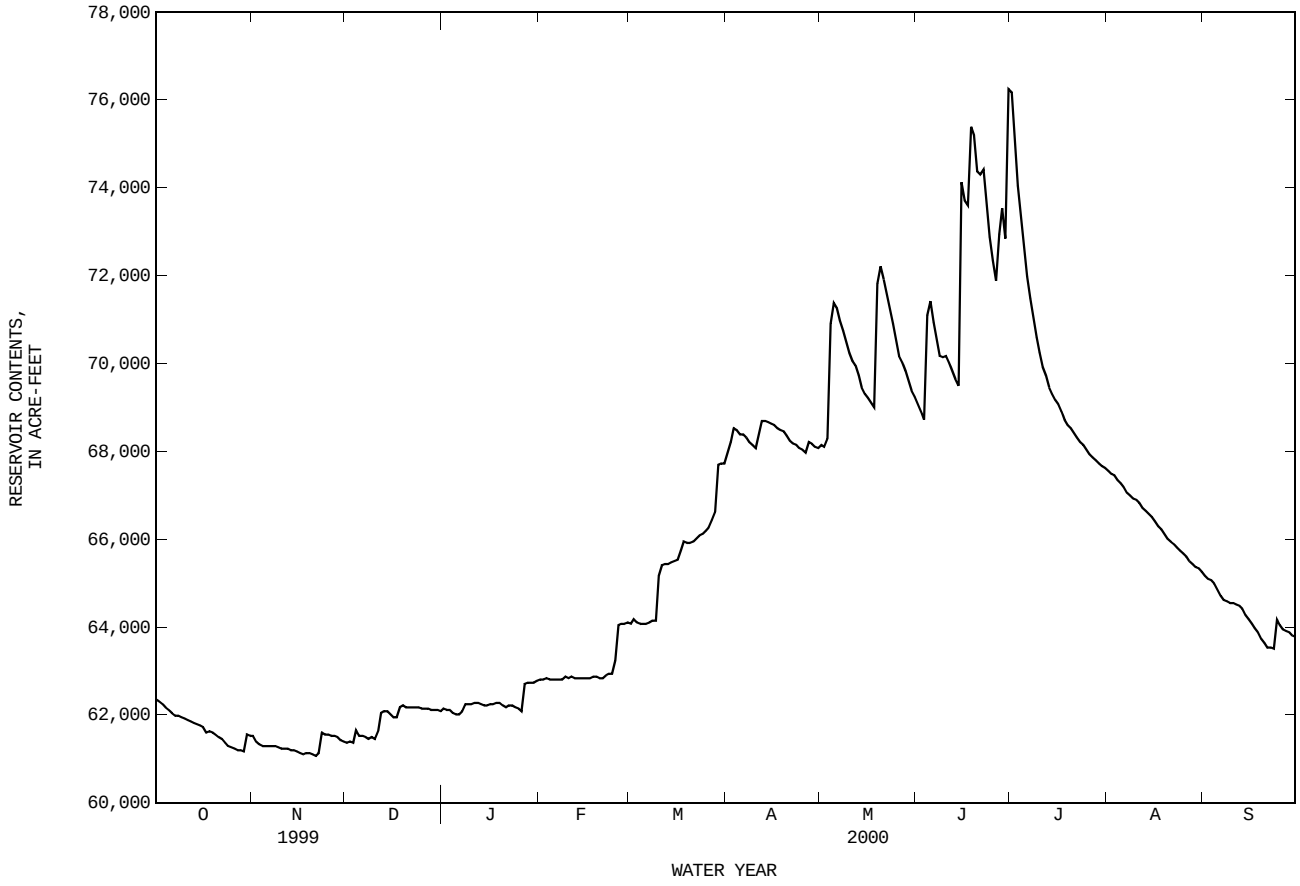
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	62340	61520	61360	62140	62800	64070	67970	68140	69070	76170	67550	65160
2	62300	61390	61390	62110	62800	64170	68210	68100	68900	75040	67480	65090
3	62240	61320	61360	62110	62830	64100	68520	68280	68720	74040	67450	65060
4	62170	61290	61650	62040	62800	64070	68480	70900	71090	73270	67340	64990
5	62110	61290	61520	62010	62800	64070	68380	71380	71410	72540	67270	64850
6	62040	61290	61520	62010	62800	64070	68380	71270	70930	71980	67170	64710
7	61980	61290	61490	62080	62800	64100	68310	70970	70550	71480	67060	64610
8	61980	61290	61450	62240	62800	64140	68210	70740	70170	71050	66990	64580
9	61940	61260	61490	62240	62870	64140	68140	70480	70140	70590	66920	64540
10	61910	61230	61450	62240	62830	65160	68070	70250	70170	70250	66890	64540
11	61880	61230	61620	62270	62870	65400	68380	70060	70020	69910	66820	64510
12	61850	61230	62040	62270	62830	65430	68690	69950	69830	69720	66710	64480
13	61810	61190	62080	62240	62830	65430	68690	69720	69640	69450	66640	64410
14	61780	61190	62080	62210	62830	65470	68660	69450	69490	69310	66570	64270
15	61750	61160	62010	62210	62830	65500	68620	69310	74120	69170	66500	64170
16	61720	61130	61940	62240	62830	65530	68590	69210	73710	69070	66400	64070
17	61590	61100	61940	62240	62830	65740	68520	69100	73600	68900	66290	63970
18	61620	61130	62170	62270	62870	65940	68480	69000	75380	68720	66220	63870
19	61590	61130	62210	62270	62870	65910	68450	71810	75190	68590	66120	63730
20	61550	61100	62170	62210	62830	65910	68350	72210	74370	68520	66010	63630
21	61490	61060	62170	62170	62830	65940	68240	71910	74300	68410	65940	63530
22	61450	61130	62170	62210	62900	66010	68170	71580	74410	68310	65880	63530
23	61360	61590	62170	62210	62930	66080	68140	71240	73640	68210	65810	63500
24	61290	61550	62170	62170	62930	66120	68070	70900	72880	68140	65740	64170
25	61260	61550	62140	62140	63230	66190	68030	70520	72340	68030	65670	64040
26	61230	61520	62140	62080	64040	66260	67970	70170	71880	67930	65600	63940
27	61190	61520	62140	62700	64070	66430	68210	70020	72940	67860	65500	63900
28	61190	61490	62110	62730	64070	66610	68170	69830	73530	67790	65430	63870
29	61160	61420	62110	62730	64100	67690	68100	69600	72840	67720	65360	63800
30	61550	61390	62110	62730	---	67720	68070	69380	76240	67660	65330	63770
31	61520	---	62080	62770	---	67720	---	69240	---	67620	65260	---
MAX	62340	61590	62210	62770	64100	67720	68690	72210	76240	76170	67550	65160
MIN	61160	61060	61360	62010	62800	64070	67970	68100	68720	67620	65260	63500
(+)	376.18	376.14	376.35	376.56	376.96	378.01	378.11	378.45	380.38	377.98	377.30	376.86
(@)	-850	-130	+690	+690	+1330	+3620	+350	+1170	+7000	-8620	-2360	-1490

CAL YR 1999 MAX 72440 MIN 61060 (@) -7450
WTR YR 2000 MAX 76240 MIN 61060 (@) +1400

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07344484 LAKE CYPRESS SPRINGS NEAR MOUNT VERNON, TX--Continued



07344486 BRUSHY CREEK AT SCROGGINS, TX

LOCATION.--Lat 32°58′32", long 95°11′03", Franklin County, Hydrologic Unit 11140305, at downstream side of highway embankment near left end of bridge on Farm Road 115, 0.1 mi north of Scroggins, 0.3 mi downstream from Briary Creek, 2.5 mi upstream from South Brushy Creek, and 9.5 mi upstream from mouth.

DRAINAGE AREA.--23.4 mi^2.

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

REVISED RECORDS.--WDR TX-89-1: 1983-88 (M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 343.90 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 800 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 22	0615	875	12.82	Jun 30	2045	1,790	13.33

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

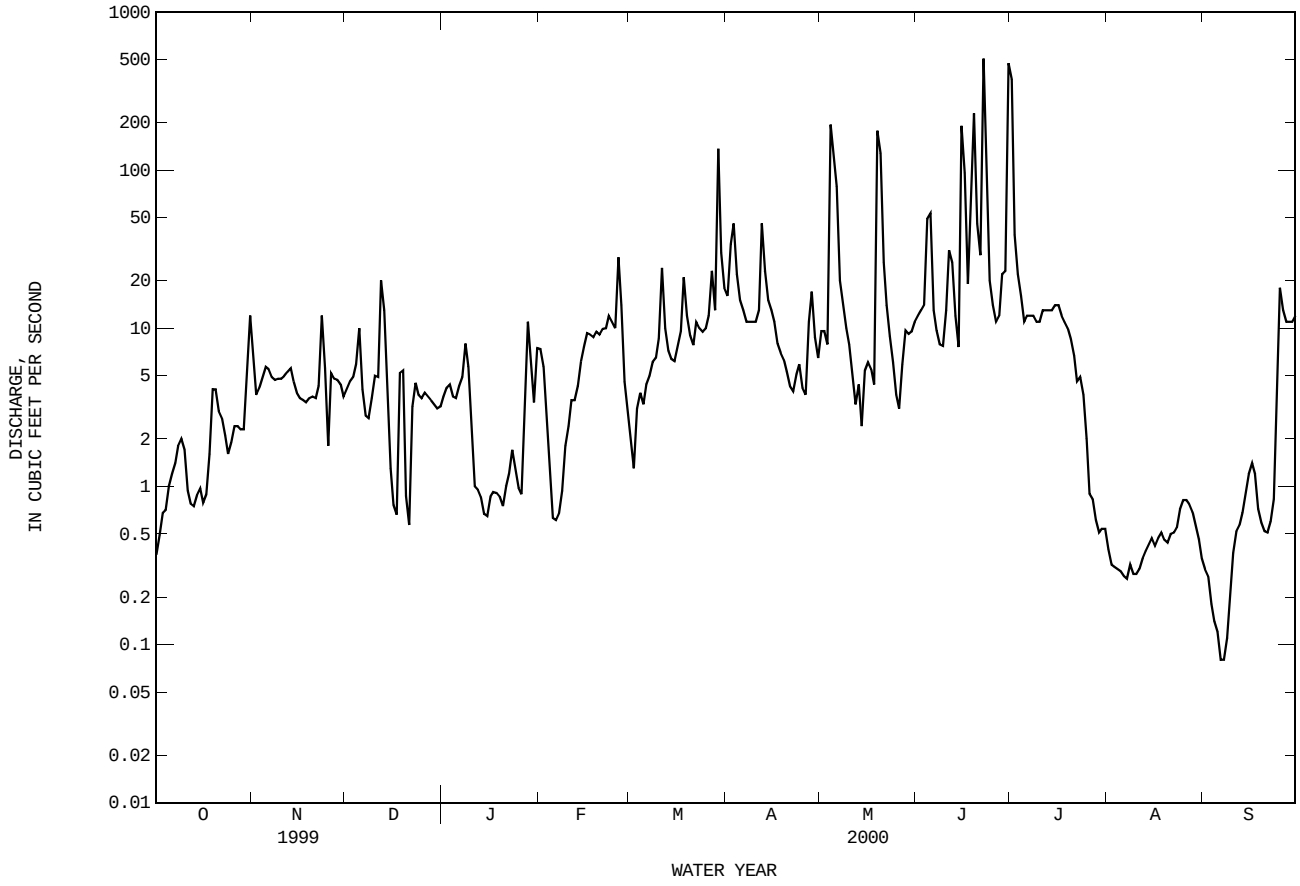
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.37	6.6	4.1	3.7	7.4	1.9	16	9.6	12	376	.40	.30
2	.49	3.8	4.6	4.2	5.7	1.3	34	9.6	13	39	.32	.27
3	.68	4.2	4.9	4.4	2.8	3.1	46	7.9	14	22	.31	.18
4	.71	4.9	5.9	3.7	1.2	3.9	22	194	49	16	.30	.14
5	1.0	5.7	10	3.6	.63	3.3	15	125	53	11	.29	.12
6	1.2	5.5	4.1	4.3	.61	4.4	13	79	13	12	.27	.08
7	1.4	4.9	2.8	4.9	.67	5.0	11	20	9.7	12	.26	.08
8	1.8	4.7	2.7	8.0	.94	6.1	11	14	7.9	12	.32	.11
9	2.0	4.8	3.6	5.7	1.8	6.5	11	10	7.7	11	.28	.21
10	1.7	4.8	5.0	2.2	2.4	8.6	11	7.9	13	11	.28	.38
11	.94	5.0	4.9	1.0	3.5	24	13	5.1	31	13	.30	.52
12	.78	5.3	20	.95	3.5	10	46	3.3	26	13	.35	.57
13	.75	5.6	13	.86	4.3	7.2	23	4.4	12	13	.39	.68
14	.88	4.6	3.5	.67	6.2	6.4	15	2.4	7.6	13	.43	.90
15	.97	3.9	1.3	.65	7.6	6.2	13	5.4	190	14	.47	1.2
16	.79	3.6	.76	.86	9.3	7.7	11	6.1	96	14	.42	1.4
17	.89	3.5	.66	.92	9.1	9.6	8.0	5.5	19	12	.47	1.2
18	1.6	3.4	5.2	.91	8.8	21	7.0	4.4	91	11	.51	.72
19	4.1	3.6	5.4	.86	9.5	12	6.3	177	228	10	.46	.59
20	4.1	3.7	.87	.75	9.1	9.0	5.3	128	46	8.5	.44	.52
21	3.0	3.6	.57	1.0	9.9	7.8	4.3	26	29	6.7	.50	.51
22	2.7	4.3	3.2	1.2	10	11	4.0	14	505	4.6	.51	.60
23	2.1	12	4.5	1.7	12	10	5.1	8.9	67	4.9	.55	.83
24	1.6	5.6	3.8	1.3	11	9.5	5.9	6.1	20	3.8	.72	4.3
25	1.9	1.8	3.6	.98	10	10	4.2	3.8	14	2.0	.82	18
26	2.4	5.2	3.9	.89	28	12	3.8	3.1	11	.90	.82	13
27	2.4	4.8	3.7	3.9	14	23	11	5.9	12	.83	.77	11
28	2.3	4.7	3.5	11	4.6	13	17	9.7	22	.61	.69	11
29	2.3	4.4	3.3	5.9	2.9	136	8.8	9.2	23	.51	.56	11
30	5.4	3.7	3.1	3.4	---	30	6.5	9.5	475	.54	.46	12
31	12	---	3.2	7.5	---	18	---	11	---	.54	.35	---
TOTAL	65.25	142.2	139.66	91.90	197.45	437.5	408.2	925.8	2116.9	669.43	14.02	92.41
MEAN	2.10	4.74	4.51	2.96	6.81	14.1	13.6	29.9	70.6	21.6	.45	3.08
MAX	12	12	20	11	28	136	46	194	505	376	.82	18
MIN	.37	1.8	.57	.65	.61	1.3	3.8	2.4	7.6	.51	.26	.08
AC-FT	129	282	277	182	392	868	810	1840	4200	1330	28	183

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1978 - 2000, BY WATER YEAR (WY)

MEAN	13.9	21.8	30.2	21.7	26.6	26.9	20.7	24.9	17.2	9.39	3.49	4.06
MAX	80.5	143	103	62.7	68.8	66.1	54.9	68.2	70.6	32.2	24.4	41.7
(WY)	1992	1995	1983	1993	1997	1990	1990	1991	2000	1981	1997	1979
MIN	.68	2.51	2.99	2.96	5.31	8.15	3.64	1.64	.26	.007	.003	.14
(WY)	1979	1990	1979	2000	1996	1986	1978	1988	1984	1978	1985	1984

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1978 - 2000	
ANNUAL TOTAL	6051.05		5300.72			
ANNUAL MEAN	16.6		14.5		18.8	
HIGHEST ANNUAL MEAN					35.6	1995
LOWEST ANNUAL MEAN					5.21	1996
HIGHEST DAILY MEAN	555	Jul 11	505	Jun 22	2800	Nov 5 1994
LOWEST DAILY MEAN	.29	Aug 10	.08	Sep 6	.00	Jun 28 1978
ANNUAL SEVEN-DAY MINIMUM	.35	Aug 7	.13	Sep 3	.00	Jun 28 1978
INSTANTANEOUS PEAK FLOW			1790	Jun 30	7520	Dec 2 1982
INSTANTANEOUS PEAK STAGE			13.33	Jun 30	14.39	Dec 2 1982
ANNUAL RUNOFF (AC-FT)	12000		10510		13610	
10 PERCENT EXCEEDS	21		20		29	
50 PERCENT EXCEEDS	4.9		4.6		7.1	
90 PERCENT EXCEEDS	.68		.51		.46	

07344486 BRUSHY CREEK AT SCROGGINS, TX--Continued



07344488 MONTICELLO RESERVOIR NEAR MOUNT PLEASANT, TX

LOCATION.--Lat 33°04'48", long 95°02'36", Titus County, Hydrologic Unit 11140305, on old intake structure 0.25 mi upstream from Monticello Dam on Blundell Creek, approximately 11.0 mi southwest of Mount Pleasant, and approximately 16.0 mi southeast of Mount Vernon.

DRAINAGE AREA.--36 mi^2.

PERIOD OF RECORD.--Jul 1998 to current year.

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 3,200 ft long, including spillways. Construction began in 1971, and deliberate impoundment began in 1973, with lake at normal pool level in 1974. The spillway is an excavated channel cut through natural ground. The spillway is 1,000 ft wide, and located to the left of the left end of the dam. The service spillway is 204.0 ft wide with flow controlled by four 40.0 by 14.0 ft tainter gates. The dam, owned, maintained, and operated by Texas Utilities (TXU), provides cooling water for electrical generation at the Moticello Steam Electric Station. Conservation pool storage is 34,740 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	352.0
Crest of uncontrolled spillway	343.5
Crest of gated spillway	340.0
Lowest gated outlet (invert)	328.0

COOPERATION.--Capacity table No. 1 was furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 37,170 acre-ft, May 4, 2000, elevation, 341.17 ft; minimum contents, 31,910 acre-ft, Jan 5, 2000, elevation, 338.57 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 37,170 acre-ft, May 4, elevation, 341.17 ft; minimum contents, 31,910 acre-ft, Jan 5, elevation, 338.57 ft.

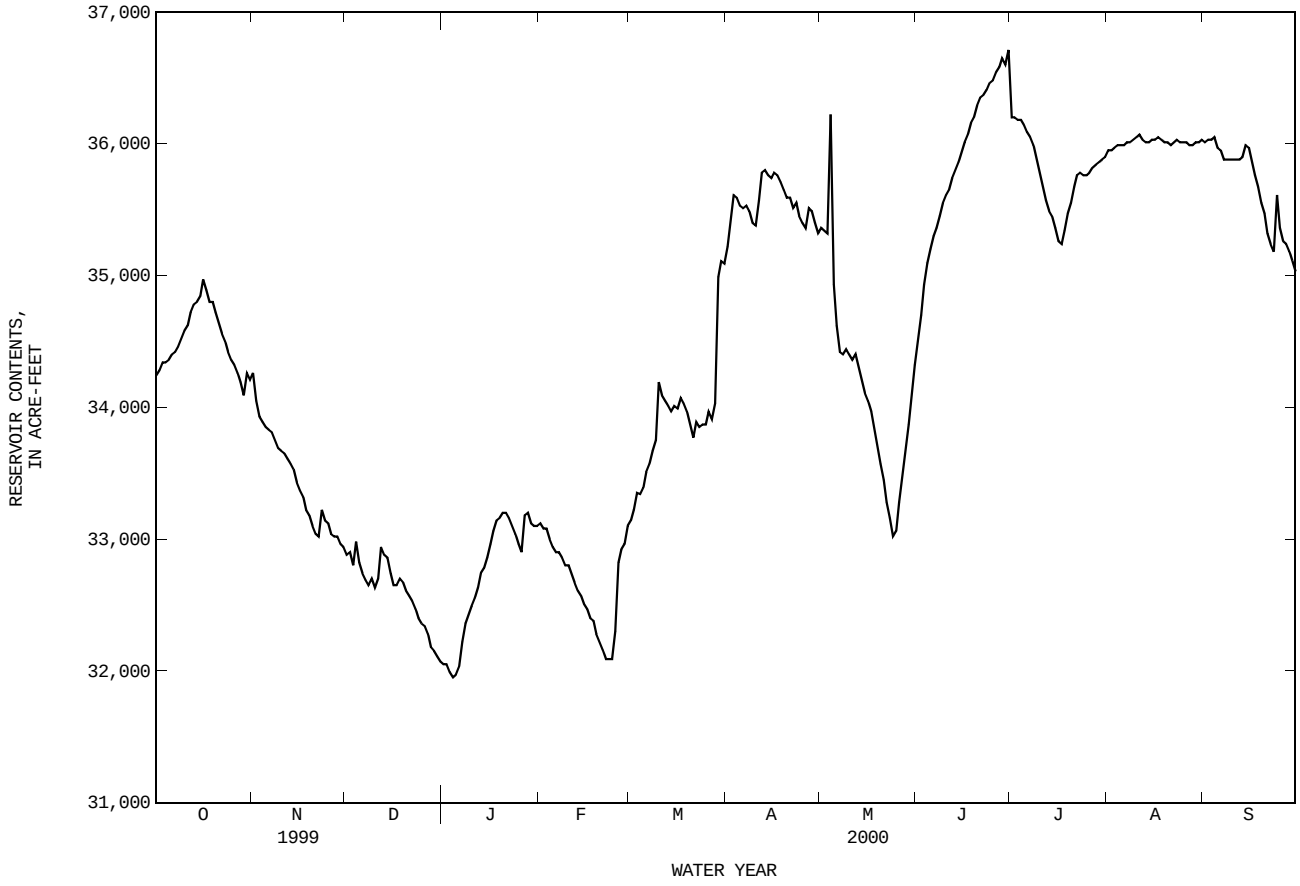
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34240	34260	32880	32050	33120	33140	35220	35360	34500	36200	35950	36010
2	34280	34050	32900	32050	33080	33220	35420	35340	34700	36200	35950	36030
3	34340	33930	32800	31990	33080	33350	35610	35320	34930	36180	35970	36030
4	34340	33890	32980	31950	33000	33340	35590	36220	35090	36180	35990	36050
5	34360	33850	32820	31970	32940	33390	35530	34930	35200	36140	35990	35970
6	34400	33830	32740	32030	32900	33510	35510	34620	35300	36090	35990	35950
7	34420	33810	32690	32220	32900	33570	35530	34420	35360	36050	36010	35880
8	34460	33750	32650	32360	32860	33670	35490	34400	35450	35990	36010	35880
9	34520	33690	32700	32420	32800	33750	35400	34440	35550	35880	36030	35880
10	34580	33670	32630	32490	32800	34190	35380	34400	35610	35780	36050	35880
11	34620	33650	32700	32550	32740	34090	35570	34360	35650	35670	36070	35880
12	34720	33610	32940	32630	32670	34050	35780	34400	35740	35570	36030	35880
13	34780	33570	32880	32740	32610	34010	35800	34300	35800	35490	36010	35900
14	34800	33530	32860	32780	32570	33970	35760	34210	35860	35450	36010	35990
15	34840	33430	32740	32860	32510	34010	35740	34110	35930	35360	36030	35970
16	34970	33370	32650	32960	32470	33990	35780	34050	36010	35260	36030	35860
17	34890	33320	32650	33060	32400	34070	35760	33970	36070	35240	36050	35760
18	34800	33220	32700	33140	32380	34030	35710	33850	36160	35340	36030	35670
19	34800	33180	32670	33160	32280	33970	35650	33710	36200	35470	36010	35550
20	34720	33100	32610	33200	32220	33870	35590	33570	36290	35550	36010	35470
21	34640	33040	32570	33200	32160	33770	35590	33450	36350	35670	35990	35320
22	34560	33020	32530	33160	32090	33890	35510	33280	36370	35760	36010	35240
23	34500	33220	32470	33100	32090	33850	35550	33160	36410	35780	36030	35180
24	34420	33140	32400	33040	32090	33870	35450	33020	36460	35760	36010	35610
25	34360	33120	32360	32960	32300	33870	35400	33060	36480	35760	36010	35360
26	34320	33040	32340	32900	32820	33970	35360	33280	36540	35780	36010	35260
27	34260	33020	32280	33180	32920	33910	35510	33470	36580	35820	35990	35240
28	34190	33020	32180	33200	32960	34030	35490	33670	36650	35840	35990	35180
29	34090	32960	32150	33120	33100	34990	35400	33870	36600	35860	36010	35110
30	34260	32940	32110	33100	---	35110	35320	34090	36710	35880	36010	35030
31	34210	---	32070	33100	---	35090	---	34320	---	35900	36030	---
MAX	34970	34260	32980	33200	33120	35110	35800	36220	36710	36200	36070	36050
MIN	34090	32940	32070	31950	32090	33140	35220	33020	34500	35240	35950	35030
(+)	339.74	339.10	338.65	339.18	339.18	340.17	340.28	339.79	340.94	340.56	340.62	340.14
(@)	0	-1270	-870	+1030	0	+1990	+230	-1000	+2390	-810	+130	-1000

CAL YR 1999 MAX 35470 MIN 32070 (@) -1800
WTR YR 2000 MAX 36710 MIN 31950 (@) +820

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07344488 MONTICELLO RESERVOIR NEAR MOUNT PLEASANT, TX--Continued



07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX

LOCATION.--Lat 33°04'48", long 95°00'07", Titus County, Hydrologic Unit 11140305, in control room in left abutment of service spillway at left end of Fort Sherman Dam on Big Cypress Creek, 1.7 mi upstream from Tankersley Creek, 3.5 mi upstream from bridge on U.S. Highway 271, 5.7 mi southwest of the county courthouse in Mount Pleasant, and 129.2 mi upstream from mouth.

DRAINAGE AREA.--239 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Apr 12, 1978, a nonrecording gage was located at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 10,800 ft long, including spillways. Deliberate impoundment began Aug 8, 1977, and dam was completed by Apr 1978. The spillway is an excavated channel cut through natural ground. The spillway is 4,500 ft wide, located to the left of the dam. The service spillway is 289.5 ft wide with 160 ft of net flow width controlled by four 40- by 22.5-foot tainter gates. The dam was built, and is owned, maintained, and operated by the Titus County Fresh Water Supply District No. 1 to provide water for municipal use. Flow from 75.0 mi^2 above this station is controlled by Lake Cypress Springs on Big Cypress Creek and 36.0 mi^2 is controlled by Montecello Reservoir on Blundell Creek, a tributary to Big Cypress Creek. Conservation pool storage is 192,350 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	349.0
Crest of uncontrolled spillway	341.3
Crest of gated spillway	316.5
Lowest gated outlet (invert)	294.5

COOPERATION.-Capacity Table 1-C was provided by URS/Forest and Cotton, Inc., Consulting Engineers. A new capacity table, Table 2-C, provided by the U.S. Army Corps of Engineers was put into effect Oct 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 224,400 acre-ft, Nov 5, 1994, elevation, 338.65 ft; minimum contents after initial filling, 133,100 acre-ft, Nov 25, 1982, elevation, 327.92 ft, using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 220,500 acre-ft, Jul 1, elevation, 338.25 ft; minimum contents, 180,900 acre-ft, Jan 26, 27, elevation, 333.92 ft.

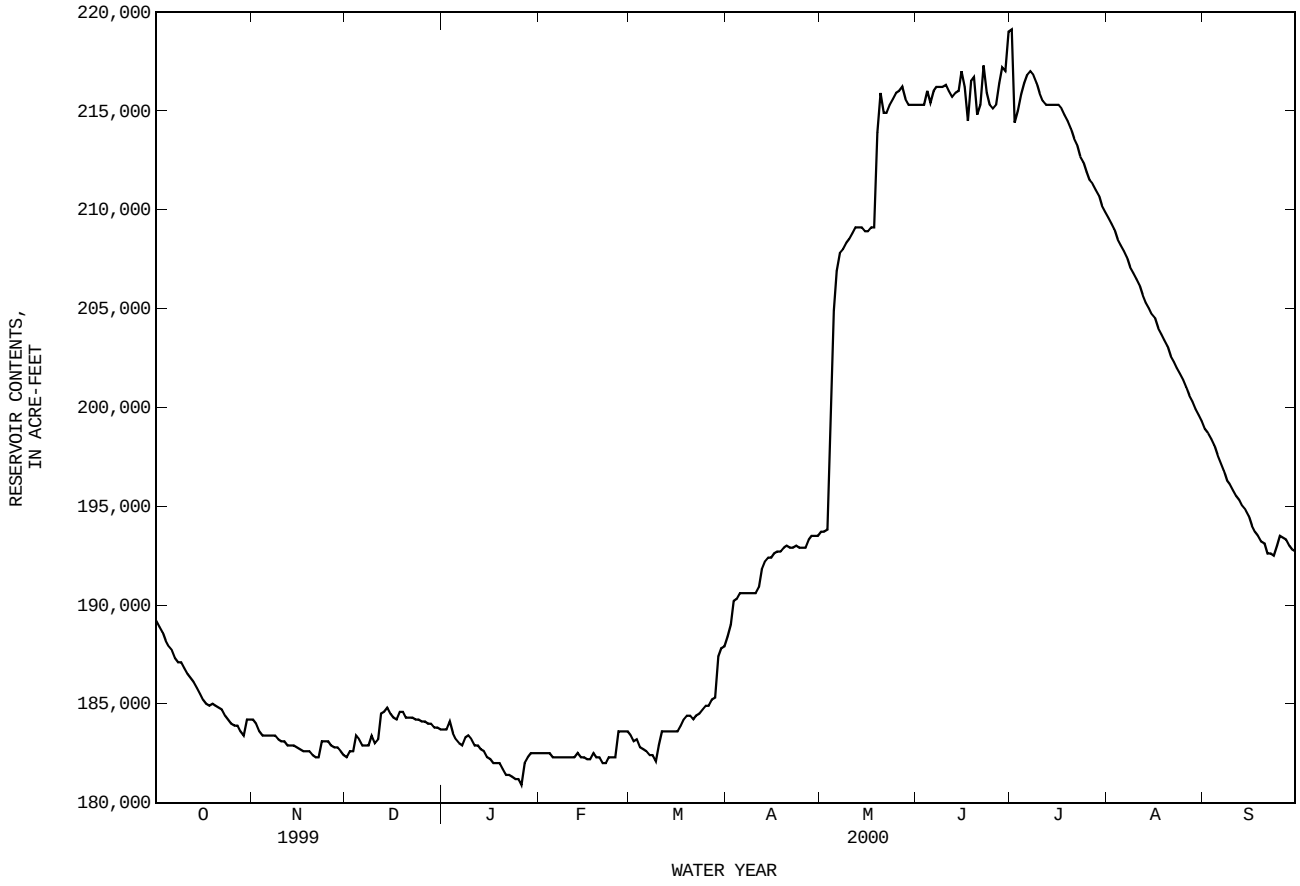
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189200	184200	182300	183700	182500	183400	188400	193700	215300	219100	209600	198900
2	188900	184000	182600	183700	182500	183100	189000	193700	215300	214400	209300	198700
3	188600	183600	182600	184100	182500	183200	190200	193800	215300	215000	209000	198400
4	188200	183400	183400	183500	182500	182800	190300	199800	216000	215800	208500	198100
5	187900	183400	183200	183200	182300	182700	190600	204900	215400	216400	208200	197600
6	187700	183400	182900	183000	182300	182600	190600	206900	216000	216800	207900	197200
7	187300	183400	182900	182900	182300	182400	190600	207800	216200	217000	207600	196800
8	187100	183400	182900	183300	182300	182400	190600	208000	216200	216800	207100	196300
9	187100	183200	183400	183400	182300	182100	190600	208300	216200	216400	206800	196100
10	186800	183100	183000	183200	182300	182900	190600	208500	216300	215900	206500	195800
11	186500	183100	183200	182900	182300	183600	190900	208800	216000	215500	206200	195500
12	186300	182900	184500	182900	182300	183600	191800	209100	215700	215300	205700	195300
13	186100	182900	184600	182700	182500	183600	192200	209100	215900	215300	205300	195000
14	185800	182900	184800	182600	182300	183600	192400	209100	216000	215300	205000	194800
15	185500	182800	184500	182300	182300	183600	192400	208900	217000	215300	204700	194500
16	185200	182700	184300	182200	182200	183600	192600	208900	216200	215300	204500	194000
17	185000	182600	184200	182000	182200	183900	192700	209100	214500	215100	204000	193700
18	184900	182600	184600	182000	182500	184200	192700	209100	216500	214800	203700	193500
19	185000	182600	184600	182000	182300	184400	192900	213900	216700	214500	203400	193200
20	184900	182400	184300	181700	182300	184400	193000	215900	214800	214100	203100	193100
21	184800	182300	184300	181400	182000	184200	192900	214900	215300	213600	202600	192600
22	184700	182300	184300	181400	182000	184400	192900	214900	217300	213300	202300	192600
23	184400	183100	184200	181300	182300	184500	193000	215300	215900	212700	202000	192500
24	184200	183100	184200	181200	182300	184700	192900	215600	215300	212400	201700	193000
25	184000	183100	184100	181200	182300	184900	192900	215900	215100	211900	201400	193500
26	183900	182900	184100	180900	183600	184900	192900	216000	215300	211500	201000	193400
27	183900	182800	184000	182000	183600	185200	193300	216200	216400	211300	200600	193300
28	183600	182800	184000	182300	183600	185300	193500	215600	217200	211000	200300	193000
29	183400	182600	183800	182500	183600	187400	193500	215300	217000	210700	199900	192800
30	184200	182400	183800	182500	---	187800	193500	215300	219000	210200	199600	192700
31	184200	---	183700	182500	---	187900	---	215300	---	209900	199300	---
MAX	189200	184200	184800	184100	183600	187900	193500	216200	219000	219100	209600	198900
MIN	183400	182300	182300	180900	182000	182100	188400	193700	214500	209900	199300	192500
(+)	334.30	334.09	334.24	334.10	334.23	334.72	335.34	337.71	338.09	337.14	335.99	335.26
(@)	-5200	-1800	+1300	-1200	+1100	+4300	+5600	+21800	+3700	-9100	-10600	-6600

CAL YR 1999 MAX 216100 MIN 182300 (@) -30000
WTR YR 2000 MAX 219100 MIN 180900 (@) +3300

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

07344489 LAKE BOB SANDLIN NEAR MOUNT PLEASANT, TX--Continued



07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 33°01′15", long 94°52′55", Camp-Titus County line, Hydrologic Unit 11140305, near center of stream at downstream side of bridge on State Highway 11, 0.5 mi upstream from Louisiana & Arkansas Railway Co. bridge, 1.4 mi upstream from Williamson Creek, 5.2 mi east of Pittsburg, 19.2 mi downstream from Lake Bob Sandlin, and 110.0 mi upstream from mouth.

DRAINAGE AREA.--366 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Apr 1943 to Dec 1962, published as "Cypress Creek near Pittsburg", Oct 1967 to Sep 1989 (daily mean discharge). Oct 1989 to current year, (peak discharges greater than base discharge). Gage-height records collected at this site from Sep 1963 to Dec 1967, are published in reports by the U.S. Army Corps of Engineers.
Water-quality records.--Chemical data: Mar 1965 to Aug 1989. Biochemical data: Jan 1983 to Sep 1985. Specific conductance: Oct 1968 to Sep 1989. Water temperature: Oct 1968 to Sep 1989.

REVISED RECORDS.--WSP 1211: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 247.49 ft above sea level. Prior to Nov 12, 1954, water-stage recorder at site 1,900 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--Records good. Since Jul 1970, at least 10% of contributing drainage area has been regulated by Lake Cypress Springs (station 07344484, conservation pool storage 67,690 acre-ft). Additional regulation since Aug 1972 by Monticello Reservoir (station 07344488, conservation pool storage 34,740 acre-ft) located on Blundell Creek and since Aug 1977 by Lake Bob Sandlin (station 07344489, conservation pool storage 192,350 acre-ft), 19 miles upstream. Wastewater effluent was returned to a tributary above this station by the city of Mount Pleasant, and wastewater effluent was returned to a tributary below this station by the city of Pittsburg. No known diversions. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1944-62, 1968-70), prior to regulation by Lake Cypress Springs, 349 ft^3/s (12.96 in/yr), 253,000 acre-ft/ yr.

AVERAGE DISCHARGE FOR REGULATED PERIOD.--19 years (water years 1971-89) regulated, 237 ft^3/s (171,900 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1944-62, 1968-70).--Maximum discharge, 58,500 ft^3/s Mar 30, 1945, gage height, 28.3 ft, from floodmark, and adjusted to present site on basis of record for flood of Apr 27, 1958, from rating curve extended above 20,000 ft^3/s; no flow Aug 20 to Oct 3, 1954, Jul 19 to Nov 4, 1956.

EXTREMES FOR REGULATED PERIOD (WATER YEARS 1971-89).--Maximum discharge, 50,400 ft^3/s, Mar 17, 1987, gage height, 23.65 ft; minimum discharge, 0.71 ft^3/s, Oct 1, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jan 1938 reached a stage of about 25 ft from information by local resident. Maximum stage since at least 1895, that of Mar 30, 1945.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
May 5	2145	2,640	13.47	Jun 20	1930	4,350	14.54
May 21	1115	3,110	13.77	Jun 23	2045	4,340	14.53
Jun 6	0645	4,300	14.51	Jul 2	1345	6,200	15.58
Jun 18	0030	3,560	14.04				

07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1998 to current year.
BIOCHEMICAL DATA: Oct 1998 to current year.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR											
14...	1300	46	299	6.8	15.8	35	8.4	96	1.9	65	32
JUN											
07...	1245	2100	170	7.0	23.0	5.7	5.0	59	1.3	44	14
JUL											
14...	1112	22	278	6.9	29.0	25	4.2	55	1.1	66	32
AUG											
30...	0926	18	1100	7.4	26.0	<.50	4.2	52	.1	230	140

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
MAR											
14...	17	5.7	27	1	6.8	33	48	28	<.10	12	191
JUN											
07...	10	4.4	11	.8	5.5	30	25	12	.13	7.0	115
JUL											
14...	16	6.3	26	1	7.3	34	42	27	.16	9.6	191
AUG											
30...	78	8.2	124	4	30	85	220	110	.13	6.9	772

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
MAR											
14...	170	29	1.20	.019	1.22	.071	.75	.83	.368	.345	1.1
JUN											
07...	96	11	--	<.010	.196	.034	.67	.70	.121	.099	.30
JUL											
14...	169	29	2.83	.041	2.87	.096	.60	.69	.282	.251	.77
AUG											
30...	727	<10	21.1	.045	21.1	.041	1.2	1.2	4.15	3.76	12

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
MAR										
14...	15	7.5	<1.0	E1	41	<1.0	<1.0	<1.0	<1.0	2.2
JUN										
07...	15	13	<1.0	<2	54	<1.0	<1.0	<.80	<1.0	2.1
JUL										
14...	8.2	--	--	--	--	--	--	--	--	--
AUG										
30...	9.5	5.8	<1.0	3	63	<1.0	<1.0	<.80	1.1	5.4

07344500 BIG CYPRESS CREEK NEAR PITTSBURG, TX--Continued

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

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
MAR										
14...	170	<1.0	159	<.2	<1.0	4.9	<2	<1.0	6.0	<1.0
JUN										
07...	120	<1.0	14	<.2	<1.0	2.6	<2	<1.0	5.2	<1.0
JUL										
14...	E6.6	--	270	--	--	--	--	--	--	--
AUG										
30...	<10	<1.0	23	<.2	13	4.9	<2	<1.0	8.0	<1.0

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07345900 LAKE O' THE PINES NEAR JEFFERSON, TX

LOCATION.--Lat 32°45'18", long 94°29'57", Marion County, Hydrologic Unit 11140305, on left bank 1,500 ft upstream from left end of Ferrell's Bridge Dam on Big Cypress Creek, on Farm Road 726, 9.0 mi west of Jefferson, and 80.1 mi upstream from mouth.

DRAINAGE AREA.--850 mi^2.

WATER-CONTENT RECORDS

PERIOD OF RECORD.--Aug 1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Nov 12, 1957, non-recording gage at same site and datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam 10,600 ft long, including a 200-foot-wide concrete spillway. Impoundment of water began Aug 21, 1957, and the dam was completed Jun 25, 1958. Official operation began Dec 11, 1959. The flood-control outlet works consist of two 10.0-foot-diameter conduits that are controlled by two 8.0- by 12.5-foot electrically driven broome-type gates. The low-flow outlet works consist of a controlled 14 inch pipe. Flow over the spillway is discharged into a 2,000-foot-long rectified channel and then into Cypress Creek. The capacity table is based on a survey made in 1950. The lake was built for conservation, flood control, and water supply. During the current year, an unknown amount of water was diverted from the lake for municipal and industrial uses. Conservation pool storage is 252,000 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	277.0
Crest of spillway	249.5
Top of conservation pool	228.4
Crest of intake to wet well (14 in)	202.5
Lowest gated outlet (invert)	200.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 694,360 acre-ft, May 5, 1966, elevation, 245.41 ft; minimum since Dec 1959, 210,100 acre-ft, Oct 6, 1984, elevation, 225.98 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 317,700 acre-ft, May 24, elevation, 231.66 ft; minimum contents, 227,900 acre-ft, Dec 2, elevation, 227.01 ft.

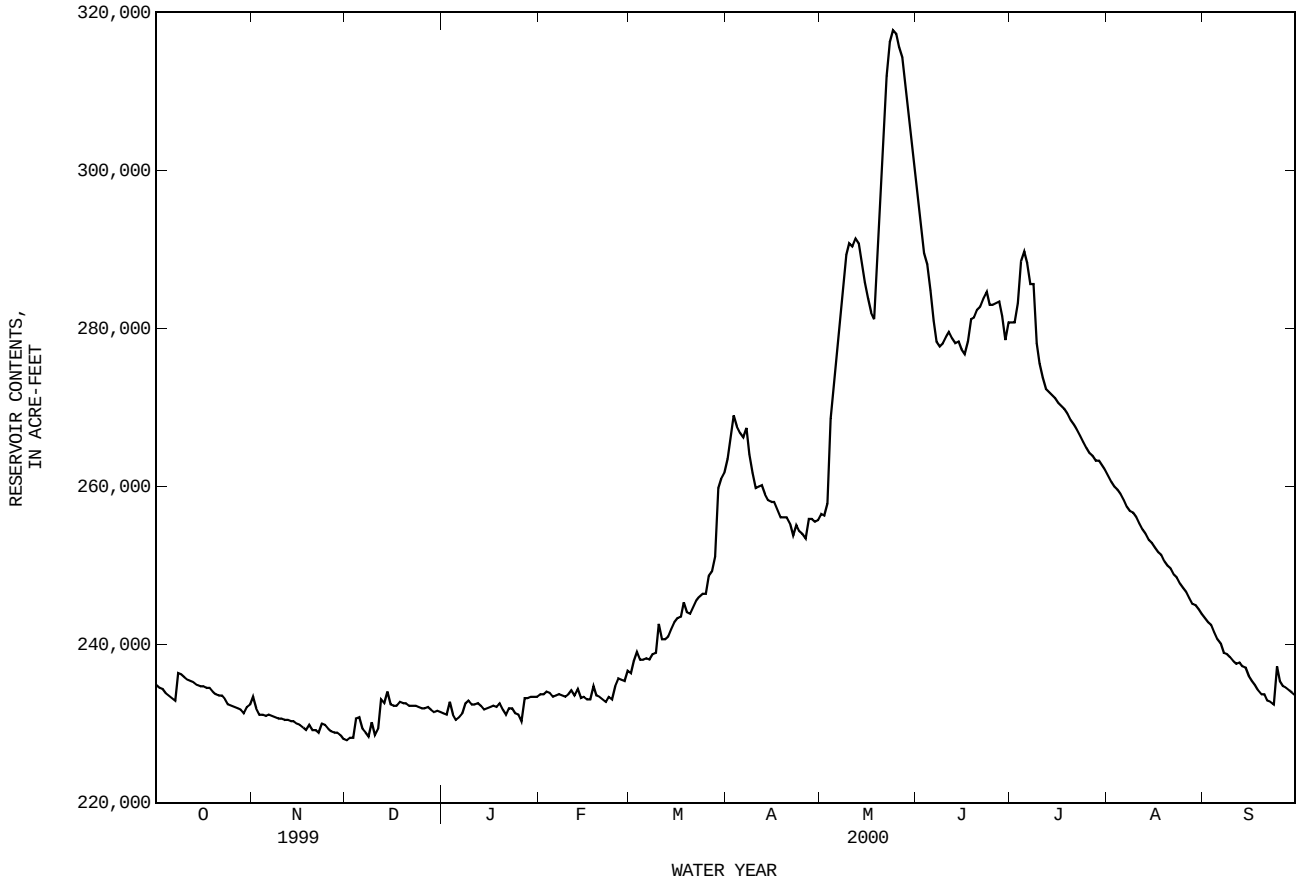
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	234900	233400	227900	231300	233700	236400	263500	256500	296100	280700	261300	243300
2	234500	231900	228200	231100	233700	237900	266200	256300	292600	280700	260500	242800
3	234400	231100	228200	232700	234000	239100	269000	257800	289500	283200	260000	242400
4	233900	231100	230600	231100	233900	238100	267600	268600	288100	288500	259600	241500
5	233500	230900	230800	230500	233400	238100	266800	272900	284800	289700	259000	240700
6	233200	231100	229300	230800	233500	238200	266200	276500	280900	288300	258200	240100
7	232900	230900	228800	231300	233700	238100	267400	280700	278300	285600	257400	238900
8	236400	230800	228400	232600	233500	238800	264000	285000	277700	285600	256900	238800
9	236200	230600	230100	232900	233400	238900	261700	289300	278100	278100	256700	238400
10	235900	230600	228500	232400	233700	242600	259800	290700	278900	275500	256100	237900
11	235500	230500	229300	232400	234200	240700	260000	290300	279500	273700	255300	237600
12	235400	230500	233100	232600	233500	240700	260200	291300	278700	272300	254600	237700
13	235200	230300	232600	232200	234400	241000	259000	290700	278100	271900	254000	237200
14	234900	230300	234000	231800	233200	241900	258200	288300	278300	271500	253200	237000
15	234700	230000	232400	231900	233400	242800	258000	285800	277300	271100	252800	236000
16	234700	229800	232200	232100	233100	243300	258000	283800	276700	270500	252300	235400
17	234500	229500	232200	232200	233100	243500	257100	282000	278300	270100	251700	234900
18	234500	229200	232700	232100	234700	245300	256100	281100	281100	269700	251300	234200
19	234000	229800	232600	232600	233500	244000	256100	289500	281300	269200	250500	233700
20	233700	229200	232600	231800	233400	243900	256100	296300	282400	268400	250000	233700
21	233500	229200	232200	231100	233100	244800	255300	305100	282800	267800	249600	232900
22	233500	228800	232200	231900	232700	245500	253800	311900	283800	267200	248800	232700
23	233100	230000	232200	231900	233400	246100	255100	316200	284600	266400	248500	232400
24	232400	229800	232100	231300	233100	246400	254400	317700	283000	265600	247700	237200
25	232200	229300	231900	231100	234700	246400	254000	317300	283000	264800	247200	235400
26	232100	229000	231900	230300	235700	248700	253400	315500	283200	264200	246600	234700
27	231900	228800	232100	233200	235500	249200	255900	314200	283400	263800	245900	234500
28	231800	228800	231800	233200	235400	251100	255900	309800	281500	263300	245100	234200
29	231300	228500	231400	233400	236700	259800	255500	305900	278500	263300	245000	233900
30	232100	228000	231600	233400	---	260900	255700	302600	280700	262700	244400	233500
31	232400	---	231400	233400	---	261700	---	299200	---	262100	243900	---
MAX	236400	233400	234000	233400	236700	261700	269000	317700	296100	289700	261300	243300
MIN	231300	228000	227900	230300	232700	236400	253400	256300	276700	262100	243900	232400
(+)	227.26	227.02	227.21	227.32	227.50	228.86	228.54	230.77	229.85	228.88	227.91	227.33
(@)	-3300	-4400	+3400	+2000	+3300	+25000	-6000	+43500	-18500	-18600	-18200	-10400

CAL YR 1999 MAX 319000 MIN 227900 (@) -27600
WTR YR 2000 MAX 317700 MIN 227900 (@) -2200

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07345900 LAKE O' THE PINES NEAR JEFFERSON, TX--Continued



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1969 to Sep 1984, Oct 1998 to current year.
BIOCHEMICAL DATA: Oct 1969 to Sep 1984, Oct 1998 to current year.
PESTICIDE DATA: Aug 1999 to current year.

REMARKS.--Pesticide samples are composited from discrete samples collected at the surface, middle, and bottom of the reservoir.

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

324518094300801 - Lk O the Pines Site AC

DATE	TIME	RESER-VOIR STORAGE (AC-FT) (00054)	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)
MAR												
14...	1016	255000	1.00	132	6.8	16.0	1.04	8.9	91	K5	K1	27
14...	1020	--	10.0	132	6.7	15.5	--	8.9	90	--	--	--
14...	1024	--	20.0	132	6.7	15.5	--	8.9	90	--	--	--
14...	1028	--	30.0	132	6.8	15.5	--	9.0	91	--	--	--
14...	1032	--	40.0	132	6.8	15.5	--	8.9	90	--	--	--
14...	1036	--	45.0	133	6.8	15.0	--	8.9	89	--	--	27
JUN												
07...	0941	294000	1.00	137	6.7	26.0	1.37	6.2	77	K1	K100	27
07...	0946	--	10.0	137	6.6	25.0	--	6.0	73	--	--	--
07...	0950	--	20.0	139	6.2	25.0	--	.6	7	--	--	--
07...	0955	--	30.0	148	6.4	23.5	--	.2	2	--	--	--
07...	1000	--	40.0	156	6.6	23.0	--	.2	2	--	--	--
07...	1005	--	47.0	162	6.6	23.0	--	.3	4	--	--	31
AUG												
30...	0940	259000	1.00	136	7.2	31.0	1.28	6.8	93	K1	K1	27
30-30	0940	--	--	--	--	--	--	--	--	--	--	--
30...	0945	--	10.0	136	7.0	31.0	--	6.5	88	--	--	--
30...	0950	--	20.0	136	6.4	30.0	--	1.8	24	--	--	--
30...	0956	--	30.0	178	6.6	26.0	--	.3	4	--	--	--
30...	1003	--	44.0	188	6.6	25.5	--	1.5	19	--	--	36

324518094300801 - Lk O the Pines Site AC

DATE	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
MAR												
14...	14	4.95	3.47	12.2	1	45	4.3	13	23.4	13.6	<.1	5.7
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	14	5.60	3.22	12.4	1	46	4.0	13	23.7	13.7	<.1	5.7
JUN												
07...	13	5.51	3.29	11.9	1	44	4.0	15	23.5	12.2	<.1	5.1
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	6.22	3.66	11.9	.9	42	3.9	33	17.1	13.1	.2	8.5
AUG												
30...	11	4.84	3.61	12.3	1	45	4.6	16	19.6	11.6	.1	9.7
30-30	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	7.75	3.94	12.0	.9	39	4.6	70	4.5	10.7	<.1	16.5

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

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

324518094300801 - Lk O the Pines Site AC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	2,6-DI-ETHYL ANILINE WAT FLT 0.7 U GF, REC (UG/L) (82660)
MAR												
14...	76	<.010	<.050	<.020	--	.34	<.050	<.010	--	20	4	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	76	<.010	<.050	<.020	--	.32	<.050	<.010	--	E10	18	--
JUN												
07...	74	<.010	<.050	.040	.32	.36	<.050	<.010	--	10	13	--
07...	--	<.010	<.050	.043	.32	.36	<.050	<.010	--	E10	31	--
07...	--	.030	<.050	.133	.33	.46	<.050	<.010	--	30	281	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	90	<.010	<.050	.663	.36	1.0	.059	.044	.135	2150	3250	--
AUG												
30...	76	<.010	<.050	<.020	--	.38	<.050	<.010	--	<10	6	--
30-30	--	--	--	--	--	--	--	--	--	--	--	<.003
30...	--	<.010	<.050	<.020	--	.42	<.050	<.010	--	10	9	--
30...	--	<.010	<.050	<.020	--	.43	<.050	<.010	--	240	359	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	115	<.010	<.050	2.38	.73	3.1	.484	.475	1.46	4710	4280	--

324518094300801 - Lk O the Pines Site AC

DATE	ACETO-CHLOR, WATER FLTRD REC (UG/L) (49260)	ALA-CHLOR, WATER, DISS, REC, (UG/L) (46342)	ALPHA BHC DIS-SOLVED (UG/L) (34253)	ATRA-ZINE, WATER, DISS, REC (UG/L) (39632)	METHYL AZIN-PHOS WAT FLT 0.7 U GF, REC (UG/L) (82686)	BEN-FLUR-ALIN WAT FLD 0.7 U GF, REC (UG/L) (82673)	BUTYL-ATE, WATER, DISS, REC (UG/L) (04028)	CAR-BARYL WATER FLTRD 0.7 U GF, REC (UG/L) (82680)	CARBO-FURAN WATER FLTRD 0.7 U GF, REC (UG/L) (82674)	CHLOR-PYRIFOS DIS-SOLVED (UG/L) (38933)	PER-METHRIN CIS WAT FLT 0.7 U GF, REC (UG/L) (82687)	CYANA-ZINE, WATER, DISS, REC (UG/L) (04041)
MAR												
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
30...	--	--	--	--	--	--	--	--	--	--	--	--
30-30	<.002	<.002	<.002	.015	<.001	<.002	<.002	<.003	<.003	<.004	<.005	<.004
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

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

324518094300801 - Lk O the Pines Site AC

DATE	DCPA WATER FLTRD 0.7 U GF, REC (UG/L) (82682)	DEETHYL ATRA-ZINE, WATER, DISS, REC (UG/L) (04040)	DI-AZINON, DIS-SOLVED (UG/L) (39572)	DI-ELDRIN DIS-SOLVED (UG/L) (39381)	DISUL-FOTON WATER FLTRD 0.7 U GF, REC (UG/L) (82677)	EPTC WATER FLTRD 0.7 U GF, REC (UG/L) (82668)	ETHAL-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82663)	ETHO-PROP WATER FLTRD 0.7 U GF, REC (UG/L) (82672)	FONOFOS WATER DISS REC (UG/L) (04095)	LINDANE DIS-SOLVED (UG/L) (39341)	LIN-URON WATER FLTRD 0.7 U GF, REC (UG/L) (82666)	MALA-THION, DIS-SOLVED (UG/L) (39532)
MAR												
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
30...	--	--	--	--	--	--	--	--	--	--	--	--
30-30	<.002	E.005	<.002	<.001	<.017	<.002	<.004	<.003	<.003	<.004	<.002	<.005
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--

324518094300801 - Lk O the Pines Site AC

DATE	METO-LACHLOR WATER DISSOLV (UG/L) (39415)	METRI-BUZIN SENCOR WATER DISSOLV (UG/L) (82630)	MOL-INATE WATER FLTRD 0.7 U GF, REC (UG/L) (82671)	NAPROP-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82684)	P,P' DDE DISSOLV (UG/L) (34653)	PARA-THION, DIS-SOLVED (UG/L) (39542)	METHYL PARA-THION WAT FLT 0.7 U GF, REC (UG/L) (82667)	PEB-ULATE WATER FILTRD 0.7 U GF, REC (UG/L) (82669)	PENDI-METH-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82683)	PHORATE WATER FLTRD 0.7 U GF, REC (UG/L) (82664)	PRO-METON, WATER, DISS, REC (UG/L) (04037)
MAR											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
30...	--	--	--	--	--	--	--	--	--	--	--
30-30	<.002	<.004	<.004	<.003	<.006	<.004	<.006	<.004	<.004	<.002	<.018
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

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

324518094300801 - Lk O the Pines Site AC

DATE	PROPA-CHLOR, WATER, DISS, REC (UG/L) (04024)	PRO-PANIL WATER FLTRD 0.7 U GF, REC (UG/L) (82679)	PRO-PARGITE WATER FLTRD 0.7 U GF, REC (UG/L) (82685)	PRON-AMIDE WATER FLTRD 0.7 U GF, REC (UG/L) (82676)	SI-MAZINE, WATER, DISS, REC (UG/L) (04035)	TEBU-THIURON WATER FLTRD 0.7 U GF, REC (UG/L) (82670)	TER-BACIL WATER FLTRD 0.7 U GF, REC (UG/L) (82665)	TER-BUFOS WATER FLTRD 0.7 U GF, REC (UG/L) (82675)	THIO-BENCARB WATER FLTRD 0.7 U GF, REC (UG/L) (82681)	TRIAL-LATE WATER FLTRD 0.7 U GF, REC (UG/L) (82678)	TRI-FLUR-ALIN WAT FLT 0.7 U GF, REC (UG/L) (82661)
MAR											
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
JUN											
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
AUG											
30...	--	--	--	--	--	--	--	--	--	--	--
30-30	<.007	<.004	<.013	<.003	.019	.014	<.007	<.013	<.002	<.001	<.002
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--

324509094303901 - Lk O the Pines Site AR

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAR							
14...	1043	1.00	131	6.7	16.0	9.0	92
14...	1045	10.0	131	6.7	15.5	8.6	87
14...	1047	20.0	132	6.6	15.5	8.4	85
14...	1050	30.0	133	6.6	15.5	7.9	80
14...	1052	35.0	133	6.5	15.5	7.4	75
JUN							
07...	1017	1.00	137	6.7	26.0	6.1	75
07...	1022	10.0	137	6.6	25.5	5.6	69
07...	1026	20.0	140	6.2	25.0	.8	10
07...	1031	28.0	144	6.3	24.5	.3	4
AUG							
30...	1023	1.00	137	7.4	31.5	7.1	97
30...	1025	10.0	137	7.2	31.0	6.8	93
30...	1028	18.0	137	7.0	31.0	6.1	83

324613094323001 - Lk O the Pines Site BC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)
MAR									
14...	1105	1.00	132	6.9	16.5	1.13	9.3	95	<.010
14...	1108	10.0	132	6.9	16.0	--	9.1	92	--
14...	1111	20.0	133	6.8	16.0	--	9.0	91	--
14...	1114	30.0	135	6.7	15.5	--	8.4	84	--
14...	1118	44.0	135	6.7	15.5	--	8.4	84	<.010
JUN									
07...	1044	1.00	138	6.9	26.5	1.16	6.7	84	<.010
07...	1047	10.0	137	6.9	26.0	--	7.0	87	--
07...	1050	20.0	138	6.6	25.5	--	5.0	61	--
07...	1053	30.0	149	6.5	24.0	--	.3	4	--
07...	1056	40.0	156	6.6	23.5	--	.2	2	--
07...	1100	46.0	156	6.6	23.5	--	.4	5	<.010
AUG									
30...	1042	1.00	138	7.5	31.0	1.34	7.3	99	<.010
30...	1045	10.0	138	6.9	30.5	--	5.9	80	--
30...	1048	20.0	157	6.6	29.0	--	.2	3	--
30...	1051	30.0	179	6.7	26.5	--	.2	3	--
30...	1055	41.0	200	6.7	26.0	--	.2	2	<.010

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

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

324613094323001 - Lk O the Pines Site BC

DATE	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR									
14...	<.050	<.020	--	.35	<.050	<.010	--	E10	2
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	<.050	<.020	--	.33	<.050	<.010	--	<10	9
JUN									
07...	<.050	.053	.32	.38	<.050	<.010	--	20	33
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--
07...	<.050	.547	.35	.90	E.041	.038	.117	1290	2890
AUG									
30...	<.050	.052	.41	.47	<.050	<.010	--	10	60
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	<.050	2.63	.83	3.5	.645	.615	1.89	6200	4560

324738094325101 - Lk O the Pines Site CC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAR							
14...	1139	1.00	131	6.9	17.5	9.0	94
14...	1141	10.0	130	6.8	17.0	8.8	91
14...	1143	21.0	126	6.7	16.5	8.3	85
JUN							
07...	1123	1.00	124	6.8	26.5	6.7	84
07...	1126	10.0	132	6.6	26.0	5.5	68
07...	1128	22.0	141	6.3	25.5	.6	7
AUG							
30...	1107	1.00	138	7.3	31.5	7.2	99
30...	1110	10.0	137	6.6	30.5	4.1	55
30...	1113	20.0	159	6.6	30.0	.4	5

324806094350001 - Lk O the Pines Site DC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)
MAR							
14...	1207	1.00	133	6.9	17.5	8.9	93
14...	1210	10.0	124	6.8	16.5	8.6	88
14...	1213	22.0	121	6.8	16.5	8.6	88
JUN							
07...	1152	1.00	121	6.8	27.0	6.6	83
07...	1154	10.0	132	6.5	26.5	4.7	59
07...	1157	23.0	141	6.3	26.0	.8	10
AUG							
30...	1135	1.00	137	7.9	32.0	7.7	107
30...	1138	10.0	139	6.8	31.0	5.0	68
30...	1141	22.0	141	6.5	31.0	1.6	22

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

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

324726094363801 - Lk O the Pines Site EC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR												
14...	1235	1.00	134	7.0	16.5	.98	9.4	97	K6	K4	28	14
14...	1240	10.0	136	7.0	16.0	--	9.1	92	--	--	--	--
14...	1244	20.0	139	6.8	16.0	--	8.6	87	--	--	--	--
14...	1248	34.0	139	6.8	16.0	--	8.4	85	--	--	29	15
JUN												
07...	1212	1.00	136	7.0	27.0	.88	7.1	89	K1	K4	29	12
07...	1217	10.0	137	6.7	26.0	--	5.9	73	--	--	--	--
07...	1222	20.0	138	6.6	26.0	--	4.9	61	--	--	--	--
07...	1228	30.0	161	6.7	24.5	--	.2	2	--	--	--	--
07...	1233	36.0	166	6.7	24.5	--	.3	4	--	--	32	--
AUG												
30...	1210	1.00	139	7.7	32.0	1.04	7.4	102	K1	K1	28	10
30...	1214	10.0	140	6.7	30.5	--	4.0	54	--	--	--	--
30...	1219	20.0	160	6.8	30.0	--	.2	3	--	--	--	--
30...	1224	32.0	182	6.9	29.0	--	.2	3	--	--	37	--

324726094363801 - Lk O the Pines Site EC

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
MAR											
14...	5.17	3.55	12.6	1	46	4.0	13	23.7	13.8	<.1	5.4
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	5.47	3.63	12.7	1	45	4.3	13	25.2	14.7	<.1	6.0
JUN											
07...	6.28	3.15	11.2	.9	42	4.3	16	24.0	11.7	<.1	7.3
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--	--
07...	6.98	3.46	11.9	.9	41	4.6	33	19.5	12.2	<.1	10.4
AUG											
30...	4.94	3.70	13.1	1	46	4.8	18	19.0	11.9	.1	11.7
30...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
30...	8.26	3.90	12.2	.9	38	4.8	49	10.1	11.3	.1	15.5

324726094363801 - Lk O the Pines Site EC

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR											
14...	76	<.010	<.050	<.020	--	.33	<.050	<.010	--	10	4
14...	--	--	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
14...	80	<.010	<.050	<.020	--	.34	<.050	<.010	--	10	11
JUN											
07...	78	<.010	<.050	.048	.38	.43	<.050	<.010	--	50	42
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	<.010	<.050	.146	.40	.55	<.050	<.010	--	80	320
07...	--	<.010	<.050	.688	.39	1.1	<.050	.021	.064	650	3110
07...	95	<.010	<.050	.886	.41	1.3	.059	.047	.144	1270	3380
AUG											
30...	80	<.010	<.050	<.020	--	.42	<.050	<.010	--	E10	58
30...	--	<.010	<.050	<.020	--	.40	<.050	<.010	--	80	334
30...	--	<.010	<.050	.562	.49	1.0	.118	.102	.313	740	2170
30...	105	<.010	<.050	1.38	.56	1.9	.347	.319	.978	3290	3760

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

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

325100094420301 - Lk O the Pines Site FC

DATE	TIME	SAM-PLING DEPTH (FEET) (00003)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TRANS-PAR-ENCY (SECCHI DISK) (M) (00078)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML) (31625)	FECAL STREP, KF STRP MF, WATER (COL/ 100 ML) (31673)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR												
14...	1318	1.00	292	7.2	17.0	.73	9.4	99	K16	K1	61	32
14...	1323	10.0	292	7.2	17.0	--	9.4	98	--	--	--	--
14...	1328	21.0	299	7.0	16.0	--	8.0	81	--	--	65	32
JUN												
07...	1305	1.00	180	6.8	25.5	.58	5.9	72	23	310	45	14
07...	1310	10.0	175	6.7	25.5	--	5.0	61	--	--	--	--
07...	1315	23.0	177	6.7	25.0	--	4.6	56	--	--	44	13
AUG												
30...	1335	1.00	158	6.7	32.5	.52	5.2	73	21	27	30	11
30...	1341	10.0	172	6.5	31.0	--	.4	5	--	--	--	--
30...	1347	20.0	183	6.5	30.5	--	.2	3	--	--	--	--

325100094420301 - Lk O the Pines Site FC

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	SODIUM PERCENT (00932)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
MAR												
14...	16.4	4.86	26.3	1	45	8.1	30	56.3	25.8	.1	6.5	164
14...	--	--	--	--	--	--	--	--	--	--	--	--
14...	17.8	5.06	28.5	2	45	8.3	33	61.0	27.5	.1	7.2	177
JUN												
07...	11.6	3.83	12.8	.8	35	5.8	31	29.1	12.5	.1	11.1	106
07...	--	--	--	--	--	--	--	--	--	--	--	--
07...	11.5	3.78	12.5	.8	35	5.7	31	27.4	11.8	.1	11.2	103
AUG												
30...	5.26	4.20	15.3	1	47	5.4	20	19.1	15.7	.1	16.9	94
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	30	--	--	--	--	--

325100094420301 - Lk O the Pines Site FC

DATE	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)
MAR											
14...	.230	.019	.249	.059	.53	.59	<.050	<.010	--	40	146
14...	--	--	--	--	--	--	--	--	--	--	--
14...	.255	.023	.278	.054	.53	.59	<.050	<.010	--	40	133
JUN											
07...	--	<.010	<.050	.021	.58	.60	E.038	.018	.055	260	79
07...	--	--	--	--	--	--	--	--	--	--	--
07...	--	<.010	<.050	.120	.59	.71	E.034	.021	.064	300	161
AUG											
30...	--	<.010	<.050	<.020	--	.56	E.039	.022	.067	40	100
30...	--	<.010	<.050	.045	.59	.64	E.034	.023	.071	80	277
30...	--	<.010	<.050	.090	.60	.69	.051	.042	.129	--	--

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O' the Pines Site AC (324518094300801)

Phytoplankton Analyses October 1999 to September 2000

Date	03/14/00
Time	1016
TOTAL CELLS/mL	25,348
NUMBER OF SPECIES	37
DEPTH COLLECTED (ft.)	1.70

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclotella sp. 1	482
Melosira cf. *distans*	486
Melosira granulata	729
Melosira italica	3,132
Order Pennales	
Asterionella formosa	20
Nitzschia acicularis	39
Nitzschia palea	13
Nitzschia pumila	13
Synedra tenera	13
Synedra ulna	39
CHLOROPHYTA	
Ankistrodesmus convolutus	39
Ankistrodesmus falcatus	4,271
Botryococcus braunii	521
Chlamydomonas incerta	13
Crucigenia tetrapedia	52
Dictyosphaerium pulchellum	260
Monoraphidium capricornutum	26
Mougeotia sp.	13
Non-motile Chlorococcales-spherical	26
Oocystis parva	39
Scenedesmus bijuga	26
Scenedesmus longus	52
Scenedesmus protuberans	104
Scenedesmus quadricauda	26
Scenedesmus quadricauda v. *longispina*	104
Schroederia judayi	13
Selenastrum minutum	13
Tetrastrum staurogeniaeforme	52
CYANOPHYTA	
Anabaena circinalis	1,337
Aphanocapsa delicatissima	6,325
Aphanothece nidulans	1,953
Non-motile blue-greens (>1 um)	26
CHRYSOPHYTA	
Erkenia subaequiciliata	13
Uroglena sp. (single)	52
CRYPTOPHYTA	
Cryptomonas erosa	91
Rhodomonas minuta v. *nannoplanctica*	247
Misc. microflagellate	4,688

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O' the Pines Site FC (325100094420301)

Phytoplankton Analyses October 1999 to September 2000

Date	03/14/00
Time	1318
TOTAL CELLS/mL	21,401
NUMBER OF SPECIES	20
DEPTH COLLECTED (ft.)	1.20

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclotella sp. 1	3,021
Melosira italica	451
Order Pennales	
Cocconeis placentula v. *lineata*	35
Fragilaria construens	104
Navicula capitata	9
Navicula sp.	35
CHLOROPHYTA	
Ankistrodesmus convolutus	35
Ankistrodesmus falcatus	938
Chlamydomonas globosa	174
Chlamydomonas platystigma	35
Monoraphidium capricornutum	313
Non-motile Chlorococcales-spherical	278
CYANOPHYTA	
Non-motile blue-greens (>1 um)	139
CHRYSOPHYTA	
Uroglena sp. (single)	104
PYRRHOPHYTA	
Gymnodinium sp. 1	35
Gymnodinium sp. 2	35
Gymnodinium sp. 3	69
CRYPTOPHYTA	
Cryptomonas erosa	278
Rhodomonas minuta v. *nannoplanctica*	12,813
Misc. microflagellate	2,500

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O' the Pines Site AC (324518094300801)

Phytoplankton Analyses October 1999 to September 2000

Date	06/07/00
Time	0941
TOTAL CELLS/mL	90,865
NUMBER OF SPECIES	34
DEPTH COLLECTED (ft.)	2.25

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Melosira cf. *distans*	260
Melosira granulata	930
Stephanodiscus medius	37
Stephanodiscus minutulus	112
Order Pennales	
Diatoma tenue	74
Nitzschia acicularis	186
Synedra tenera	37
Synedra ulna v. *ulna*	298
CHLOROPHYTA	
Ankistrodesmus convolutus	37
Dictyosphaerium pulchellum	744
Didymogenes anomala	74
Non-motile Chlorococcales-spherical	372
Oocystis parva	149
Staurastrum dejectum	37
Tetraedron minimum	112
Tetrastrum glabrum	149
Ulothrix sp.	372
CYANOPHYTA	
Anabaena aphanizomenoides	5,395
Anabaena macrospora	5,767
Aphanizomenon sp.	3,348
Aphanocapsa delicatissima	8,334
Aphanocapsa elachista	27,829
Aphanothece nidulans	1,191
Chroococcus minimus	447
Cylindrospermopsis philippinensis	1,674
Dactylococcopsis irregularis	3,609
Lyngbya limnetica	23,246
Merismopedia tenuissima	3,274
Non-motile blue-greens (>1 um)	37
CHRYSOPHYTA	
Mallomonas sp.	6
PYRRHOPHYTA	
Gymnodinium sp. 1	6
CRYPTOPHYTA	
Cryptomonas cyst	6
Cryptomonas erosa	112
Misc. micros, 1 flagellum	2,604

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O' the Pines Site FC (325100094420301)

Phytoplankton Analyses October 1999 to September 2000

Date	06/07/00
Time	1305
TOTAL CELLS/mL	34,610
NUMBER OF SPECIES	43
DEPTH COLLECTED (ft.)	0.95

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclotella meneghiniana	2,552
Cyclotella sp. 1	2,761
Melosira cf. *distans*	417
Melosira granulata	1,406
Order Pennales	
Nitzschia acicularis	104
Nitzschia palea	1,458
Synedra tenera	52
CHLOROPHYTA	
Ankistrodesmus convolutus	104
Ankistrodesmus falcatus	260
Chlamydomonas globosa	156
Chlamydomonas incerta	104
Chlamydomonas platystigma	104
Closterium gracile v. *tenue*	9
Crucigenia rectangularis	417
Dictyosphaerium pulchellum	208
Golenkinia radiata	104
Kirchneriella subsolitaria	104
Monomastix astigmata	156
Monoraphidium capricornutum	729
Non-motile Chlorococcales-spherical	625
Oocystis parva	104
Pandorina morum	417
Pediastrum duplex	833
Scenedesmus bicaudatus	104
Scenedesmus bijuga	208
Scenedesmus intermedius	208
Scenedesmus quadricauda	938
Spermatozopsis exsultans	156
Tetraedron minimum	52
CYANOPHYTA	
Aphanocapsa delicatissima	3,125
Aphanocapsa elachista	5,157
Aphanothece nidulans	2,084
Lyngbya limnetica	1,823
Non-motile blue-greens (>1 um)	52
Oscillatoria limnetica	1,042
CHRYSOPHYTA	
Mallomonas sp.	156
EUGLENOPHYTA	
Phacus sp.	52
Trachelomonas sp.	9
PYRRHOPHYTA	
Gymnodinium sp. 1	52
CRYPTOPHYTA	
Cryptomonas erosa	1,563
Rhodomonas minuta v. *nannoplanctica*	1,719
CHLOROMONADOPHYTA	
Gonyostomum semen	9
Misc. micros, 1 flagellum	2,917

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O' the Pines Site AC (324518094300801)

Phytoplankton Analyses October 1999 to September 2000

Date	08/30/00
Time	0940
TOTAL CELLS/mL	160,688
NUMBER OF SPECIES	40
DEPTH COLLECTED (ft.)	2.10

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Melosira cf. *distans*	37
Order Pennales	
Achnanthes minutissima	3,274
Synedra tenera	37
CHLOROPHYTA	
Actinastrum hantzschii	298
Ankistrodesmus convolutus	37
Chlamydomonas incerta	6
Chlorogonium sp.	37
Coelastrum astroideum	149
Coelastrum microporum	298
Coelastrum proboscideum	149
Cosmarium tenue	37
Crucigenia crucifera	298
Dictyosphaerium pulchellum	595
Lagerheimia quadriseta	74
Monoraphidium capricornutum	37
Oocystis lacustris	37
Scenedesmus bijuga	372
Scenedesmus quadricauda	223
Teilingia granulata	37
CYANOPHYTA	
Anabaena flos-aquae	1,265
Anabaena sp.	335
Aphanizomenon gracile	595
Aphanizomenon sp.	1,897
Aphanocapsa delicatissima	75,857
Aphanocapsa elachista	11,329
Chroococcus minimus	595
Cylindrospermopsis philippinensis	17,114
Dactylococcopsis irregularis	3,237
Lyngbya lagerheimii f. *minor*	447
Lyngbya limnetica	38,098
Non-motile blue-greens (>1 um)	744
Oscillatoria amphibia	744
Oscillatoria limnetica	1,116
CHRYSOPHYTA	
Erkenia subaequiciliata	37
Non-motile Chrysophytes	149
EUGLENOPHYTA	
Trachelomonas volvocina	37
PYRRHOPHYTA	
Gymnodinium sp. 2	37
Gymnodinium sp. 3	37
Peridinium umbonatum	149
Misc. microflagellate	837

07345900 LAKE O' PINES NEAR JEFFERSON, TX--Continued

Lake O' the Pines Site FC (325100094420301)

Phytoplankton Analyses October 1999 to September 2000

Date	08/30/00
Time	1335
TOTAL CELLS/mL	152,399
NUMBER OF SPECIES	51
DEPTH COLLECTED (ft.)	0.85

Organisms	Cells/mL
BACILLARIOPHYTA	
Order Centrales	
Cyclotella sp. 1	1,563
Melosira cf. *distans*	417
Melosira granulata	260
Order Pennales	
Achnanthes minutissima	313
Anomoeoneis vitrea	52
Fragilaria pinnata	208
Nitzschia palea	625
Nitzschia pumila	313
Synedra tenera	52
CHLOROPHYTA	
Ankistrodesmus convolutus	521
Ankistrodesmus falcatus	208
Chlorogonium sp.	104
Gonium sp.	35
Kirchneriella subsolitaria	417
Lagerheimia quadriseta	52
Monoraphidium capricornutum	156
Non-motile Chlorococcales-spherical	208
Oocystis parva	521
Pandorina morum	351
Phacotus sp.	104
Pyramichlamys dissecta	52
Scenedesmus abundans	208
Scenedesmus bijuga	521
Scenedesmus dimorphus	35
Scenedesmus serratus	417
Sphaerocystis schroeteri	193
Tetraedron muticum	52
Treubaria schmidlei	52
Treubaria setigerum	52
Ulothrix sp.	52
CYANOPHYTA	
Anabaena flos-aquae	521
Anabaenopsis circularis	833
Aphanizomenon gracile	208
Aphanocapsa delicatissima	120,000
Aphanocapsa elachista	5,000
Aphanocapsa koordersi	521
Chroococcus minimus	3,125
Cylindrospermopsis philippinensis	292
Dactylococcopsis irregularis	260
Lyngbya limnetica	2,292
Merismopedia punctata	417
Merismopedia tenuissima	2,292
Non-motile blue-greens (>1 um)	4,219
Oscillatoria amphibia	1,250
CHRYSOPHYTA	
Chrysococcus minutus	313
Non-motile Chrysophytes	156
EUGLENOPHYTA	
Lepocinclis sp.	9
Trachelomonas volvocina	260
PYRROPHYTA	
Peridinium umbonatum	52
CRYPTOPHYTA	
Cryptomonas erosa	833
Misc. microflagellate	1,432

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07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX

LOCATION.--Lat 32°44'58", long 94°29'55", Marion County, Hydrologic Unit 11140306, on left bank 950 ft downstream from Ferrell's Bridge Dam, 7.6 mi upstream from French Creek, and 8.5 mi west of Jefferson.

DRAINAGE AREA.--850 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Aug 1924 to Dec 1959, published as "Cypress Creek near Jefferson", Oct 1979 to current year. Records of stage and discharge for the period Oct 1959 to Sep 1979 published by the U.S. Army Corps of Engineers, New Orleans District.

GAGE.--Water-stage recorder. Datum of gage is 180.00 ft above sea level (U.S. Army Corps of Engineers benchmark). Prior to Nov 2, 1933, staff gage, and Nov 2, 1933, to Dec 8, 1955, water-stage recorder, at site about 950 ft upstream at datum 3.70 ft higher. After Dec 9, 1955, at site about 550 ft downstream or at present site at datum 180.00 ft. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Aug 1957, flow completely regulated by Lake O' the Pines (station 07345900, conservation pool storage 238,933 acre-ft), 950 ft upstream. No known diversions. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--33 years (water years 1925-57), prior to completion of Ferrell's Bridge Dam, 660 ft^3s (478,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION, (WATER YEARS, 1925-57).--Maximum discharge, 57,100 ft^3s Apr 1, 1945 (gage height, 28.78. ft, site and datum then in use), from rating curve extended above 29,000 ft^3s; no flow at times.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	36	36	26	40	40	500	156	1930	1240	81	74
2	85	36	37	26	28	32	525	156	1920	1130	80	74
3	87	37	38	35	27	32	808	156	1910	1090	80	74
4	88	37	39	29	27	32	1100	308	1920	1080	80	74
5	89	38	38	34	27	32	1120	283	1920	1400	80	74
6	86	39	37	51	27	32	1110	185	1910	1760	79	73
7	86	38	36	48	27	31	1110	165	1900	1810	79	73
8	89	37	36	38	27	31	1100	159	1900	1820	79	73
9	62	38	37	35	27	31	1090	199	1740	1820	78	73
10	62	38	36	33	27	32	1090	374	1260	1540	78	73
11	61	39	37	33	27	34	1090	763	1150	1160	78	73
12	58	38	64	33	27	32	1130	1070	1010	873	78	74
13	54	39	59	31	27	31	1140	1150	635	463	78	75
14	49	37	47	32	26	31	969	1160	552	178	77	74
15	36	36	36	47	40	31	594	1150	537	63	77	74
16	34	34	35	52	43	31	521	1140	419	59	77	74
17	34	35	33	52	35	31	503	1020	265	58	77	74
18	34	36	32	43	26	32	440	615	376	57	77	73
19	33	38	43	32	26	31	251	580	714	64	76	73
20	32	38	43	32	26	31	243	618	1190	86	76	73
21	33	38	31	32	27	31	244	585	1720	86	76	72
22	34	39	34	33	27	32	242	808	1820	86	76	72
23	34	39	29	30	27	32	242	1100	2110	85	76	72
24	34	39	27	34	27	31	240	1470	2400	84	76	73
25	35	39	27	61	29	31	226	1880	2430	84	75	72
26	36	39	26	52	42	31	187	1940	2440	83	75	72
27	35	39	25	27	34	78	162	1960	2450	83	75	72
28	35	39	25	23	45	41	165	1960	2450	83	75	72
29	35	38	25	23	46	153	160	1950	2260	83	75	71
30	37	37	25	23	---	188	157	1940	1660	98	74	71
31	37	---	25	28	---	313	---	1940	---	93	74	---
TOTAL	1630	1130	1098	1108	891	1601	18459	28940	46898	18699	2392	2191
MEAN	52.6	37.7	35.4	35.7	30.7	51.6	615	934	1563	603	77.2	73.0
MAX	89	39	64	61	46	313	1140	1960	2450	1820	81	75
MIN	32	34	25	23	26	31	157	156	265	57	74	71
AC-FT	3230	2240	2180	2200	1770	3180	36610	57400	93020	37090	4740	4350

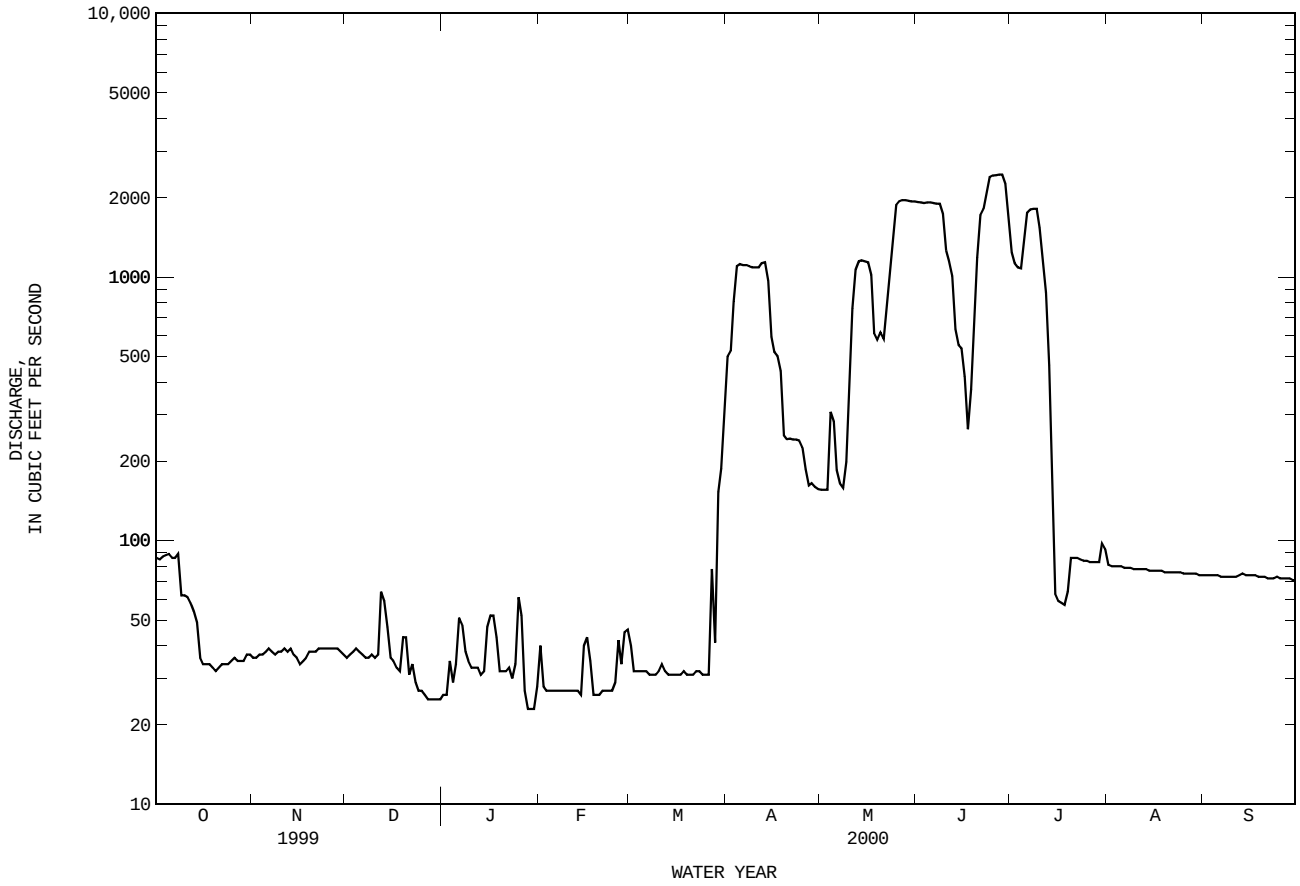
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1958 - 2000zh, BY WATER YEAR (WY)

MEAN	212	421	696	881	1249	1214	1015	812	865	409	178	101
MAX	728	2690	1946	2685	2688	2645	2669	2979	3209	3057	2349	482
(WY)	1995	1958	1958	1993	1993	1988	1990	1958	1958	1958	1958	1958
MIN	3.35	4.82	4.13	4.16	30.7	37.2	47.7	32.4	32.5	18.7	16.2	8.70
(WY)	1981	1989	1982	1981	2000	1996	1996	1992	1987	1998	1982	1980

07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1958 - 2000zh	
ANNUAL TOTAL	143007		125037			
ANNUAL MEAN	392		342		670	
HIGHEST ANNUAL MEAN					1859	1958
LOWEST ANNUAL MEAN					47.9	1996
HIGHEST DAILY MEAN	2700	Mar 24	2450	Jun 27	4500	May 20 1958
LOWEST DAILY MEAN	16	Aug 11	23	Jan 28	.00	Jul 26 1987
ANNUAL SEVEN-DAY MINIMUM	18	Aug 9	25	Dec 26	1.4	Oct 18 1979
INSTANTANEOUS PEAK FLOW			2470	Jun 28	3220	Dec 29 1991
INSTANTANEOUS PEAK STAGE			18.61	Jun 28	19.97	Dec 29 1991
ANNUAL RUNOFF (AC-FT)	283700		248000		485300	
10 PERCENT EXCEEDS	1520		1170		2480	
50 PERCENT EXCEEDS	70		72		169	
90 PERCENT EXCEEDS	29		29		23	

z Period of regulated streamflow.
h See PERIOD OF RECORD paragraph.



07346000 BIG CYPRESS CREEK NEAR JEFFERSON, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1998 to current year.
BIOCHEMICAL DATA: Oct 1998 to current year.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)	HARD-NESS TOTAL (MG/L AS CACO3) (00900)	HARD-NESS NONCARB DISSOLV FLD. AS CACO3 (MG/L) (00904)
MAR											
14...	1250	31	140	7.1	16.4	4.0	9.4	--	1.3	27	14
JUN											
07...	1645	1900	140	6.9	26.0	2.0	8.4	105	.8	27	11
AUG											
30...	0859	76	142	7.0	29.2	<.50	6.0	--	.3	29	6

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
MAR										
14...	5.1	3.5	12	1	4.2	13	24	14	<.10	5.5
JUN										
07...	5.7	3.2	12	1	3.7	16	24	12	<.10	5.1
AUG										
30...	5.7	3.6	13	1	4.5	23	18	12	.10	10

DATE	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
MAR										
14...	85	76	7	<.010	<.050	<.020	--	.34	<.050	<.010
JUN										
07...	86	75	<10	<.010	<.050	.116	.40	.52	<.050	<.010
AUG										
30...	98	81	<10	<.010	<.050	.091	.41	.51	<.050	<.010

DATE	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
MAR										
14...	6.7	1.5	<1.0	<2	52	<1.0	<1.0	<1.0	<1.0	<1.0
JUN										
07...	7.6	7.9	<1.0	<2	49	<1.0	<1.0	<.80	<1.0	2.9
AUG										
30...	8.4	3.5	<1.0	E2	54	<1.0	<1.0	<.80	<1.0	<1.0

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
MAR										
14...	10	1.8	33	<.2	<1.0	<1.0	--	<1.0	3.7	<1.0
JUN										
07...	14	<1.0	135	<.2	<1.0	1.7	<2	<1.0	14	<1.0
AUG										
30...	41	<1.0	529	<.2	<1.0	<1.0	<2	<1.0	1.3	<1.0

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07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX

LOCATION.--Lat 32°46′40", long 94°21′26", Marion County, Hydrologic Unit 11140306 near center of channel at downstream side of bridge on U.S. Highway 59, 1.1 mi north of Jefferson, 2.0 mi upstream from Texas and Pacific Railway Co. bridge, and 5.2 mi upstream from mouth.

DRAINAGE AREA.--365 mi^2.

PERIOD OF RECORD.--May 1938 to Sep 1955 (daily gage heights) and Nov 1956 to Aug 1968 (daily gage heights and discharge measurements) published by U.S. Army Corps of Engineers as "Black Cypress Creek at Jefferson", Sep 1964 to Aug 1968 (low-flow partial-record), Sep 1968 to current year (daily mean discharge).
Water-quality records.--Chemical data: Oct 1967 to Sep 1981.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 171.47 ft above sea level (U.S. Army Corps of Engineers benchmark). Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1938, 22.42 ft Apr 29, 1958, from records by U.S. Army Corps of Engineers.

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)
May 23	0545	4,280	16.21	No other peak greater than base discharge.			

REVISIONS.--The minimum daily discharge for water year 1999 has been revised to .01 ft^3/s on Sep 29, 30. Revised daily discharges, in cubic feet per second, for Jul 30 to Sep 30, are given below.

DAILY MEAN VALUES WATER YEAR 1999

DAY	JUL	AUG	SEP	DAY	JUL	AUG	SEP
1		13	1.2	16		.91	1.5
2		11	1.5	17		.72	.92
3		8.8	1.5	18		.62	.57
4		7.4	1.5	19		.80	.36
5		6.6	1.3	20		2.3	.25
6		6.1	1.3	21		1.7	.22
7		5.3	1.4	22		1.2	.19
8		4.2	1.4	23		.71	.12
9		3.7	1.2	24		.45	.07
10		3.2	1.5	25		.26	.05
11		2.9	1.5	26		.14	.04
12		2.3	1.2	27		.19	.03
13		1.9	1.6	28		.29	.02
14		1.7	2.4	30	19	.18	.01
15		1.3	1.9	31	16	.85	---

MONTH	TOTAL	MEAN	MAX	MIN	AC-FT	CFSM	IN
Jul 1999	2974	95.9	203	16	5900	180	53
Aug 1999	90.94	2.93	13	.14	180	.01	.01
Sep 1999	26.76	.89	2.4	.01	53	.00	.00
Wtr Yr 1999	122054.70	334	2800	.01	242100	.92	12.44

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	20	43	65	170	161	669	163	175	376	1.3	.00
2	.00	18	43	65	193	186	720	173	136	275	.76	.00
3	.00	14	47	66	203	219	788	172	111	218	.49	.00
4	.00	13	51	64	205	278	794	419	98	228	.34	.00
5	.00	14	56	62	199	309	801	918	131	213	.22	.00
6	.00	15	62	59	186	287	863	900	183	198	.13	.00
7	.00	14	59	58	169	249	861	1250	236	179	.10	.00
8	1.8	15	61	79	153	217	776	3090	305	159	.11	.00
9	28	17	59	116	139	195	681	3290	356	138	.10	.00
10	40	19	53	111	128	182	593	2310	348	118	.08	.00
11	28	21	43	111	120	205	505	1590	317	100	.08	.00
12	21	22	53	129	112	200	479	1150	285	84	.09	.00
13	13	24	87	138	105	187	459	942	221	71	.07	.00
14	8.8	25	78	130	99	200	406	727	171	59	.04	.00
15	9.6	26	72	115	93	238	351	544	147	49	.02	.00
16	9.6	26	133	103	91	272	328	379	142	41	.01	.00
17	7.0	26	203	94	89	296	317	263	141	35	.01	.00
18	4.6	28	120	87	86	316	305	188	151	29	.00	.00
19	4.4	31	97	83	90	321	291	204	190	25	.00	.00
20	3.9	33	93	80	87	315	271	449	174	21	.00	.00
21	3.8	34	95	77	82	286	240	850	150	18	.00	.00
22	2.8	37	97	76	79	256	206	2910	183	15	.00	.00
23	2.1	46	90	76	77	252	181	4110	245	13	.00	.00
24	2.3	47	83	72	76	251	163	3090	332	10	.00	.00
25	3.0	48	77	68	79	248	155	2000	443	7.8	.00	.00
26	3.5	43	72	64	152	256	132	1370	493	5.0	.00	16
27	4.6	45	70	67	174	294	134	987	472	4.2	.00	22
28	5.3	51	68	90	138	287	174	728	474	3.2	.00	11
29	6.4	45	66	101	134	394	168	527	493	2.6	.00	3.4
30	8.2	43	65	106	---	536	157	365	465	2.9	.00	32
31	13	---	64	135	---	633	---	246	---	2.0	.00	---

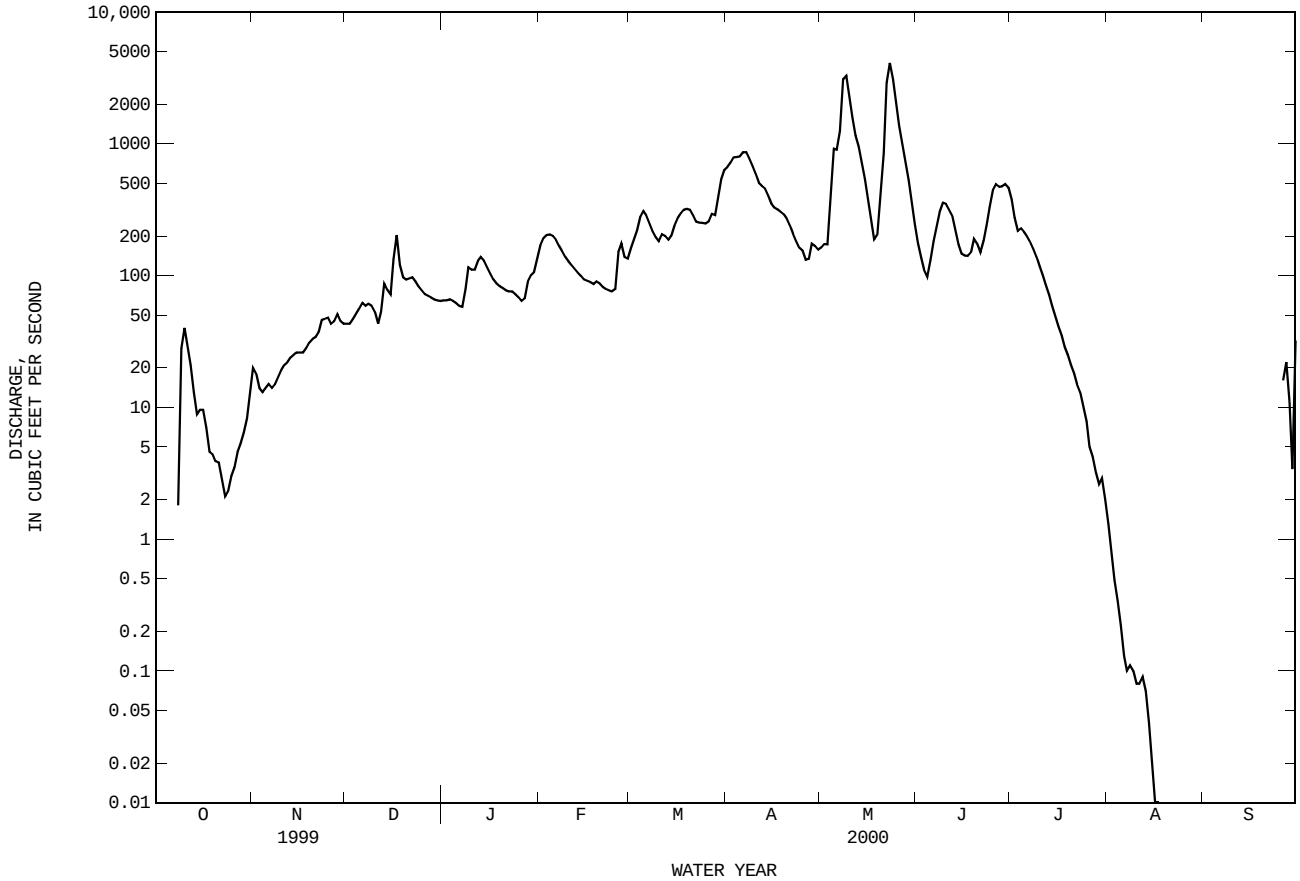
07346045 BLACK CYPRESS BAYOU AT JEFFERSON, TX--Continued

TOTAL	234.70	860	2360	2747	3708	8526	12968	36304	7768	2699.7	3.95	84.40
MEAN	7.57	28.7	76.1	88.6	128	275	432	1171	259	87.1	.13	2.81
MAX	40	51	203	138	205	633	863	4110	493	376	1.3	32
MIN	.00	13	43	58	76	161	132	163	98	2.0	.00	.00
AC-FT	466	1710	4680	5450	7350	16910	25720	72010	15410	5350	7.8	167
CFSM	.02	.08	.21	.24	.35	.75	1.18	3.21	.71	.24	.00	.01
IN.	.02	.09	.24	.28	.38	.87	1.32	3.70	.79	.28	.00	.01

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

MEAN	91.8	257	532	518	635	694	584	485	286	91.6	41.6	56.2
MAX	415	1344	2157	1508	1612	1606	2006	1934	1321	576	623	581
(WY)	1974	1975	1988	1991	1975	1990	1973	1991	1974	1992	1979	1974
MIN	.009	13.6	62.1	88.6	69.6	108	109	50.8	1.86	.000	.060	.000
(WY)	1979	1984	1990	2000	1996	1996	1971	1984	1998	1998	1969	1969

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR			FOR 2000 WATER YEAR			WATER YEARS 1969 - 2000		
ANNUAL TOTAL	83459.30			78263.75					
ANNUAL MEAN	229			214			355		
HIGHEST ANNUAL MEAN							647		1991
LOWEST ANNUAL MEAN							78.3		1971
HIGHEST DAILY MEAN	2800	Feb	2	4110	May	23	10700	Dec	28 1987
LOWEST DAILY MEAN	.00	Oct	1	.00	Oct	1	.00	Aug	10 1969
ANNUAL SEVEN-DAY MINIMUM	.00	Oct	1	.00	Oct	1	.00	Aug	10 1969
INSTANTANEOUS PEAK FLOW				4280	May	23	11600	Dec	28 1987
INSTANTANEOUS PEAK STAGE				16.21	May	23	19.34	Dec	28 1987
ANNUAL RUNOFF (AC-FT)	165500			155200			257000		
ANNUAL RUNOFF (CFSM)	.63			.59			.97		
ANNUAL RUNOFF (INCHES)	8.51			7.98			13.20		
10 PERCENT EXCEEDS	595			476			870		
50 PERCENT EXCEEDS	115			82			164		
90 PERCENT EXCEEDS	4.7			.00			1.7		



07346050 LITTLE CYPRESS CREEK NEAR ORE CITY, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 32°40′21", long 94°45′03", Upshur County, Hydrologic Unit 11140307, on right bank at downstream side of bridge on U.S. Highway 259, 4.0 mi downstream from Clear Creek, 9.0 mi south of Ore City, and 12.0 mi north of Longview.

DRAINAGE AREA.--383 mi^2.

PERIOD OF RECORD.--Jan 1963 to Sep 1999 (daily mean discharge). Oct 1999 to Sep 2000 (peaks above base discharge).

GAGE.--Water-stage recorder. Datum of gage is 232.67 ft above sea level. Satellite telemeter at station.

REMARKS.--Record fair. Peak discharges less than 2,000 ft^3/s are not published. Beaver dam activity during the water year 400 ft downstream of gage. No known regulation or diversions. During the year, the city of Gilmer discharged a small amount of wastewater effluent into a tributary above this station. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE.--36 years (water years 1964-99), 290 ft^3/s (210,400 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,500 ft^3/s, Apr 24, 1966, gage height, 20.20 ft; no flow for many days most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1902 occurred in Mar 1945; maximum stage since 1945, that of Apr 24, 1966. The flood in Apr 1958 reached a stage of 19.4 ft, or 1.3 ft lower than the flood of Mar 1945 at a point 6 mi upstream, from information by local resident.

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)

No peak greater than base discharge.

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07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX

LOCATION.--Lat 32°42′46", long 94°20′45", Harrison County, Hydrologic Unit 11140307, at downstream side of upstream bridge on U.S. Highway 59, 0.3 mi downstream from Texas and Pacific Railway Co. bridge, 3.3 mi downstream from Grays Creek, 3.5 mi south of Jefferson, and 6.8 mi upstream from mouth.

DRAINAGE AREA.--675 mi^2.

PERIOD OF RECORD.--Jun 1946 to current year.
Water-quality records.--Chemical data: Jun 1964 to Oct 1997. Biological data: Jun 1964 to Oct 1997. Pesticide data: Jan 1968 to Jun 1981. Specific conductance: Oct 1967 to Sep 1990. Water temperature: Oct 1967 to Sep 1990.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 174.60 ft above sea level. Prior to Sep 19, 1947, nonrecording gage at upstream side of bridge at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Wastewater effluent is discharged into tributaries that enter Little Cypress Creek above this station. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1944 reached a stage of 21.1 ft.

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)
May 5	1145	2,200	11.23	May 9	1215	2,210	11.24

REVISIONS.--The minimum daily discharge for water year 1999 has been revised to .00 ft^3/s on many days. Revised daily discharges, in cubic feet per second, for Jun 24 to Sep 30, are given below.

DAILY MEAN VALUES WATER YEAR 1999

DAY	JUN	JUL	AUG	SEP	DAY	JUN	JUL	AUG	SEP
1		811	8.2	771	16		166	.09	.00
2		884	6.6	1100	17		121	.07	.00
3		887	5.2	1450	18		99	.06	.00
4		751	4.1	1220	19		86	.06	.00
5		583	3.2	1110	20		80	.04	.00
6		387	2.5	1060	21		76	.02	.00
7		236	1.7	992	22		71	.00	.00
8		160	1.2	969	23		61	.00	.00
9		123	.86	1090	24	204	52	.00	.00
10		114	.61	1270	25	433	40	.00	.00
11		139	.47	1270	26	586	30	.00	.00
12		203	.30	1140	27	610	25	.00	.00
13		263	.32	1010	28	577	19	.00	.00
14		283	.23	904	29	601	14	.00	.00
15		236	.14	814	30	696	11	.00	.00
					31	---	9.4	.00	---

MONTH	TOTAL	MEAN	MAX	MIN	AC-FT	CFSM	IN
Jun 1999	15138	505	751	192	30030	.75	.83
Jul 1999	6990.4	225	884	9.4	13870	.33	.39
Aug 1999	35.97	1.16	8.2	.00	71	.00	.00
Sep 1999	0.00	.000	.00	.00	.00	.00	.00
Wtr Yr 1999	231042.37	633	4120	.00	45830	.94	12.73

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	22	2.1	174	376	960	439	747	501	.00	.00
2	.00	.00	42	5.0	179	277	945	411	552	667	.00	.00
3	.00	.00	73	9.9	177	226	1120	383	284	864	.00	.00
4	.00	.00	62	10	170	214	1400	1150	176	940	.00	.00
5	.00	.00	95	9.9	153	209	1470	2100	347	908	.00	.00
6	.00	.00	48	4.6	134	206	1420	1850	577	845	.00	.00
7	.00	.00	8.0	1.8	120	207	1360	1800	263	781	.00	.00
8	.00	.00	.17	53	109	207	1320	1990	193	734	.00	.00
9	.00	.00	21	107	100	195	1260	2090	173	764	.00	.00
10	.00	.00	71	138	96	175	1160	1930	167	863	.00	.00
11	.00	.00	77	146	93	213	1040	1570	177	905	.00	.00
12	.00	.00	90	142	88	211	1110	1260	182	850	.00	.00
13	.00	.00	136	129	84	214	1440	1100	184	747	.00	.00
14	.00	.00	181	107	83	229	1460	1000	208	585	.00	.00
15	.00	.00	198	91	81	241	1390	923	231	311	.00	.00
16	.00	.00	197	83	78	250	1280	833	215	158	.00	.00
17	.00	.00	186	77	76	253	1140	739	176	112	.00	.00
18	.00	.00	163	71	76	259	990	636	155	92	.00	.00
19	.00	.00	137	64	78	266	876	672	181	81	.00	.00
20	.00	.00	120	51	82	269	770	1110	233	71	.00	.00
21	.00	.00	107	41	80	265	673	1350	320	42	.00	.00
22	.00	.00	95	41	75	253	588	1300	424	18	.00	.00
23	.00	.00	85	40	75	248	515	1280	477	3.8	.00	.00
24	.00	.03	78	25	75	236	430	1240	420	.31	.00	.00
25	.00	1.9	72	25	80	235	377	1150	368	.00	.00	.00
26	.00	9.7	56	19	169	276	321	1080	333	.00	.00	.00
27	.00	1.4	42	26	298	458	291	1030	323	.00	.00	.00
28	.00	4.9	36	76	387	573	409	1010	335	.00	.00	.00
29	.00	12	28	111	423	981	462	1000	374	.00	.00	.00
30	.00	18	16	141	---	1560	461	963	416	.00	.00	.00
31	.00	---	6.7	161	---	1170	---	872	---	.00	.00	---

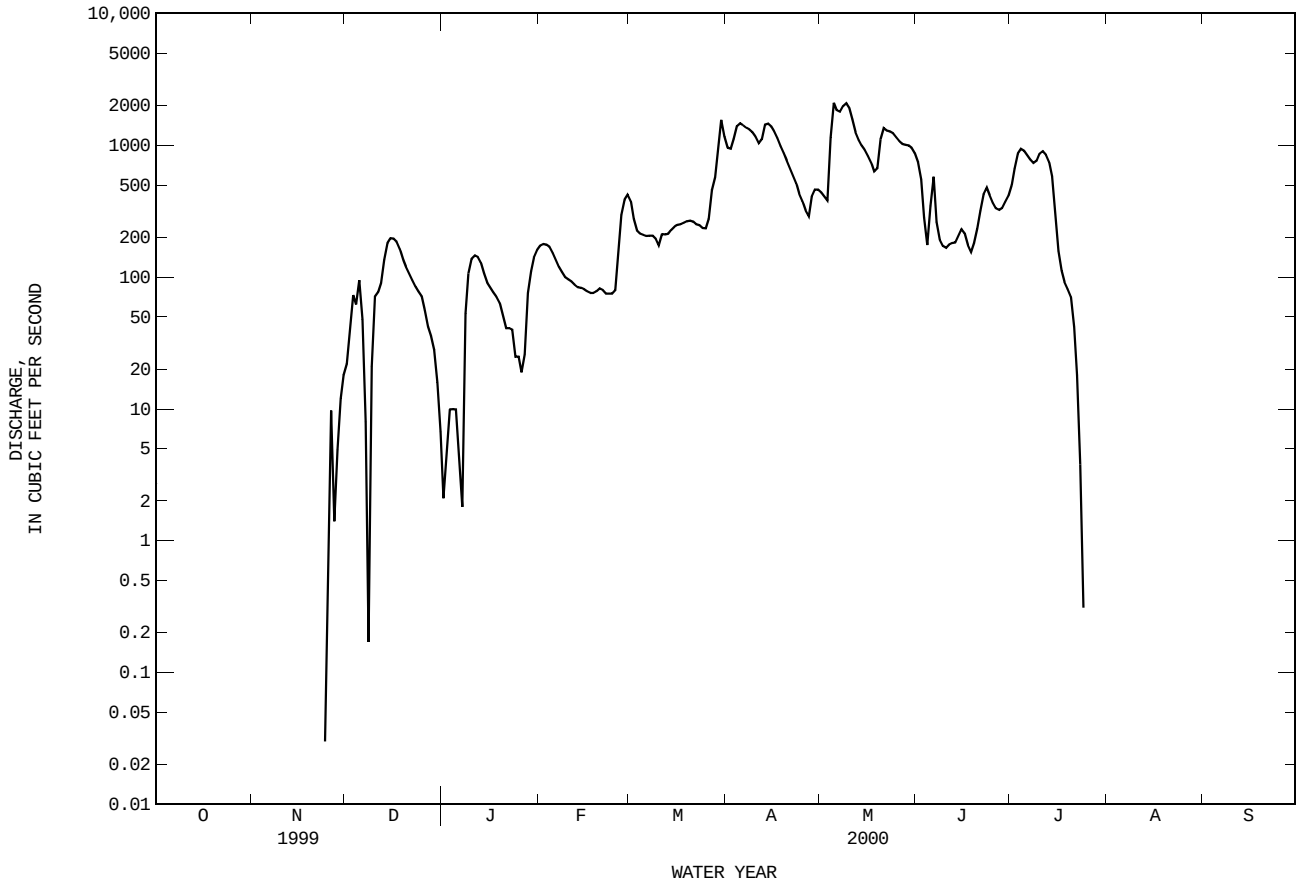
07346070 LITTLE CYPRESS CREEK NEAR JEFFERSON, TX--Continued

TOTAL	0.00	47.93	2548.87	2008.3	3893	10952	28438	36261	9211	11843.11	0.00	0.00
MEAN	.000	1.60	82.2	64.8	134	353	948	1170	307	382	.000	.000
MAX	.00	18	198	161	423	1560	1470	2100	747	940	.00	.00
MIN	.00	.00	.17	1.8	75	175	291	383	155	.00	.00	.00
AC-FT	.00	95	5060	3980	7720	21720	56410	71920	18270	23490	.00	.00
CFSM	.00	.00	.12	.10	.20	.52	1.40	1.73	.45	.57	.00	.00
IN.	.00	.00	.14	.11	.21	.60	1.57	2.00	.51	.65	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1946 - 2000, BY WATER YEAR (WY)

MEAN	124	308	648	745	927	984	998	991	446	140	46.1	99.1
MAX	927	2709	3391	2664	2853	2367	4584	4212	2525	689	667	941
(WY)	1950	1958	1961	1991	1950	1969	1966	1958	1946	1992	1979	1979
MIN	.000	.017	.53	8.33	73.1	75.7	117	61.6	4.67	.24	.000	.000
(WY)	1953	1957	1957	1957	1996	1996	1972	1971	1971	1964	1956	1952

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR			FOR 2000 WATER YEAR			WATER YEARS 1946 - 2000		
ANNUAL TOTAL	157456.00			105203.21					
ANNUAL MEAN	431			287			533		
HIGHEST ANNUAL MEAN							1260		1958
LOWEST ANNUAL MEAN							67.3		1964
HIGHEST DAILY MEAN	4120	Feb	2	2100	May	5	32700	Apr 26	1966
LOWEST DAILY MEAN	.00	Oct	1	.00	Oct	1	.00	Sep 20	1948
ANNUAL SEVEN-DAY MINIMUM	.00	Oct	1	.00	Oct	1	.00	Sep 20	1948
INSTANTANEOUS PEAK FLOW				2210	May	9	35500	Apr 26	1966
INSTANTANEOUS PEAK STAGE				11.24	May	9	22.28	Apr 26	1966
ANNUAL RUNOFF (AC-FT)	312300			208700			386100		
ANNUAL RUNOFF (CFSM)	.64			.43			.79		
ANNUAL RUNOFF (INCHES)	8.68			5.80			10.73		
10 PERCENT EXCEEDS	1080			1000			1370		
50 PERCENT EXCEEDS	274			82			181		
90 PERCENT EXCEEDS	.00			.00			1.2		



07346310 CADDO LAKE NEAR MOORINGSPORT, LA

LOCATION.--Lat 32°42′20", long 93°55′10", Hydrologic Unit 111403061, located on Big Cypress Bayou just upstream from Black Bayou in Caddo Parish approximately 19 miles northwest of Shreveport, LA. The lake extends into Harrison and Marion Counties, Texas.

DRAINAGE AREA.--2,700 mi^2.

PERIOD OF RECORD.--Oct 1999 to Sep 2000.

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

REMARKS.--The lake is formed by earthfill dam, 1,225 ft long and 100 ft concrete wall. Dam was completed on Jun 18, 1971. The high section spillway is a 1,540-foot broad-crested weir and the low section spillway is a 860-foot broad-crested weir. The outlet works consists of an Ogee weir with a crest length of 100 ft. The dam is owned by the Caddo Levee District. Conservation pool storage is 59,800 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	176.0
Spillway (high section)	170.5
Spillway (low section)	168.5
Dead storage	166.0

COOPERATION.--Area and capacity tables provided by the U.S. Army Corps of Engineers. Record of contents provided by the U.S. Army Corps of Engineers.

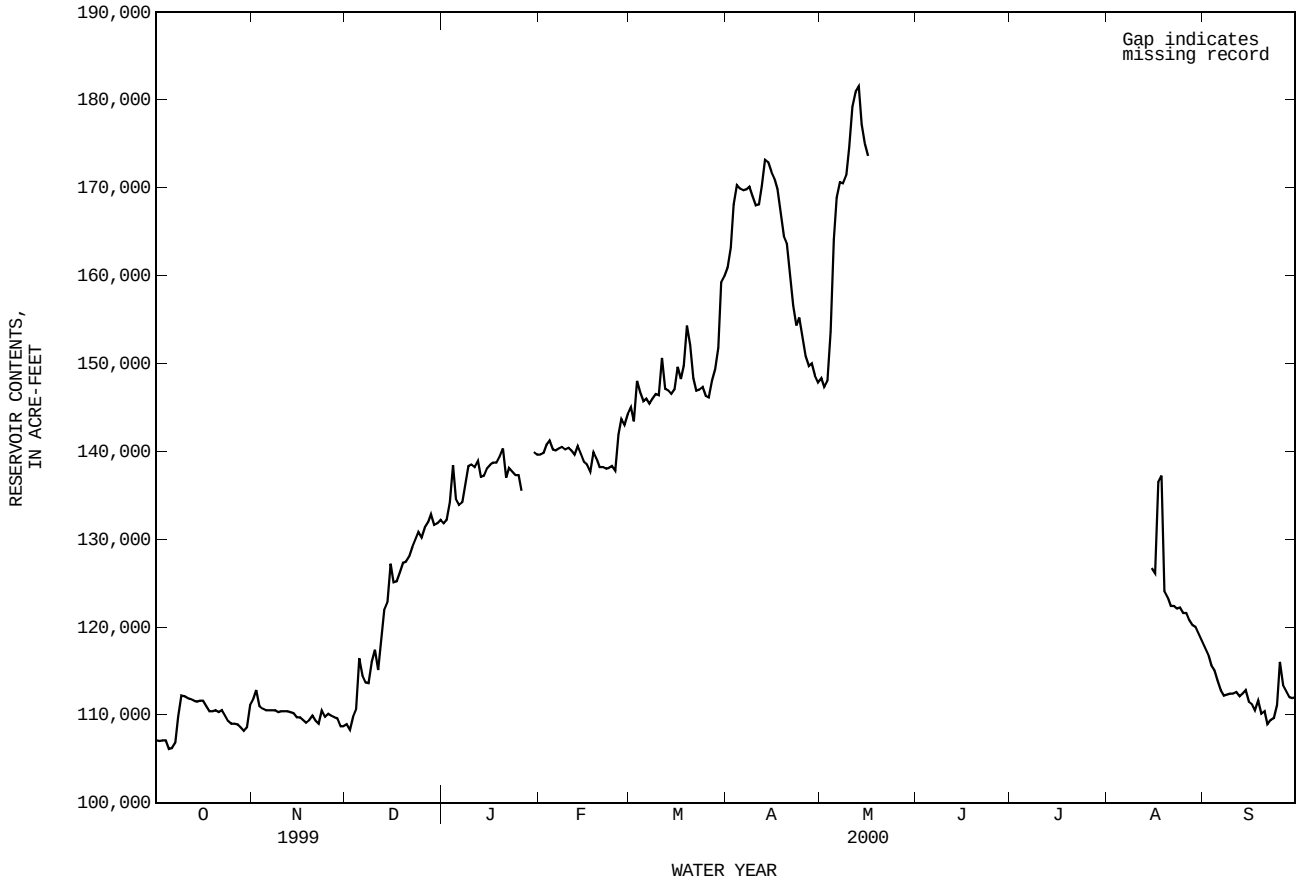
EXTREMES FOR CURRENT YEAR.--Maximum contents, 653,600 acre-ft, Aug 17, 18, elevation, 181.28 ft; minimum contents, 101,200 acre-ft, Sep 18, elevation, 167.41 ft.

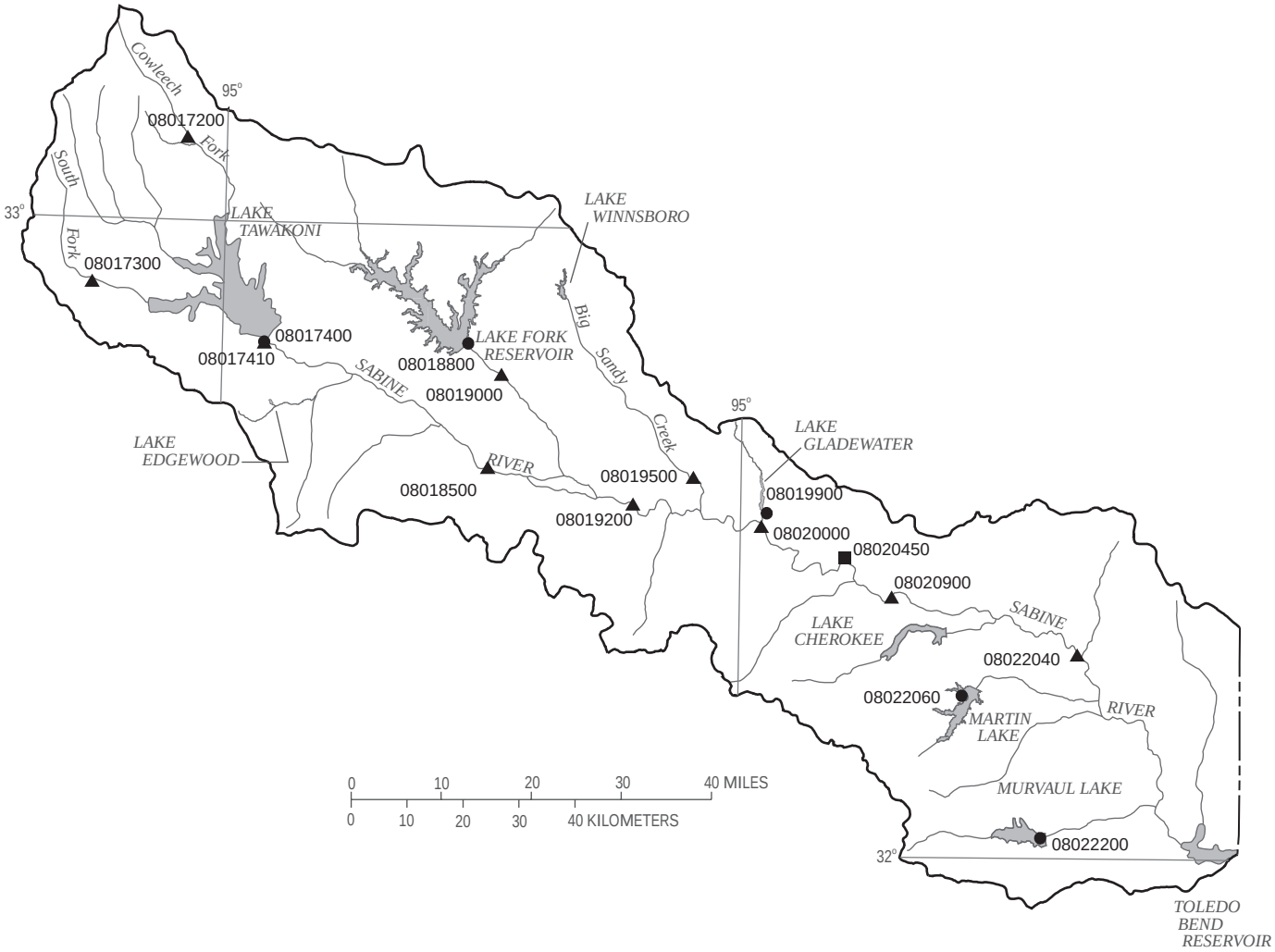
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	107100	111700	108900	131800	139600	145000	160900	148300	---	---	---	117700
2	107000	112800	108300	132200	139800	143400	163200	147300	---	---	---	116900
3	107100	111000	109800	134200	140700	148000	168100	148000	---	---	---	115600
4	107100	110700	110600	138400	141200	146700	170300	153600	---	---	---	115100
5	106100	110500	116400	134600	140200	145700	169900	164100	---	---	---	113900
6	106200	110500	114500	133900	140100	146000	169700	168900	---	---	---	112800
7	106800	110500	113700	134200	140300	145400	169800	170600	---	---	---	112200
8	109800	110500	113600	136400	140500	146000	170100	170500	---	---	---	112300
9	112200	110300	116000	138300	140200	146500	169000	171400	---	---	---	112400
10	112100	110400	117400	138500	140400	146400	168000	174600	---	---	---	112400
11	111900	110400	115100	138200	140100	150600	168100	179200	---	---	---	112600
12	111800	110400	118300	138900	139600	147100	170200	180900	---	---	---	112100
13	111600	110300	121900	137100	140600	146900	173200	181500	---	---	---	112400
14	111500	110200	122800	137200	139700	146500	172900	177200	---	---	---	112800
15	111600	109700	127200	138100	138800	147000	171800	175000	---	---	126700	111500
16	111600	109700	125100	138500	138500	149600	171100	173600	---	---	126100	111200
17	111000	109400	125200	138700	137700	148200	169800	---	---	---	136500	110500
18	110400	109100	126200	138700	139900	149700	167000	---	---	---	137200	111600
19	110400	109400	127300	139400	139200	154300	164500	---	---	---	124100	110100
20	110500	109900	127400	140300	138200	152100	163700	---	---	---	123400	110400
21	110300	109300	128000	137000	138200	148300	160400	---	---	---	122400	108900
22	110500	109000	129100	138100	138000	146900	156600	---	---	---	122400	109400
23	109900	110500	130000	137700	138100	147000	154300	---	---	---	122100	109600
24	109300	109800	130800	137300	138300	147300	155200	---	---	---	122200	111100
25	109000	110100	130200	137300	137800	146300	153000	---	---	---	121600	116000
26	109000	109900	131300	135500	141900	146100	150800	---	---	---	121600	113400
27	108900	109700	131900	---	143700	148000	149700	---	---	---	120800	112700
28	108600	109600	132800	---	143000	149300	150000	---	---	---	120200	112000
29	108200	108700	131600	---	144200	151800	148600	---	---	---	120000	111900
30	108600	108700	131800	139900	---	159200	147800	---	---	---	119200	112000
31	111100	---	132200	139600	---	159900	---	---	---	---	118500	---
MEAN	109600	110100	122800	---	139900	148400	163300	---	---	---	---	112400
MAX	112200	112800	132800	---	144200	159900	173200	---	---	---	---	117700
MIN	106100	108700	108300	---	137700	143400	147800	---	---	---	---	108900
(+)	167.82	167.72	168.62	168.90	169.07	169.61	169.19	---	---	---	168.11	167.85
(@)	---	-2400	+23500	+7400	+4600	+15700	-12100	---	---	---	---	-6500

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

07346310 CADDO LAKE NEAR MOORINGSPORT, LA--Continued





EXPLANATION

08019200	▲	**Surface-water continuous station and number**
08022040	△	**Surface-water continuous/water-quality station and number**
08017410	●	**Reservoir station and number**
08020450	■	**Surface-water partial record/stage only station and number**

Figure 8.-- Map showing location of gaging stations in the first section of the Sabine River Basin

08017200 Cowleech Fork Sabine River at Greenville, TX 328
08017300 South Fork Sabine River near Quinlan, TX 330
08017400 Lake Tawakoni near Wills Point, TX 332
08017410 Sabine River near Wills Point, TX 334
08018500 Sabine River near Mineola, TX 336
08018800 Lake Fork Reservoir near Quitman, TX 338
08019000 Lake Fork Creek near Quitman, TX 340
08019200 Sabine River near Hawkins, TX 342
08019500 Big Sandy Creek near Big Sandy, TX 344
08019900 Lake Gladewater near Gladewater, TX 346
08020000 Sabine River near Gladewater, TX 350
08020450 Sabine River above Longview, TX 352
08020900 Sabine River below Longview, TX 354
08022040 Sabine River near Beckville, TX 356
08022060 Martin Lake near Tatum, TX 358
08022200 Murval Lake near Gary, TX 360

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX

LOCATION.--Lat 33°07′58", long 96°04′36", Hunt County, Hydrologic Unit 12010001, on left bank 103 ft downstream from centerline of downstream bridge on Interstate Highway 30, 0.3 mi downstream from Horse Creek, 0.9 mi downstream from Louisiana and Arkansas Railroad Co. bridge, 1.8 mi east of Greenville, and at mile 558.3.

DRAINAGE AREA.--77.7 mi^2.

PERIOD OF RECORD.--Feb 1959 to current year. Prior to Oct 1963, published as "Sabine River at Greenville".

REVISED RECORDS.--WSP 1732: Drainage area. WSP 2122: 1960, 1963-65.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 485.07 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation. The city of Greenville diverts water from city lakes upstream from gage and from Lake Tawakoni (station 08017400, conservation pool storage 888,130 acre-ft) for municipal use. Wastewater effluent was returned to a tributary downstream from gage. Extreme low flows are largely sustained by return water from a water treatment plant upstream. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1895, 22 ft in May 1935, from information by local resident and city engineer of Greenville. Flood of Jul 3, 1913, reached a stage of 20 ft, from information by local resident.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 4	1830	6,610	17.10	Jun 22	1100	3,240	16.16

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

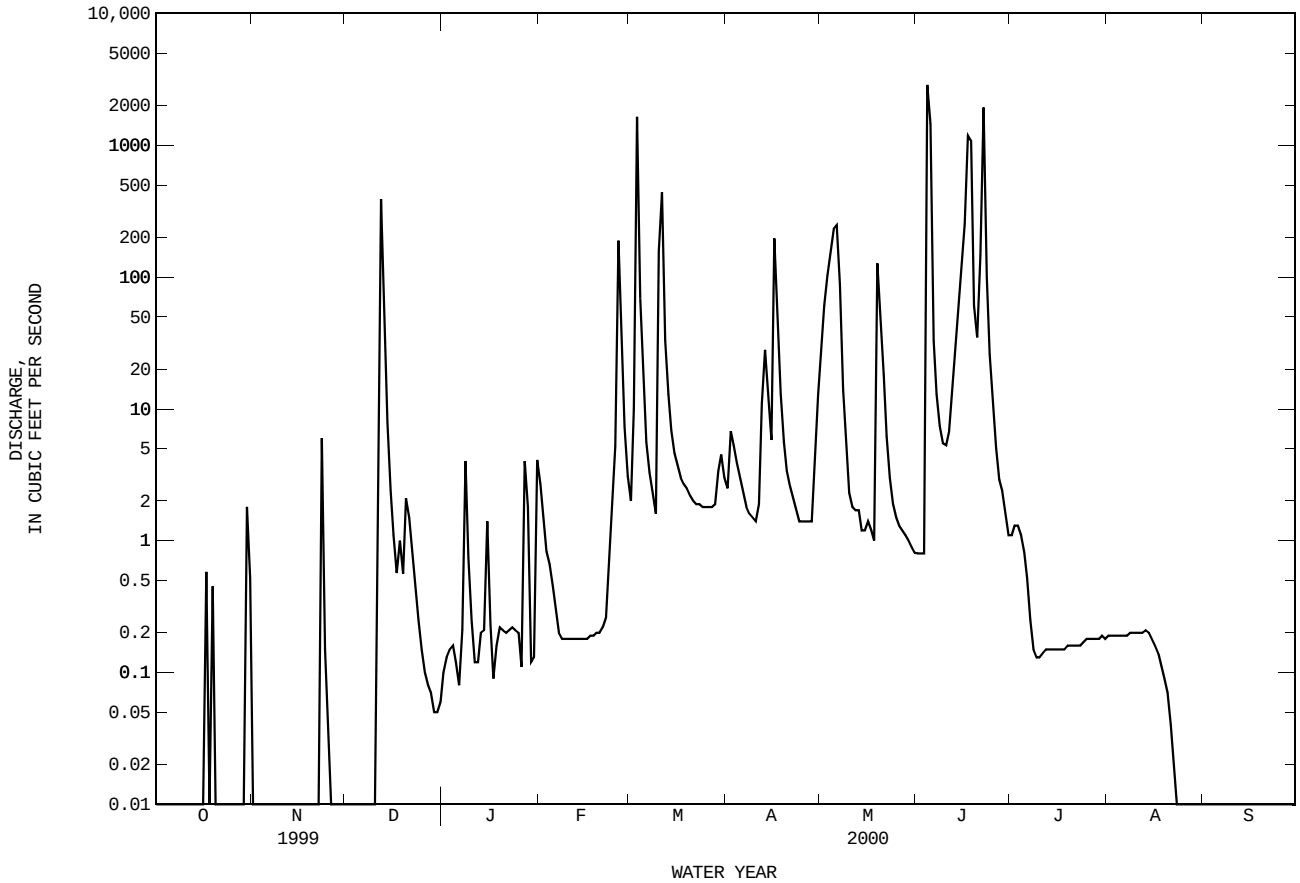
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.01	.00	.10	2.7	2.0	2.5	27	.80	1.1	.19	.00
2	.00	.00	.00	.13	1.5	10	6.8	61	.80	1.3	.19	.00
3	.00	.00	.00	.15	.83	1640	5.3	103	.80	1.3	.19	.00
4	.00	.00	.00	.16	.66	69	3.9	159	2880	1.1	.19	.00
5	.00	.00	.00	.12	.45	16	3.0	234	1460	.82	.19	.00
6	.00	.00	.00	.08	.29	5.6	2.3	249	33	.52	.19	.00
7	.00	.00	.00	.21	.20	3.3	1.8	88	13	.25	.19	.00
8	.00	.00	.00	4.0	.18	2.3	1.6	14	7.4	.15	.20	.00
9	.00	.00	.00	.74	.18	1.6	1.5	4.9	5.5	.13	.20	.00
10	.00	.00	.00	.25	.18	157	1.4	2.3	5.3	.13	.20	.00
11	.00	.00	4.1	.12	.18	439	1.9	1.8	6.7	.14	.20	.00
12	.00	.00	390	.12	.18	33	11	1.7	13	.15	.20	.00
13	.00	.00	81	.20	.18	13	28	1.7	26	.15	.21	.00
14	.00	.00	7.9	.21	.18	6.9	13	1.2	54	.15	.20	.00
15	.00	.00	2.4	1.4	.18	4.6	5.8	1.2	104	.15	.18	.00
16	.01	.00	1.1	.23	.18	3.7	196	1.4	253	.15	.16	.00
17	.58	.00	.57	.09	.19	3.0	53	1.2	1190	.15	.14	.00
18	.00	.00	1.0	.16	.19	2.7	13	1.0	1080	.15	.11	.00
19	.45	.00	.56	.22	.20	2.5	5.6	127	61	.16	.09	.00
20	.00	.00	2.1	.21	.20	2.2	3.4	42	35	.16	.07	.00
21	.00	.00	1.5	.20	.22	2.0	2.6	18	145	.16	.04	.00
22	.00	.00	.82	.21	.26	1.9	2.1	6.2	1930	.16	.02	.00
23	.00	6.0	.45	.22	.65	1.9	1.7	3.0	100	.16	.01	.00
24	.00	.15	.25	.21	1.8	1.8	1.4	1.9	26	.17	.00	.00
25	.00	.03	.15	.20	5.2	1.8	1.4	1.5	11	.18	.00	.00
26	.00	.01	.10	.11	189	1.8	1.4	1.3	5.1	.18	.00	.00
27	.00	.01	.08	4.0	36	1.8	1.4	1.2	2.9	.18	.00	.00
28	.00	.00	.07	1.8	7.3	1.9	1.4	1.1	2.4	.18	.00	.00
29	.00	.00	.05	.12	3.1	3.4	3.8	1.0	1.6	.18	.00	.00
30	1.8	.00	.05	.13	---	4.5	13	.90	1.1	.19	.00	.00
31	.52	---	.06	4.1	---	3.0	---	.81	---	.18	.00	---
TOTAL	3.36	6.21	494.31	20.20	252.56	2443.2	391.0	1159.31	9454.40	10.23	3.56	0.00
MEAN	.11	.21	15.9	.65	8.71	78.8	13.0	37.4	315	.33	.11	.000
MAX	1.8	6.0	390	4.1	189	1640	196	249	2880	1.3	.21	.00
MIN	.00	.00	.00	.08	.18	1.6	1.4	.81	.80	.13	.00	.00
AC-FT	6.7	12	980	40	501	4850	776	2300	18750	20	7.1	.00
CFSM	.00	.00	.21	.01	.11	1.01	.17	.48	4.06	.00	.00	.00
IN.	.00	.00	.24	.01	.12	1.17	.19	.56	4.53	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2000, BY WATER YEAR (WY)

MEAN	55.6	57.7	102	62.6	86.1	93.0	93.9	135	66.5	21.9	5.51	27.5
MAX	354	433	573	403	444	390	431	540	353	264	95.2	258
(WY)	1972	1997	1972	1998	1997	1984	1966	1982	1981	1989	1977	1974
MIN	.001	.025	.11	.24	.22	.48	.85	.33	.032	.001	.000	.000
(WY)	1996	1996	1990	1986	1996	1996	1971	1988	1988	1998	1985	1999

08017200 COWLEECH FORK SABINE RIVER AT GREENVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1959 - 2000	
ANNUAL TOTAL	8227.00		14238.34			
ANNUAL MEAN	22.5		38.9		67.9	
HIGHEST ANNUAL MEAN					146	1995
LOWEST ANNUAL MEAN					2.85	1996
HIGHEST DAILY MEAN	1570	May 31	2880	Jun 4	9730	May 13 1982
LOWEST DAILY MEAN	.00	Jul 2	.00	Oct 1	.00	Aug 4 1964
ANNUAL SEVEN-DAY MINIMUM	.00	Jul 2	.00	Oct 1	.00	Aug 4 1972
INSTANTANEOUS PEAK FLOW			6610	Jun 4	15300	May 13 1982
INSTANTANEOUS PEAK STAGE			17.10	Jun 4	18.47	May 13 1982
ANNUAL RUNOFF (AC-FT)	16320		28240		49210	
ANNUAL RUNOFF (CFSM)	.29		.50		.87	
ANNUAL RUNOFF (INCHES)	3.94		6.82		11.88	
10 PERCENT EXCEEDS	19		20		56	
50 PERCENT EXCEEDS	.58		.20		1.4	
90 PERCENT EXCEEDS	.00		.00		.01	



08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX

LOCATION.--Lat 32°53′52", long 96°15′11", Hunt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 1565, 2.4 mi upstream from Dry Creek, 6.2 mi upstream from Bearpen Creek, 7 mi southwest of Quinlan, and 25 mi upstream from mouth.

DRAINAGE AREA.--78.7 mi^2.

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

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 461.40 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. No known regulation or diversions. Wastewater effluent is discharged at various periods during the water year by Royse City located approximately 10 mi above this station. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1890, 21 ft Jul 29, 1902, from information by local resident. Flood of Apr 27, 1957, reached a stage of 17.76 ft, from floodmarks.

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

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Jun 15	1545	10,700	17.39	Jun 22	0500	4,210	16.54

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

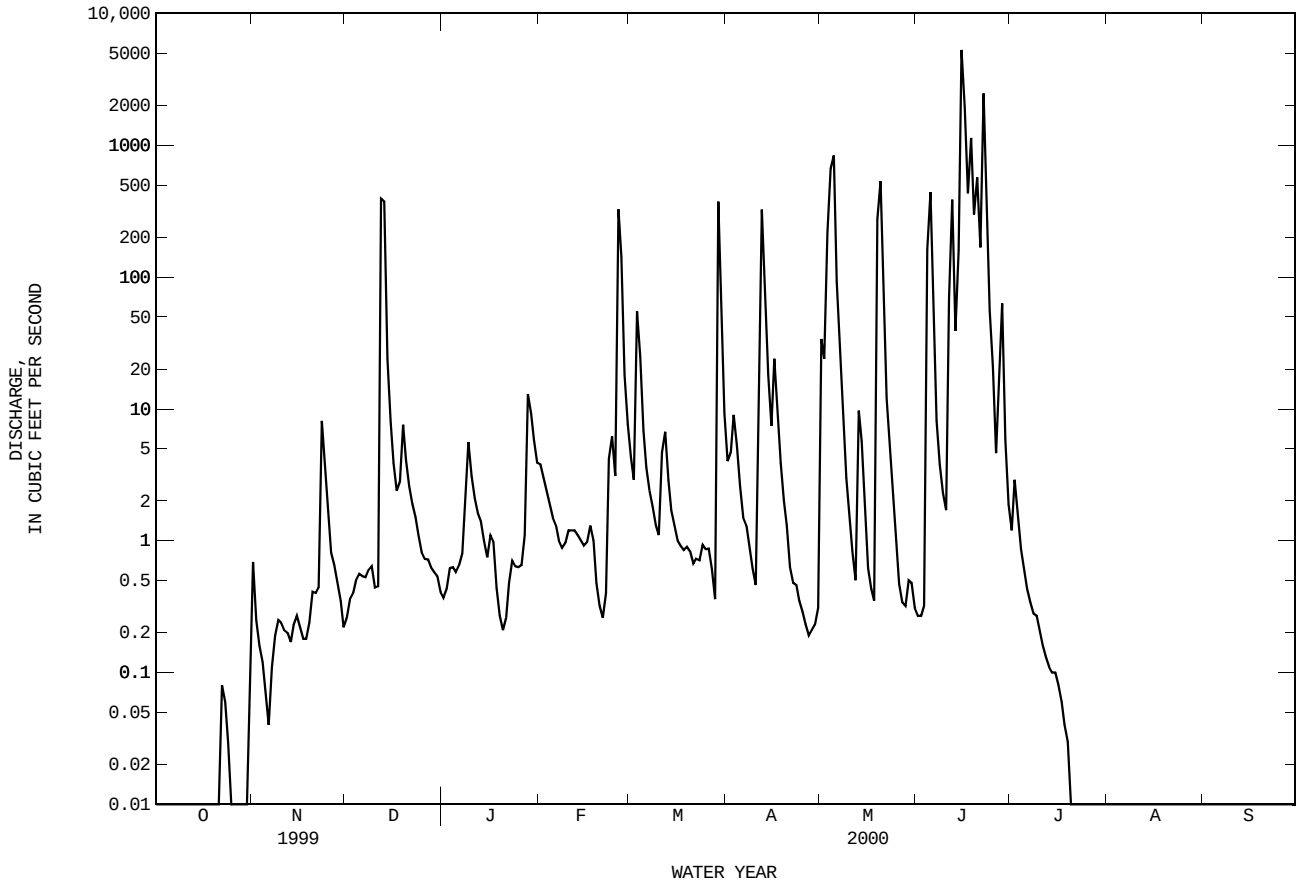
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.69	.26	.37	3.8	4.3	4.0	34	.27	1.2	.00	.00
2	.00	.25	.36	.43	3.0	2.9	4.7	24	.27	2.9	.00	.00
3	.00	.16	.40	.62	2.4	55	9.0	218	.32	1.6	.00	.00
4	.00	.12	.50	.63	1.9	25	5.3	664	162	.86	.00	.00
5	.00	.07	.56	.58	1.5	6.9	2.6	838	441	.59	.00	.00
6	.00	.04	.54	.65	1.3	3.6	1.5	93	33	.43	.00	.00
7	.00	.11	.53	.80	1.0	2.4	1.3	33	8.2	.34	.00	.00
8	.00	.19	.60	2.1	.88	1.8	.93	8.7	3.8	.28	.00	.00
9	.00	.25	.64	5.6	.96	1.3	.62	3.0	2.3	.27	.00	.00
10	.00	.24	.44	3.1	1.2	1.1	.46	1.6	1.7	.21	.00	.00
11	.00	.21	.45	2.1	1.2	4.7	3.7	.83	69	.16	.00	.00
12	.00	.20	396	1.6	1.2	6.7	325	.50	386	.13	.00	.00
13	.00	.17	375	1.4	1.1	2.9	70	9.7	39	.11	.00	.00
14	.00	.23	24	.99	1.0	1.7	18	5.7	159	.10	.00	.00
15	.00	.27	8.0	.75	.92	1.3	7.4	1.9	5280	.10	.00	.00
16	.00	.22	3.9	1.1	.98	1.0	24	.62	1960	.08	.00	.00
17	.00	.18	2.4	.99	1.3	.91	11	.43	431	.06	.00	.00
18	.00	.18	2.8	.44	1.0	.85	3.9	.35	1140	.04	.00	.00
19	.00	.24	7.6	.27	.48	.90	2.0	277	299	.03	.00	.00
20	.00	.41	4.1	.21	.32	.83	1.3	534	570	.01	.00	.00
21	.00	.40	2.6	.26	.26	.67	.63	59	168	.00	.00	.00
22	.08	.44	1.9	.48	.40	.73	.48	12	2480	.00	.00	.00
23	.06	8.1	1.5	.71	4.2	.71	.46	4.4	359	.00	.00	.00
24	.03	4.1	1.1	.64	6.2	.93	.35	2.0	56	.00	.00	.00
25	.01	1.8	.82	.63	3.1	.86	.29	.90	21	.00	.00	.00
26	.00	.81	.73	.65	327	.87	.23	.47	4.6	.00	.00	.00
27	.00	.65	.72	1.1	144	.61	.19	.34	19	.00	.00	.00
28	.00	.48	.63	13	18	.36	.21	.32	63	.00	.00	.00
29	.00	.35	.58	9.2	7.7	373	.23	.50	5.8	.00	.00	.00
30	.00	.22	.54	5.8	---	43	.31	.48	1.9	.00	.00	.00
31	.16	---	.41	3.9	---	9.3	---	.31	---	.00	.00	---
TOTAL	0.34	21.78	840.61	61.10	538.30	557.13	500.09	2829.05	14164.16	9.50	0.00	0.00
MEAN	.011	.73	27.1	1.97	18.6	18.0	16.7	91.3	472	.31	.000	.000
MAX	.16	8.1	396	13	327	373	325	838	5280	2.9	.00	.00
MIN	.00	.04	.26	.21	.26	.36	.19	.31	.27	.00	.00	.00
AC-FT	.7	43	1670	121	1070	1110	992	5610	28090	19	.00	.00
CFSM	.00	.01	.34	.03	.24	.23	.21	1.16	6.00	.00	.00	.00
IN.	.00	.01	.40	.03	.25	.26	.24	1.34	6.70	.00	.00	.00

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2000, BY WATER YEAR (WY)

MEAN	97.0	65.0	110	61.9	113	103	122	149	95.8	27.6	5.33	24.2
MAX	656	655	505	277	556	572	693	674	1128	490	96.8	353
(WY)	1982	1995	1999	1974	1983	1977	1966	1979	1981	1981	1974	1974
MIN	.000	.000	.000	.000	.000	.11	.062	.038	.000	.000	.000	.000
(WY)	1964	1964	1964	1976	1976	1972	1971	1988	1977	1964	1965	1963

08017300 SOUTH FORK SABINE RIVER NEAR QUINLAN, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1959 - 2000	
ANNUAL TOTAL	18655.40		19522.06			
ANNUAL MEAN	51.1		53.3		82.0	
HIGHEST ANNUAL MEAN					187	1995
LOWEST ANNUAL MEAN					3.29	1996
HIGHEST DAILY MEAN	5960	May 18	5280	Jun 15	13300	Jun 16 1981
LOWEST DAILY MEAN	.00	Aug 17	.00	Oct 1	.00	Mar 3 1959
ANNUAL SEVEN-DAY MINIMUM	.00	Aug 17	.00	Oct 1	.00	Apr 5 1959
INSTANTANEOUS PEAK FLOW			10700	Jun 15	23000	Jun 16 1981
INSTANTANEOUS PEAK STAGE			17.39	Jun 15	18.77	Apr 5 1986
ANNUAL RUNOFF (AC-FT)	37000		38720		59410	
ANNUAL RUNOFF (CFSM)	.65		.68		1.04	
ANNUAL RUNOFF (INCHES)	8.82		9.23		14.16	
10 PERCENT EXCEEDS	38		27		58	
50 PERCENT EXCEEDS	1.3		.51		.46	
90 PERCENT EXCEEDS	.00		.00		.00	



08017400 LAKE TAWAKONI NEAR WILLS POINT, TX

LOCATION.--Lat 32°48′31", long 95°55′10", Rains County, Hydrologic Unit 12010001, in stairwell at left end of spillway of Iron Bridge Dam on Sabine River, 750 ft upstream from bridge on Farm Road 47, 3.8 mi upstream from McBee Creek, 9.0 mi northeast of Wills Point, and at mile 514.5.

DRAINAGE AREA.--756 mi^2.

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

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 29,500 ft long, including a 480-foot uncontrolled concrete ogee spillway. Outlet works consist of two 4- by 6-foot sluice gates and two 20-inch steel pipes controlled by service valves. Closure of earthen dam began Jul 1, 1960, and deliberate impoundment of water began Oct 7, 1960. The lake was built for water conservation. Conservation pool storage is 888,130 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	454.0
Design flood	446.2
Crest of spillway	437.5
Lowest intake to wet well (invert)	416.5
Lowest gated outlet (invert)	378.0

COOPERATION.--Capacity table based on a 1984 survey was prepared by Forrest and Cotton, Inc., Consulting Engineers, for Sabine River Authority. Diversions are made for municipal use by the city of Dallas and various other users in the Sabine River basin.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,130,400 acre-ft, May 1, 1966, elevation, 442.58 ft; minimum contents since lake first filled in May 1965, 722,500 acre-ft, Feb 22, elevation, 431.16 ft, using Capacity Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 952,900 acre-ft, Jun 28, elevation, 437.96 ft; minimum contents, 722,500 acre-ft, Feb 22, elevation, 431.16 ft.

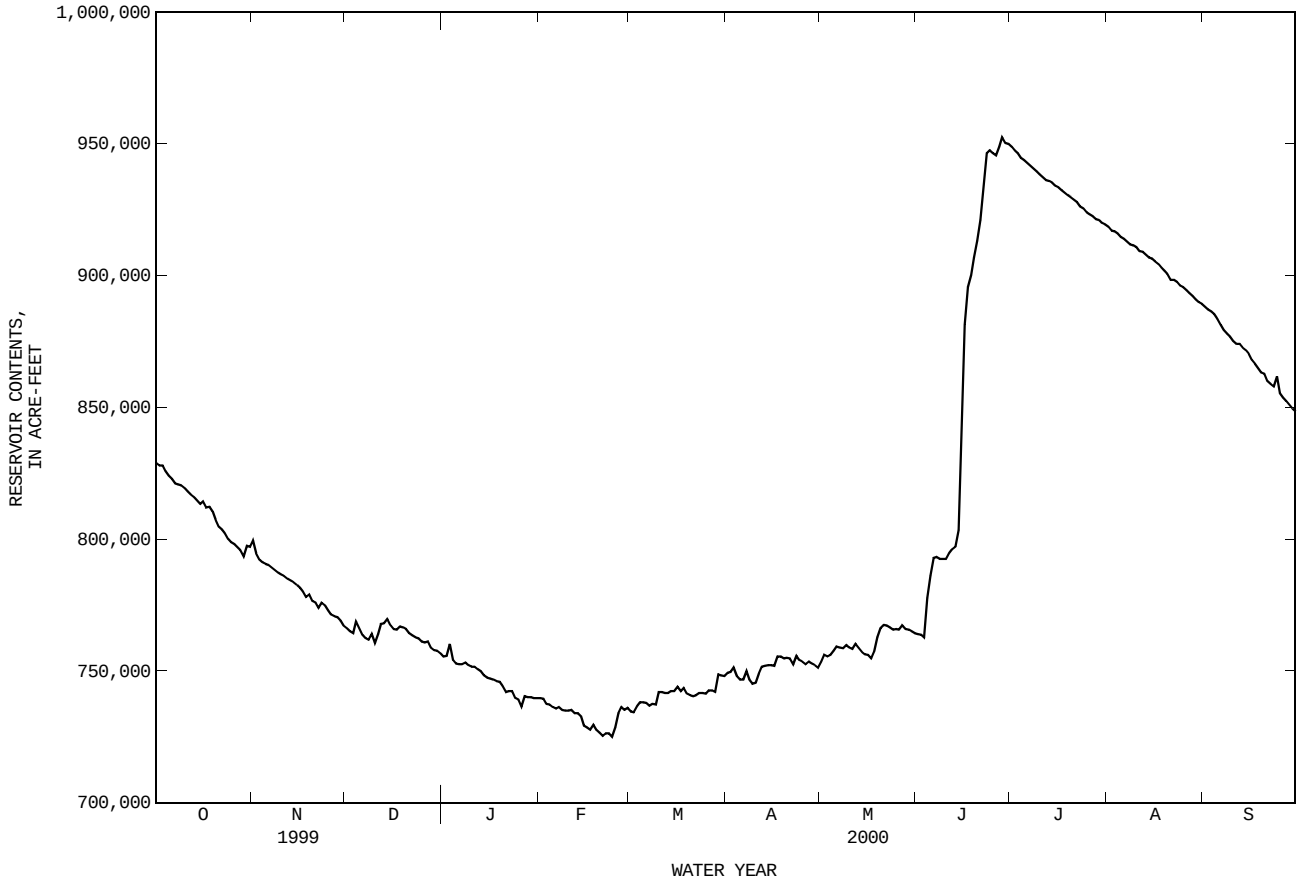
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	828900	799400	766200	755400	739700	734600	749300	753500	764000	948900	918500	888100
2	827900	794500	765000	755700	739400	734300	749600	756000	763700	947500	917100	887000
3	827900	792200	764300	760200	737500	736500	751200	755400	762700	946400	916800	886300
4	825800	791200	768800	754100	737200	738100	748000	756000	777700	944600	916000	885300
5	824100	790500	766200	752800	736200	738100	746700	757600	786200	943800	914600	883500
6	822800	790200	763700	752500	735600	737800	746700	759200	792800	942800	913900	881400
7	821100	789200	762400	752500	736200	736800	749900	758900	793200	941700	912900	879300
8	820800	788200	761800	753100	735200	737500	746700	758600	792500	940600	911800	877900
9	820400	787200	764000	752200	734900	737200	745100	759800	792500	939500	911400	876900
10	819400	786500	760500	751500	734900	742000	745500	758900	792500	938400	910700	875200
11	818100	785900	764000	751500	735200	742000	749000	758200	794500	937300	909300	874100
12	817000	784900	767800	750600	734000	741600	751500	760200	796100	936200	909000	874100
13	816000	784200	768100	749900	734000	741600	751900	758600	797100	935900	907900	872700
14	814700	783600	769700	748300	732700	742300	752200	757300	803400	935200	906800	871700
15	813300	782600	767200	747400	729200	742300	752200	756300	844800	934100	906500	870300
16	814300	781600	765900	747100	728500	743900	751900	756000	881400	933400	905400	867900
17	812000	780000	765600	746700	727600	742300	755400	754700	895500	932300	904400	866500
18	812300	778000	766900	746100	729500	743600	755400	757300	900100	931500	903000	864800
19	810400	779000	766500	745800	727600	741300	754700	762700	906800	930500	901900	863100
20	807400	776400	765900	744200	726600	740700	755000	766200	913200	929700	900500	862700
21	804700	775800	764300	742000	725300	740400	754700	767500	921100	928700	898400	860000
22	803700	773900	763400	742300	726300	740700	752500	767200	933400	927900	898400	858900
23	802100	775800	762700	742300	726300	741600	755700	766500	946400	926100	897600	857900
24	800100	774900	762400	739700	725000	741600	754100	765600	947500	925400	896200	861700
25	798800	772900	761100	739100	728500	741300	753500	765900	946400	924000	895500	855400
26	798100	771300	760800	736500	734000	742600	752500	765600	945600	923200	894500	853700
27	796800	770700	761100	740400	736200	742600	753500	767200	948900	922500	893400	852300
28	795800	770400	758900	740000	735200	742000	752800	765900	952500	921400	892300	850900
29	793500	769100	757900	740000	735900	748700	752200	765600	950300	921100	890900	849600
30	797500	767200	757600	739700	---	748300	751200	765000	950000	920000	889900	848500
31	797100	---	756600	739700	---	748000	---	764300	---	919300	889200	---
MAX	828900	799400	769700	760200	739700	748700	755700	767500	952500	948900	918500	888100
MIN	793500	767200	756600	736500	725000	734300	745100	753500	762700	919300	889200	848500
(+)	433.48	432.56	432.23	431.70	431.58	431.96	432.06	432.47	437.88	437.03	436.18	435.01
(@)	-33800	-29900	-10600	-16900	-3800	+12100	+3200	+13100	+185700	-30700	-30100	-40700

CAL YR 1999 MAX 1005000 MIN 756600 (@) -204000
WTR YR 2000 MAX 952500 MIN 725000 (@) +17600

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08017400 LAKE TAWAKONI NEAR WILLS POINT, TX--Continued



08017410 SABINE RIVER NEAR WILLS POINT, TX

LOCATION.--Lat 32°48′22", long 95°55′09", Van Zandt County, Hydrologic Unit 12010001, on right bank at downstream side of bridge on Farm Road 47, 750 ft downstream from Iron Bridge Dam that forms Lake Tawakoni, 3.6 mi upstream from McBee Creek, 9.0 mi northeast of Wills Point, and at mile 514.3.

DRAINAGE AREA.--756 mi^2.

PERIOD OF RECORD.--Oct 1970 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 370.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1970, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft), 750 ft upstream. No flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since construction of Iron Bridge Dam in 1960, about 21,000 ft^3/s May 1, 1966, from theoretical rating curve of flow over dam 750 ft upstream.

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

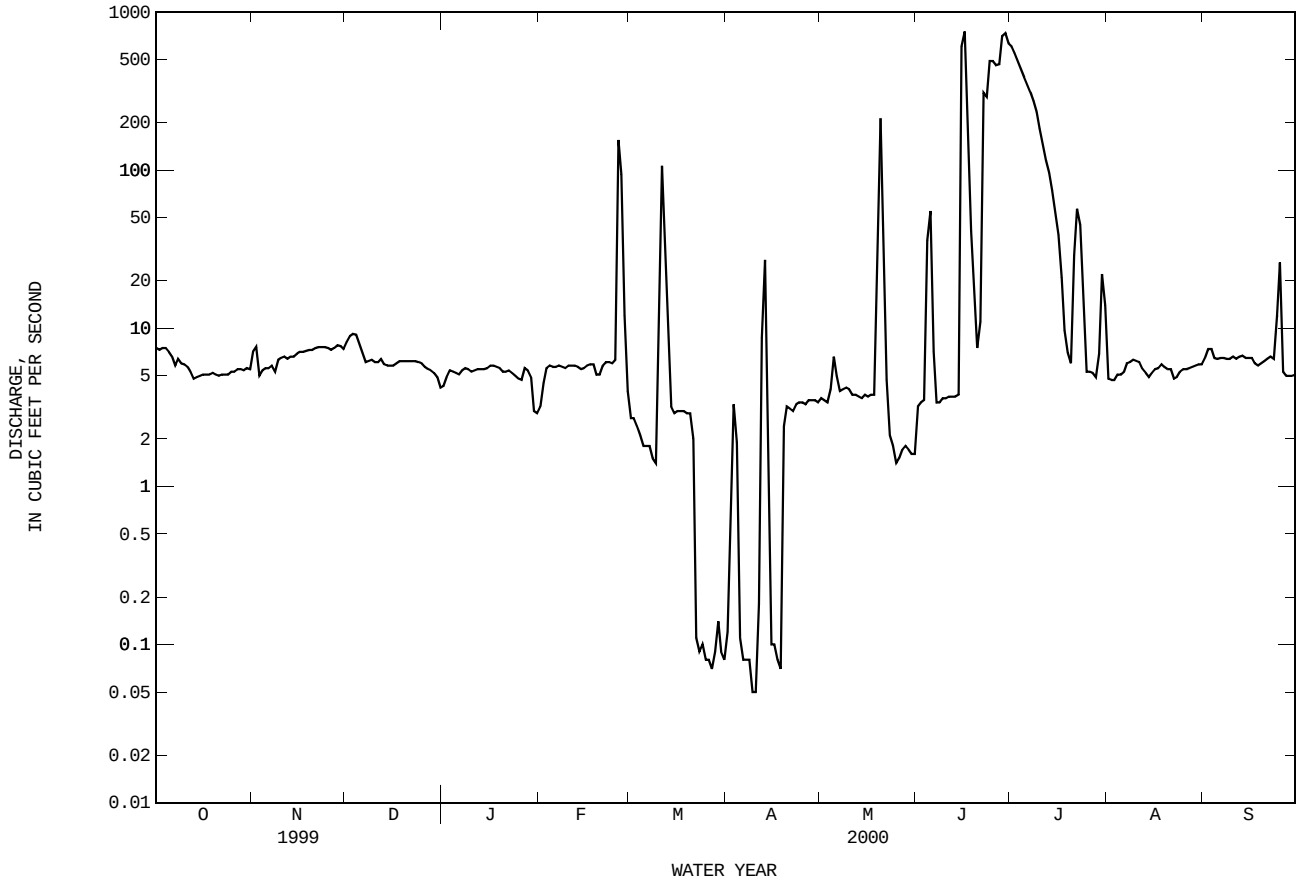
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.5	7.1	8.2	4.3	3.2	2.7	.12	3.6	3.2	604	4.8	6.5
2	7.3	7.6	8.9	4.9	4.5	2.7	.74	3.5	3.4	549	4.7	7.4
3	7.5	5.0	9.2	5.4	5.6	2.4	3.3	3.4	3.5	490	4.7	7.4
4	7.5	5.4	9.1	5.3	5.8	2.1	1.9	4.1	36	436	5.1	6.5
5	7.1	5.6	8.0	5.2	5.7	1.8	.11	6.6	55	386	5.1	6.4
6	6.6	5.6	7.0	5.1	5.7	1.8	.08	5.0	7.1	348	5.3	6.5
7	5.8	5.8	6.1	5.4	5.8	1.8	.08	4.0	3.4	312	6.0	6.5
8	6.4	5.3	6.2	5.6	5.7	1.5	.08	4.1	3.4	274	6.1	6.4
9	6.0	6.3	6.3	5.5	5.6	1.4	.05	4.2	3.6	232	6.3	6.4
10	5.9	6.5	6.1	5.3	5.8	5.6	.05	4.1	3.6	183	6.2	6.6
11	5.7	6.6	6.1	5.4	5.8	106	.18	3.8	3.7	145	6.1	6.4
12	5.3	6.4	6.4	5.5	5.8	22	8.7	3.8	3.7	115	5.5	6.6
13	4.8	6.6	5.9	5.5	5.7	6.8	27	3.7	3.7	96	5.2	6.7
14	4.9	6.6	5.8	5.5	5.5	3.2	1.1	3.6	3.8	75	4.9	6.5
15	5.0	6.9	5.8	5.6	5.6	2.9	.10	3.8	606	55	5.2	6.5
16	5.1	7.1	5.8	5.8	5.8	3.0	.10	3.7	751	39	5.5	6.5
17	5.1	7.1	6.0	5.8	5.9	3.0	.08	3.8	166	21	5.6	6.0
18	5.1	7.2	6.2	5.7	5.9	3.0	.07	3.8	41	9.7	5.9	5.8
19	5.2	7.3	6.2	5.6	5.1	2.9	2.4	15	20	7.0	5.7	6.0
20	5.1	7.3	6.2	5.3	5.1	2.9	3.2	212	7.5	6.0	5.5	6.2
21	5.0	7.5	6.2	5.3	5.8	2.0	3.1	40	11	29	5.5	6.4
22	5.1	7.6	6.2	5.4	6.1	.11	3.0	4.7	309	57	4.8	6.6
23	5.1	7.6	6.2	5.2	6.1	.09	3.3	2.1	291	45	4.9	6.4
24	5.1	7.6	6.1	5.0	6.0	.10	3.4	1.8	489	13	5.3	12
25	5.3	7.5	6.0	4.8	6.3	.08	3.4	1.4	490	5.3	5.5	26
26	5.3	7.3	5.7	4.7	155	.08	3.3	1.5	460	5.3	5.5	5.3
27	5.5	7.5	5.5	5.6	94	.07	3.5	1.7	468	5.2	5.6	5.0
28	5.5	7.8	5.4	5.4	12	.09	3.5	1.8	705	4.9	5.7	5.0
29	5.4	7.7	5.2	4.9	4.0	.14	3.5	1.7	734	6.9	5.8	5.0
30	5.6	7.4	4.9	3.0	---	.09	3.4	1.6	633	22	5.9	5.1
31	5.5	---	4.2	2.9	---	.08	---	1.6	---	14	5.9	---
TOTAL	177.3	204.8	197.1	159.9	404.9	182.43	82.84	359.5	6318.6	4590.3	169.8	212.6
MEAN	5.72	6.83	6.36	5.16	14.0	5.88	2.76	11.6	211	148	5.48	7.09
MAX	7.5	7.8	9.2	5.8	155	106	27	212	751	604	6.3	26
MIN	4.8	5.0	4.2	2.9	3.2	.07	.05	1.4	3.2	4.9	4.7	5.0
AC-FT	352	406	391	317	803	362	164	713	12530	9100	337	422

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1971 - 2000, BY WATER YEAR (WY)

MEAN	190	370	565	347	521	681	681	897	583	173	33.2	47.5
MAX	1726	2539	3377	1701	2482	1911	2090	3888	2825	1229	332	868
(WY)	1974	1975	1992	1998	1975	1990	1986	1990	1989	1981	1979	1974
MIN	.21	.76	.16	3.14	1.87	2.84	1.31	5.35	.81	.56	.12	.25
(WY)	1991	1979	1991	1996	1976	1976	1971	1996	1972	1972	1986	1987

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1971 - 2000	
ANNUAL TOTAL	138501.6		13060.07			
ANNUAL MEAN	379		35.7		423	
HIGHEST ANNUAL MEAN					1064	1992
LOWEST ANNUAL MEAN					3.66	1996
HIGHEST DAILY MEAN	4300	May 20	751	Jun 16	20000	May 4 1990
LOWEST DAILY MEAN	4.2	Dec 31	.05	Apr 9	.00	Oct 1 1971
ANNUAL SEVEN-DAY MINIMUM	5.0	Oct 13	.09	Mar 22	.00	Oct 6 1971
INSTANTANEOUS PEAK FLOW			1060	Jun 15	20600	May 4 1990
INSTANTANEOUS PEAK STAGE			10.77	Jun 15	19.11	May 4 1990
ANNUAL RUNOFF (AC-FT)	274700		25900		306700	
10 PERCENT EXCEEDS	1270		39		1320	
50 PERCENT EXCEEDS	25		5.6		19	
90 PERCENT EXCEEDS	5.7		1.8		.29	

08017410 SABINE RIVER NEAR WILLS POINT, TX--Continued



08018500 SABINE RIVER NEAR MINEOLA, TX

LOCATION.--Lat 32°36′49", long 95°29′08", Wood County, Hydrologic Unit 12010001, on left bank at downstream side of highway embankment 3 ft downstream from left end of bridge on U.S. Highway 69, 3.5 mi south of Mineola, 4.5 mi upstream from Missouri Pacific Railway Lines bridge, 16.2 mi upstream from Lake Fork Creek, and at mile 461.1.

DRAINAGE AREA.--1,357 mi^2.

PERIOD OF RECORD.--Jun 1939 to Sep 1959, Oct 1967 to current year. Gage-height records collected at this site since Jul 1946 are contained in reports published by the National Weather Service.
Water-quality records.--Chemical data: Oct 1967 to Sep 1996. Biochemical data: Oct 1973 to Sepember 1996.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 304.16 ft above sea level. May 12, 1939 to Dec 11, 1955, at site 55 ft upstream from downstream side of bridge; Dec 12, 1955 to Dec 12, 1959, at downstream side of bridge; Oct 1, 1967 to Sep 12, 1968, nonrecording gage at downstream side of bridge; Sep 13, 1968 to Oct 23, 1974, water-stage recorder at downstream side of bridge; Oct 24, 1974 to Oct 16, 1975, at site on right bank 75 ft downstream from bridge. All gages at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Oct 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft), 53 mi upstream. Additional regulation since Sep 1962 by Lake Holbrook (storage, 7,990 acre-ft), located on Keys Creek, a tributary to the Sabine River 8.0 mi upstream. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi^2 area in the Mill Creek drainage basin. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--20 years (water years 1940-59) prior to regulation by Lake Tawakoni, 1,054 ft^3/s (763,600 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1940-59).--Maximum discharge 76,000 ft^3/s Apr 1, 1945 (gage height, 24.00 ft); maximum gage height, 24.37 ft Jun 8, 1943; no flow at times. Maximum stage since at least 1890, that of Jun 8, 1943.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.4	19	17	18	54	187	65	28	22	1130	14	16
2	8.8	15	17	18	49	94	105	33	20	1000	14	16
3	9.6	13	18	18	43	77	138	56	17	856	21	16
4	11	14	22	17	37	70	143	317	20	693	23	16
5	12	13	42	15	32	57	136	467	49	562	18	15
6	11	11	30	16	28	46	118	390	324	467	15	15
7	11	11	27	18	26	42	87	343	309	397	13	16
8	11	13	26	26	25	41	82	240	143	345	12	16
9	11	14	30	31	25	38	75	115	71	303	12	16
10	11	14	33	31	25	37	56	68	48	267	12	16
11	11	15	29	31	25	106	41	49	42	230	12	15
12	9.8	14	114	29	24	314	508	38	61	188	12	15
13	9.3	15	195	27	25	360	878	89	96	150	13	15
14	9.4	15	107	26	24	202	634	213	91	122	13	15
15	10	15	67	25	23	109	423	109	879	101	13	14
16	11	16	51	24	23	74	227	104	9900	86	13	13
17	9.7	16	40	23	24	57	125	73	17800	71	13	13
18	12	16	35	23	24	51	80	45	15300	57	13	13
19	13	16	35	24	23	49	56	164	9890	46	12	13
20	12	17	36	23	22	42	43	760	6630	36	12	13
21	11	17	31	22	21	36	35	937	4640	28	12	12
22	11	20	27	21	21	36	29	866	3130	24	13	12
23	13	74	24	21	29	36	25	601	2050	20	13	12
24	14	61	22	21	30	34	23	267	1600	19	14	12
25	14	28	21	20	29	34	22	113	1330	38	15	13
26	12	22	20	20	105	34	20	66	956	45	15	12
27	11	20	19	24	234	37	21	50	664	36	16	13
28	11	19	18	48	484	34	23	38	742	25	16	13
29	9.9	19	18	51	417	52	21	32	1060	19	16	19
30	17	17	18	50	---	49	20	28	1180	16	16	18
31	26	---	18	52	---	53	---	24	---	15	16	---
TOTAL	361.9	589	1207	813	1951	2488	4259	6723	79064	7392	442	433
MEAN	11.7	19.6	38.9	26.2	67.3	80.3	142	217	2635	238	14.3	14.4
MAX	26	74	195	52	484	360	878	937	17800	1130	23	19
MIN	8.4	11	17	15	21	34	20	24	17	15	12	12
AC-FT	718	1170	2390	1610	3870	4930	8450	13340	156800	14660	877	859

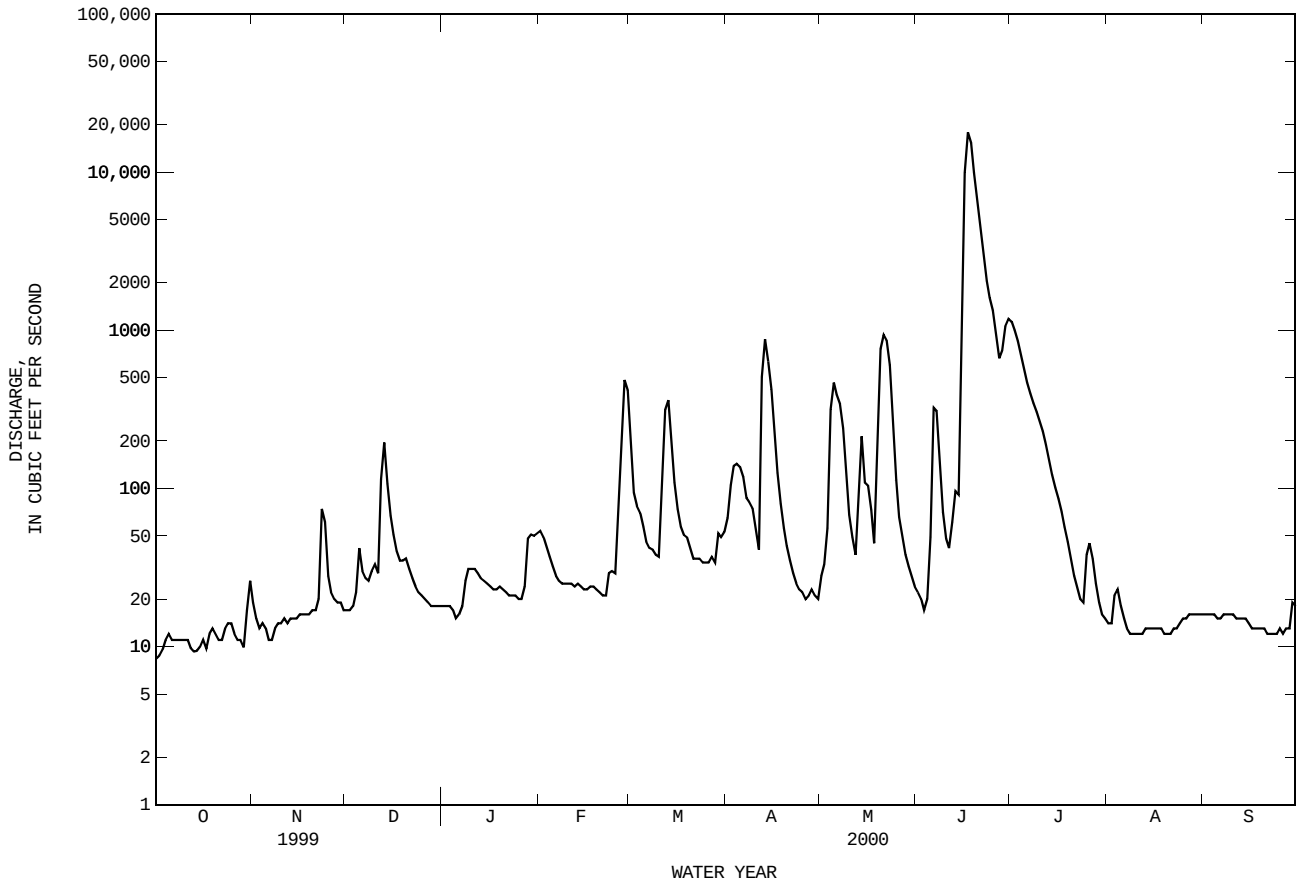
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000z, BY WATER YEAR (WY)

MEAN	290	783	1224	902	1299	1595	1338	1967	1064	262	57.9	61.5
MAX	2158	5296	5873	4097	4334	4175	4086	6934	4083	1626	419	616
(WY)	1974	1975	1992	1998	1975	1969	1990	1968	1973	1992	1979	1974
MIN	3.42	9.88	10.9	26.2	20.3	28.0	31.8	29.6	5.72	4.87	.071	.048
(WY)	1988	1990	1990	2000	1996	1996	1971	1988	1971	1969	1987	1987

08018500 SABINE RIVER NEAR MINEOLA, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000z	
ANNUAL TOTAL	237454.1		105722.9			
ANNUAL MEAN	651		289		902	
HIGHEST ANNUAL MEAN					1904	1968
LOWEST ANNUAL MEAN					29.8	1996
HIGHEST DAILY MEAN	6050	Feb 1	17800	Jun 17	36200	Dec 11 1971
LOWEST DAILY MEAN	8.4	Oct 1	8.4	Oct 1	.00	Aug 13 1970
ANNUAL SEVEN-DAY MINIMUM	8.9	Aug 26	10	Oct 11	.00	Sep 15 1971
INSTANTANEOUS PEAK FLOW			18500	Jun 17	37700	Dec 11 1971
INSTANTANEOUS PEAK STAGE			19.51	Jun 17	21.53	Dec 11 1971
ANNUAL RUNOFF (AC-FT)	471000		209700		653100	
10 PERCENT EXCEEDS	2320		350		2800	
50 PERCENT EXCEEDS	86		25		130	
90 PERCENT EXCEEDS	9.8		12		8.2	

z Period of regulated streamflow.



08018800 LAKE FORK RESERVOIR NEAR QUITMAN, TX

LOCATION.--Lat 32°48′48", long 95°31′40", Wood County, Hydrologic Unit 12010003, in room at left-end of gated concrete spillway structure of Lake Fork Dam on Lake Fork Creek, 2,000 ft upstream from bridge on State Highway 182, 2.3 mi upstream from Alum Branch, and 4.4 mi west-northwest of the county courthouse in Quitman.

DRAINAGE AREA.--490 mi^2.

PERIOD OF RECORD.--Oct 1979 to current year.
Water-quality records.--Chemical data: Oct 1980 to Sep 1984.

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 12,660 ft long, including a 260-foot gated concrete spillway. The outlet works consist of two 5- by 8-foot low-flow sluice gates, five 40- by 20-foot tainter gates, and two 5- by 6-foot sluice gates that open into a wet well where there are two 36-inch and one 10-inch valve-controlled and metered-outlet pipes. Deliberate impoundment began Jun 29, 1979, and closure of the dam was completed in Jan 1980. The lake was built for water conservation and is owned by the Sabine River Authority of Texas. No known diversions were made from the lake this year. Flow is affected at times by discharge from the flood-detention pools of 21 floodwater-retarding structures with a combined detention capacity of 20,270 acre-ft. These structures control runoff from 60 mi^2 above the lake. Conservation pool storage is 635,200 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	419.5
Top of tainter gates	405.0
Crest of gated spillway	385.0
Invert of upper sluice gate	383.0
Invert of lower sluice gate	360.5
Invert of sluice gate in two center pieces	360.0

COOPERATION.--Capacity table 1-A was provided by URS/Forest and Cotton, Inc., Consulting Engineers for the Sabine River Authority of Texas. Observed elevations for the period Oct 31, 1979, to Jan 31, 1980, were provided by the Sabine River Authority. A new capacity table, Table 2-C, provided by the Sabine River Authority of Texas was put into effect Oct 1, 1996.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 737,300 acre-ft, May 4, 1990, elevation, 405.15 ft; minimum contents after initial filling, 81,550 acre-ft, Sep 27, 1980, elevation, 366.86 ft, using Table 1-C.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 721,700 acre-ft, Jun 15, elevation, 404.61 ft; minimum contents, 582,300 acre-ft, Jan 30, 31, elevation, 399.44 ft.

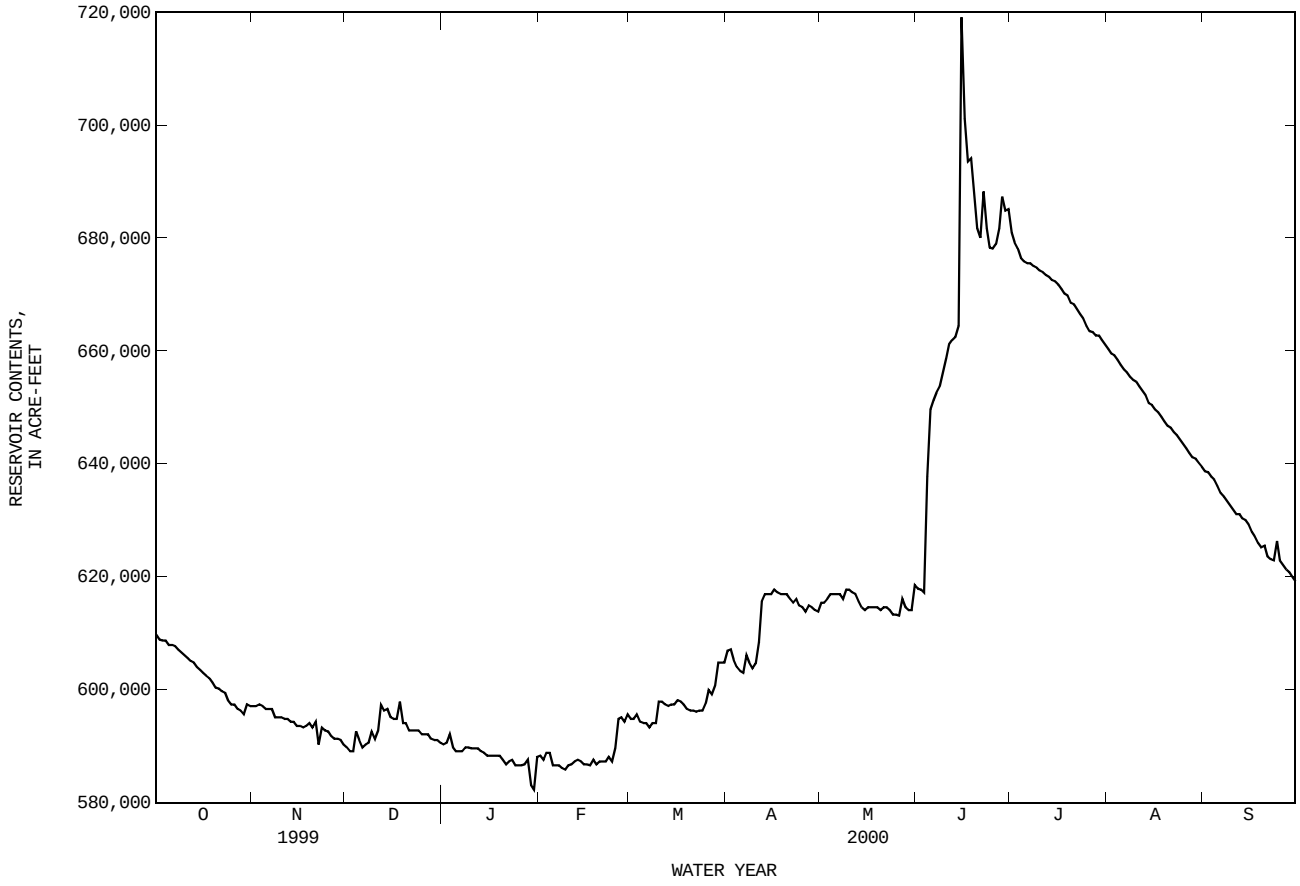
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	609700	597100	589800	590300	588300	594800	606900	615400	617900	680900	660300	638700
2	608900	597100	589100	590600	587600	594800	607100	615400	617700	679200	659500	638500
3	608700	597400	589100	592100	588800	595600	605300	616100	617200	678100	659200	637700
4	608700	597100	592600	589800	588800	594300	604000	616900	637700	676400	658400	637200
5	607900	596600	591100	589100	586600	594100	603300	616900	649600	675800	657500	636100
6	607900	596600	589800	589100	586600	594100	603000	616900	651300	675500	656700	634800
7	607700	596600	590300	589100	586600	593300	606100	616900	652600	675500	656200	634200
8	607100	595100	590600	589800	586100	594100	604800	616100	653700	675000	655400	633400
9	606600	595100	592600	589800	585800	594100	603800	617700	656200	674700	654800	632700
10	606100	595100	591300	589600	586600	597900	604600	617700	658600	674200	654500	631900
11	605600	594800	592800	589600	586800	597900	608400	617200	661100	673900	653700	631100
12	605100	594800	597400	589600	587300	597400	615600	616900	661900	673400	652900	631100
13	604800	594300	596300	589100	587600	597100	616900	615600	662500	673100	652100	630300
14	604000	594300	596600	588800	587300	597400	616900	614600	664400	672500	650700	630000
15	603500	593600	595100	588300	586800	597400	616900	614100	719000	672300	650400	629200
16	603000	593600	594800	588300	586800	598100	617700	614600	701100	671700	649600	627900
17	602500	593300	594800	588300	586600	597900	617200	614600	693500	670900	649100	627100
18	602000	593600	597900	588300	587600	597400	616900	614600	694100	670100	648300	626000
19	601200	594100	594100	588300	586800	596600	616900	614600	688200	669800	647500	625200
20	600400	593300	594100	587600	587300	596300	616900	614100	681700	668500	646700	625500
21	600200	594300	592800	586800	587300	596300	616100	614600	680000	668200	646400	623600
22	599700	590300	592800	587300	587300	596100	615400	614600	688200	667400	645600	623100
23	599400	593300	592800	587600	588100	596300	616100	614100	681700	666500	645100	622900
24	598100	592800	592800	586600	587300	596300	614900	613300	678300	665700	644300	626300
25	597400	592600	592100	586600	589600	597600	614600	613300	678100	664400	643500	622900
26	597400	591800	592100	586600	594800	599900	613800	613100	678900	663500	642700	622100
27	596600	591300	592100	586800	595100	599200	614900	616100	681700	663300	641900	621300
28	596300	591300	591300	587600	594300	600700	614600	614600	687300	662700	641100	620800
29	595600	591100	591100	583100	595600	604800	614100	614100	684800	662700	640900	620000
30	597400	590300	591100	582300	---	604800	613800	614100	685100	661900	640100	619200
31	597100	---	590600	588100	---	604800	---	618500	---	661100	639500	---
MAX	609700	597400	597900	592100	595600	604800	617700	618500	719000	680900	660300	638700
MIN	595600	590300	589100	582300	585800	593300	603000	613100	617200	661100	639500	619200
(+)	400.03	399.76	399.77	399.67	399.97	400.33	400.68	400.86	403.33	402.46	401.66	400.89
(@)	-13400	-6800	+300	-2500	+7500	+9200	+9000	+4700	+66600	-24000	-21600	-20300

CAL YR 1999 MAX 702200 MIN 589100 (@) -66700
WTR YR 2000 MAX 719000 MIN 582300 (@) +8700

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08018800 LAKE FORK RESERVOIR NEAR QUITMAN, TX--Continued



08019000 LAKE FORK CREEK NEAR QUITMAN, TX

LOCATION.--Lat 32°45′47", long 95°27′46", Wood County, Hydrologic Unit 12010003, at downstream side of highway embankment near left end of bridge on State Highway 37, 0.3 mi downstream from Dry Creek, 2.4 mi south of Quitman, and 23.4 mi upstream from mouth.

DRAINAGE AREA.--585 mi^2.

PERIOD OF RECORD.--Jun 1924 to Apr 1926, Feb 1939 to current year. Discharge from some high-water periods in 1925-26 published in WSP 1342. Monthly discharge only for some periods, published in WSP 1312. Prior to Oct 1961, published as "Lake Fork Sabine River near Quitman".

Water-quality records.--Chemical data: Dec 1961 to Sep 1989. Specific conductance: Nov 1967 to Sep 1989. Water temperature: Dec 1967 to Sep 1989.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 317.42 ft above sea level. From Jun 27, 1924, to Apr 30, 1926, a nonrecording gage was located at site 1,000 ft downstream at same datum. Prior to Sep 5, 1978, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1980, at least 10% of contributing drainage area has been regulated by Lake Fork Reservoir (station 08018800, conservation pool storage 635,200 acre-ft). Construction of Lake Fork Reservoir located about 5 mi upstream from this station, began in 1975. Deliberate impoundment began Jun 29, 1979, and the dam was completed in Jan 1980. Lake Fork Reservoir controls runoff from 490 mi^2 above this station. The city of Quitman discharges wastewater effluent into a tributary above this station. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--41 years (water years 1925, 1940-79), prior to regulation by Lake Fork Reservoir, 432 ft^3/s (313,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925, 1940-79).--Maximum discharge, 75,600 ft^3/s Mar 30, 1945 (gage height, 29.85 ft, from floodmark), from rating curve extended above 49,000 ft^3/s; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Jul 1895 reached a stage of about 25.9 ft, from information by local resident.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	101	76	55	46	47	44	50	53	29	7580	55	67
2	101	77	55	46	46	43	75	38	41	3650	57	69
3	101	76	55	46	45	46	101	32	47	2050	57	70
4	102	76	56	46	45	45	97	36	58	1470	57	69
5	102	75	55	46	44	44	66	45	86	1250	56	68
6	102	73	54	46	44	46	53	41	77	720	56	68
7	102	72	54	46	44	48	50	37	69	154	56	68
8	102	74	52	48	44	44	76	33	62	82	59	68
9	100	78	52	47	43	44	64	31	60	73	70	69
10	99	73	51	46	43	49	51	28	67	69	77	68
11	99	71	51	46	42	116	123	27	79	70	71	68
12	98	70	63	46	42	78	904	26	89	67	70	68
13	97	70	68	45	44	56	784	26	77	65	69	68
14	95	69	53	45	44	49	347	25	67	63	69	74
15	95	68	48	45	44	47	149	25	1900	62	69	76
16	95	68	47	45	44	47	102	25	16500	61	69	76
17	95	67	46	45	44	46	85	24	12500	60	69	76
18	94	66	50	45	44	51	76	24	6840	55	68	77
19	94	66	49	44	44	53	69	53	7780	53	66	82
20	92	64	48	44	44	50	64	145	5660	52	66	80
21	76	64	47	44	44	48	60	148	5060	52	66	80
22	79	63	46	44	44	48	56	97	4400	51	70	80
23	79	66	46	43	45	48	54	63	6980	51	69	79
24	78	63	46	43	44	47	53	48	5040	51	68	80
25	78	61	46	43	44	47	53	40	2590	51	68	83
26	78	60	46	43	55	46	50	35	1430	51	67	80
27	76	59	46	47	63	46	50	31	448	55	68	77
28	76	58	46	50	51	45	52	30	305	56	68	75
29	76	57	46	48	47	66	54	29	1180	56	68	74
30	79	56	46	46	---	98	53	27	3620	56	69	68
31	79	---	46	47	---	61	---	26	---	55	68	---
TOTAL	2820	2036	1569	1411	1318	1646	3921	1348	83141	18291	2035	2205
MEAN	91.0	67.9	50.6	45.5	45.4	53.1	131	43.5	2771	590	65.6	73.5
MAX	102	78	68	50	63	116	904	148	16500	7580	77	83
MIN	76	56	46	43	42	43	50	24	29	51	55	67
AC-FT	5590	4040	3110	2800	2610	3260	7780	2670	164900	36280	4040	4370

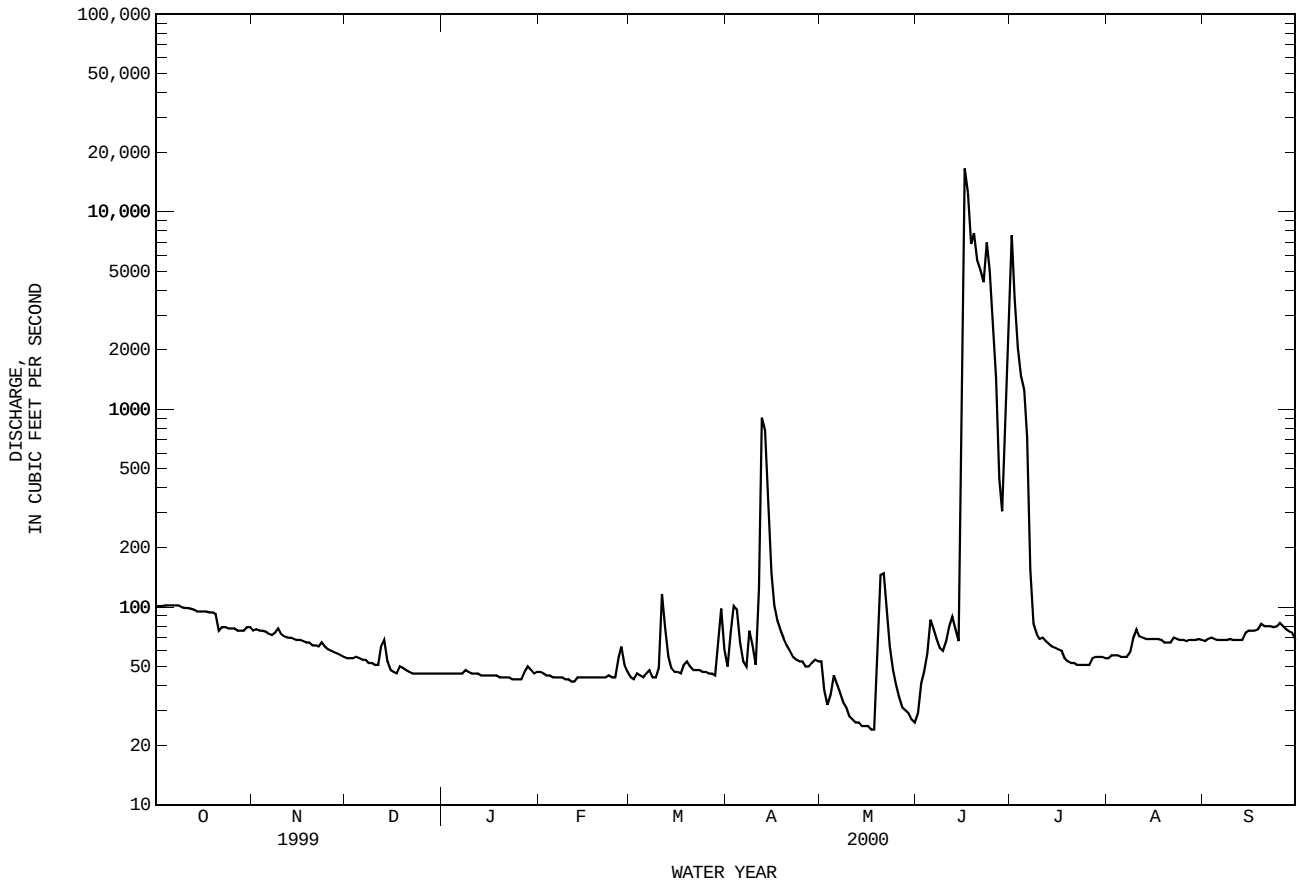
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1980 - 2000z, BY WATER YEAR (WY)

MEAN	123	326	633	479	829	774	534	647	428	258	90.6	39.3
MAX	1068	1552	2853	1786	3160	2938	1991	2807	2771	1795	940	167
(WY)	1999	1989	1992	1998	1997	1990	1990	1990	2000	1994	1992	1992
MIN	1.23	2.92	9.31	4.43	14.1	25.3	4.29	9.51	8.51	1.43	.13	.76
(WY)	1983	1981	1982	1981	1981	1996	1981	1998	1984	1985	1980	1982

08019000 LAKE FORK CREEK NEAR QUITMAN, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1980 - 2000z	
ANNUAL TOTAL	146654		121741			
ANNUAL MEAN	402		333		428	
HIGHEST ANNUAL MEAN					1006	1992
LOWEST ANNUAL MEAN					43.2	1984
HIGHEST DAILY MEAN	6850	May 19	16500	Jun 16	23600	May 18 1989
LOWEST DAILY MEAN	28	Apr 25	24	May 17	.00	Aug 23 1980
ANNUAL SEVEN-DAY MINIMUM	31	Feb 24	25	May 12	.00	Aug 23 1980
INSTANTANEOUS PEAK FLOW			17900	Jun 16	24200	May 18 1989
INSTANTANEOUS PEAK STAGE			21.34	Jun 16	21.75	May 18 1989
ANNUAL RUNOFF (AC-FT)	290900		241500		310200	
10 PERCENT EXCEEDS	1150		102		1240	
50 PERCENT EXCEEDS	68		59		45	
90 PERCENT EXCEEDS	41		44		5.1	

z Period of regulated streamflow.



08019200 SABINE RIVER NEAR HAWKINS, TX

LOCATION.--Lat 32°33′35", long 95°12′23", Wood County, Hydrologic Unit 12010002, on downstream side of Farm Road 14 bridge, 2.2 mi south of Hawkins.

DRAINAGE AREA.--2,259 mi^2.

PERIOD OF RECORD.--Oct 1997 to current year.

GAGE.--Water-stage recorder. Datum of gage is 267.97 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1997, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft), Lake Fork Reservoir (station 08018800, conservation pool storage 635,200 acre-ft), and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

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

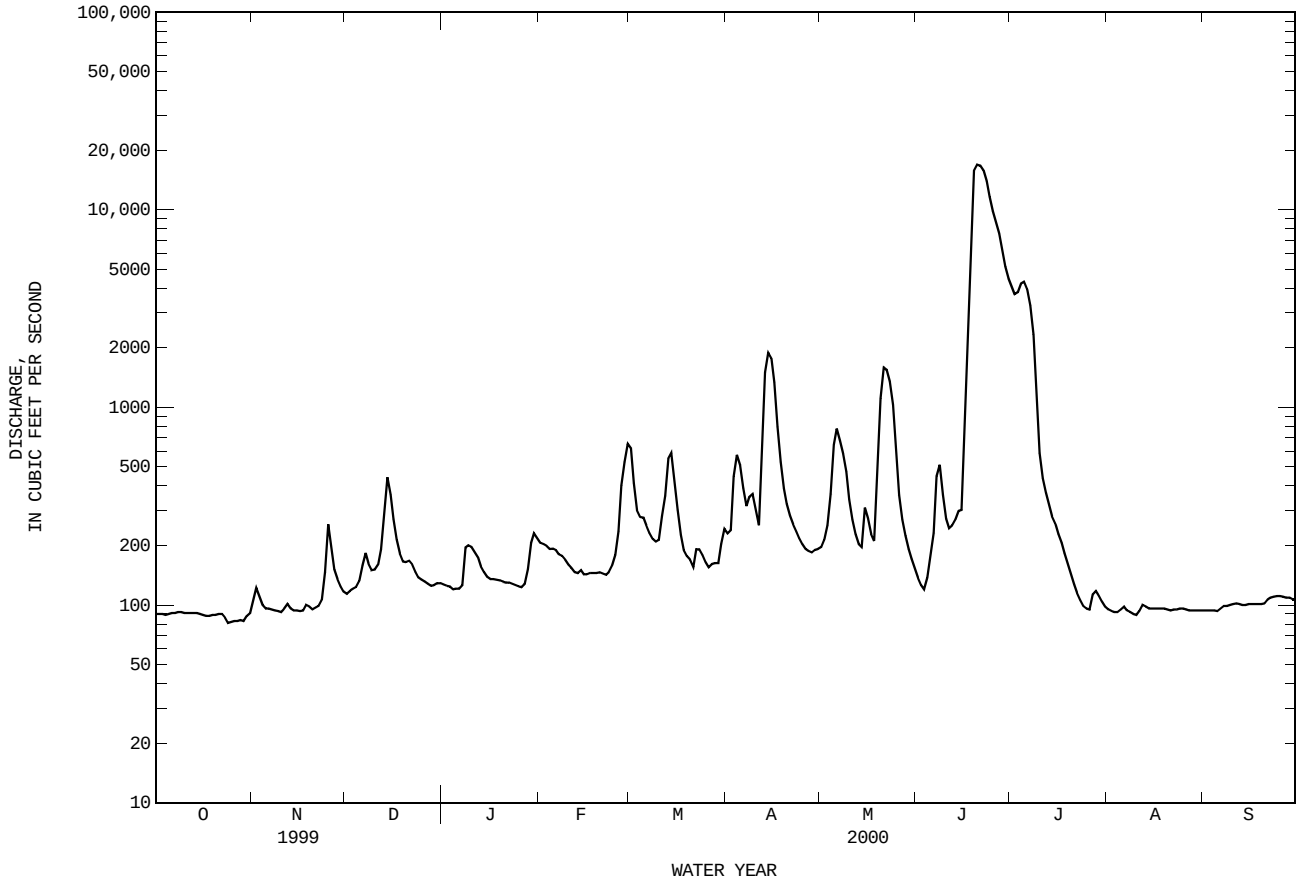
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	105	114	127	206	621	230	196	137	4070	95	94
2	90	122	118	125	203	413	239	213	126	3730	93	94
3	90	110	121	124	199	301	448	253	120	3810	92	94
4	89	100	123	120	192	279	575	365	137	4220	92	94
5	90	96	132	121	193	277	510	646	177	4320	95	93
6	91	96	158	121	189	253	390	779	231	3970	98	96
7	91	95	183	126	180	231	316	679	447	3280	94	99
8	92	94	162	195	177	216	352	583	511	2330	92	99
9	92	93	150	200	169	209	364	473	361	1220	90	100
10	91	92	151	196	160	213	301	342	272	588	89	101
11	91	96	160	185	154	282	253	270	245	438	93	102
12	91	101	191	174	147	357	692	228	253	368	100	101
13	91	96	281	157	145	552	1500	203	270	319	98	100
14	91	94	443	147	150	587	1890	196	299	281	96	100
15	90	94	362	139	143	426	1770	311	303	259	96	101
16	89	93	271	135	143	302	1340	274	854	228	96	101
17	88	94	214	135	145	226	797	228	1900	206	96	101
18	88	100	182	134	145	190	529	211	4820	182	96	101
19	89	98	166	133	145	177	389	482	15700	161	96	101
20	89	95	165	131	146	170	324	1110	16900	143	95	102
21	90	97	167	130	144	156	283	1590	16700	127	94	106
22	90	99	160	130	142	191	256	1550	15800	115	95	109
23	86	106	147	128	147	191	236	1350	13900	106	95	110
24	81	147	138	126	158	179	218	1030	11600	99	96	111
25	82	256	134	124	179	164	203	584	9790	96	96	111
26	83	200	131	123	236	155	192	360	8580	95	95	110
27	83	151	128	128	403	161	187	270	7550	113	94	109
28	84	135	125	152	530	163	184	224	6320	118	94	109
29	83	124	126	206	655	163	190	191	5140	111	94	107
30	88	117	129	230	---	204	192	171	4470	104	94	107
31	91	---	129	218	---	243	---	153	---	98	94	---
TOTAL	2744	3396	5361	4620	5925	8252	15350	15515	143913	35305	2933	3063
MEAN	88.5	113	173	149	204	266	512	500	4797	1139	94.6	102
MAX	92	256	443	230	655	621	1890	1590	16900	4320	100	111
MIN	81	92	114	120	142	155	184	153	120	95	89	93
AC-FT	5440	6740	10630	9160	11750	16370	30450	30770	285500	70030	5820	6080

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1997 - 2000, BY WATER YEAR (WY)

MEAN	656	944	2572	2563	2027	1795	832	828	2477	462	73.0	135
MAX	1735	2569	6397	6024	2973	3048	1456	1867	4797	1139	94.6	198
(WY)	1999	1999	1999	1998	1999	1998	1999	1999	2000	2000	2000	1998
MIN	88.5	113	173	149	204	266	512	115	87.0	47.9	49.5	102
(WY)	2000	2000	2000	2000	2000	2000	2000	1998	1998	1998	1998	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1997 - 2000	
ANNUAL TOTAL	395542		246377			
ANNUAL MEAN	1084		673		1277	
HIGHEST ANNUAL MEAN					1954	1999
LOWEST ANNUAL MEAN					673	2000
HIGHEST DAILY MEAN	7250	Feb 5	16900	Jun 20	16900	Jun 20 2000
LOWEST DAILY MEAN	48	Aug 22	81	Oct 24	4.8	Oct 5 1997
ANNUAL SEVEN-DAY MINIMUM	56	Aug 20	83	Oct 23	4.9	Sep 30 1997
INSTANTANEOUS PEAK FLOW			16900	Jun 20	16900	Jun 20 2000
INSTANTANEOUS PEAK STAGE			31.39	Jun 20	31.39	Jun 20 2000
ANNUAL RUNOFF (AC-FT)	784600		488700		925000	
10 PERCENT EXCEEDS	3980		683		4160	
50 PERCENT EXCEEDS	281		150		228	
90 PERCENT EXCEEDS	89		92		60	

08019200 SABINE RIVER NEAR HAWKINS, TX--Continued



08019500 BIG SANDY CREEK NEAR BIG SANDY, TX

LOCATION.--Lat 32°36′14", long 95°05′29", Upshur County, Hydrologic Unit 12010002, on downstream side of highway embankment near left end of bridge on State Highway 155, 0.5 mi upstream from Saint Louis Southwestern Railway Lines bridge, 1.6 mi northeast of Big Sandy, and 6.5 mi upstream from mouth.

DRAINAGE AREA.--231 mi^2.

PERIOD OF RECORD.--Feb 1939 to current year.
Water-quality records.--Chemical data: Mar 1961 to Sep 1986. Biochemical data: Oct 1984 to Sep 1986.

REVISED RECORDS.--WSP 1732: 1941(M), 1945-46, 1956, drainage area. WSP 1922: 1944(M), 1945-46.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 278.38 ft above sea level. Prior to Oct 5, 1940, nonrecording gage, and Oct 5, 1940, to Nov 26, 1951, water-stage recorder at site 1.3 mi upstream at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Winnsboro (capacity 8,100 acre-ft), about 27 miles upstream and by several other smaller lakes. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--24 years (water years 1939-62), 200 ft^3/s (145,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1939-62).--Maximum discharge, 24,000 ft^3/s Mar 31, 1945 (gage height, 24.10 ft, from floodmark), from rating curve extended above 91,000 ft^3/s; minimum, 5.6 ft^3/s Aug 16, 1939. Maximum stage since at least 1892, that of Apr 2, 1945.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	51	36	43	103	145	159	120	45	702	12	7.1
2	13	39	34	44	95	121	249	121	40	829	9.1	7.0
3	13	31	36	44	89	96	394	107	36	896	8.0	6.9
4	13	25	45	44	82	96	391	135	41	938	8.0	6.7
5	13	21	67	43	72	88	305	178	72	963	8.0	6.7
6	13	21	55	42	64	75	297	148	70	711	8.0	6.6
7	13	21	48	42	60	70	272	142	73	475	8.0	6.6
8	12	20	53	56	56	64	208	164	93	328	7.9	6.4
9	12	21	52	69	53	60	126	165	82	229	7.8	6.5
10	12	22	62	67	52	61	80	134	82	151	7.8	6.3
11	13	21	69	65	58	97	62	98	77	103	8.4	6.4
12	12	21	86	66	61	92	202	77	82	72	9.0	6.5
13	12	21	118	61	55	104	223	69	107	55	8.9	6.6
14	12	22	111	54	50	141	243	62	124	46	8.8	6.8
15	12	22	99	50	47	150	482	57	122	39	8.6	6.9
16	12	21	96	48	47	109	702	51	107	33	8.6	7.0
17	12	22	83	47	48	78	483	47	91	29	8.4	7.1
18	13	22	67	47	48	80	271	42	147	25	8.4	7.2
19	15	22	61	47	51	76	169	158	362	22	8.2	7.2
20	17	24	57	49	56	69	126	265	579	20	8.1	6.8
21	16	24	56	47	54	80	103	236	584	18	8.0	7.0
22	15	25	59	47	51	124	86	247	540	20	8.1	8.1
23	14	29	57	48	53	102	80	284	774	20	8.0	8.9
24	14	40	52	47	58	78	80	314	812	18	7.9	9.9
25	15	41	49	43	56	71	72	267	633	15	7.9	12
26	16	40	46	41	81	61	65	151	738	13	7.7	18
27	14	45	45	47	111	59	66	89	716	9.9	7.7	15
28	13	45	45	82	116	59	99	70	563	8.2	7.5	13
29	13	42	44	91	130	73	104	64	440	8.2	7.4	13
30	16	39	45	91	---	95	100	59	389	8.3	7.3	14
31	47	---	45	102	---	133	---	51	---	12	7.2	---
TOTAL	450	860	1878	1714	1957	2807	6299	4172	8621	6816.6	254.7	254.2
MEAN	14.5	28.7	60.6	55.3	67.5	90.5	210	135	287	220	8.22	8.47
MAX	47	51	118	102	130	150	702	314	812	963	12	18
MIN	12	20	34	41	47	59	62	42	36	8.2	7.2	6.3
AC-FT	893	1710	3730	3400	3880	5570	12490	8280	17100	13520	505	504

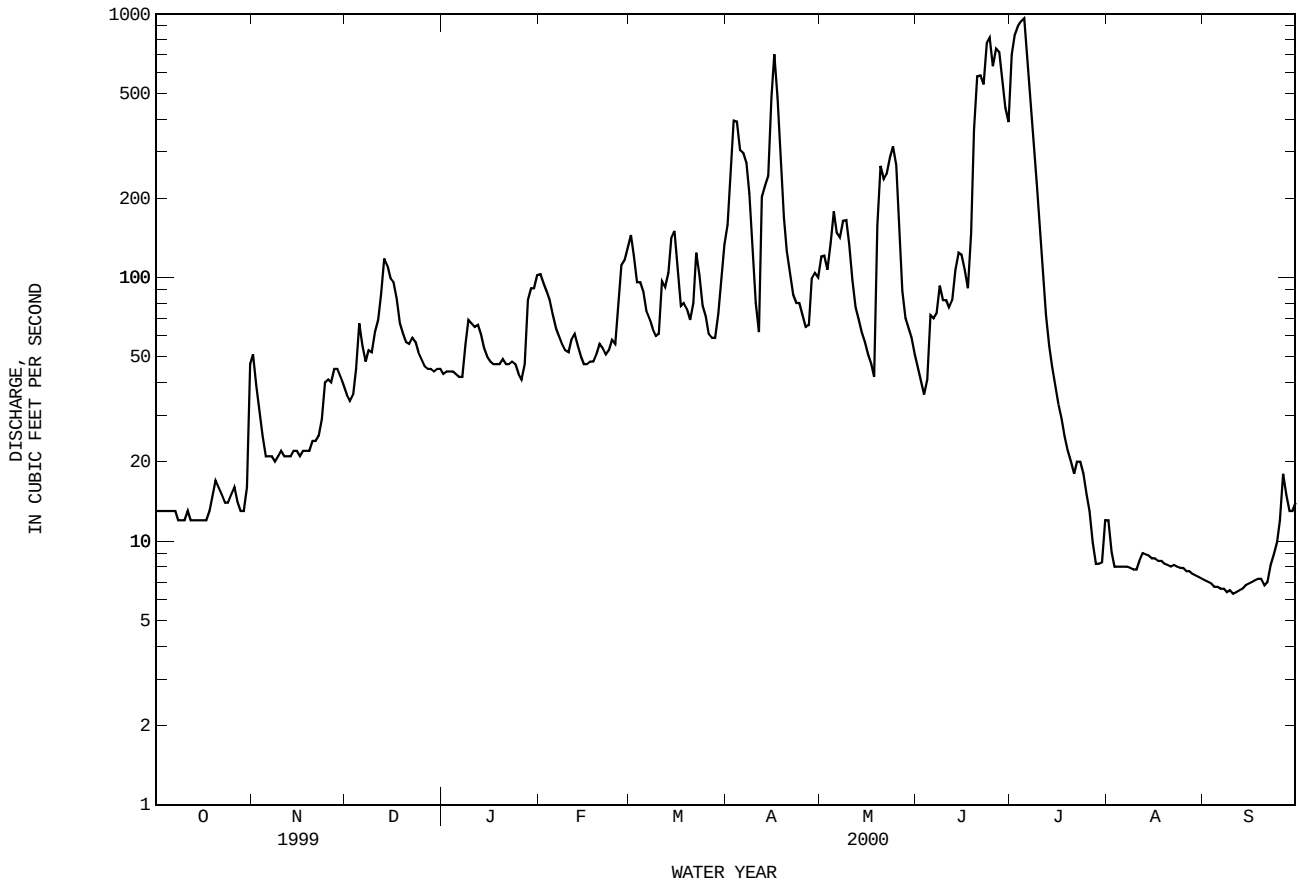
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2000z, BY WATER YEAR (WY)

MEAN	61.6	144	242	228	283	306	295	273	150	82.9	30.0	51.2
MAX	469	884	884	798	856	694	1068	796	528	416	150	441
(WY)	1994	1975	1988	1993	1997	1969	1973	1968	1981	1994	1979	1974
MIN	13.2	20.0	27.2	38.4	43.7	47.5	52.3	32.5	9.61	6.99	4.65	8.47
(WY)	1979	1966	1966	1966	1996	1966	1981	1998	1984	1984	1984	2000

08019500 BIG SANDY CREEK NEAR BIG SANDY, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1963 - 2000z	
ANNUAL TOTAL	48495		36083.5			
ANNUAL MEAN	133		98.6		178	
HIGHEST ANNUAL MEAN					358	1975
LOWEST ANNUAL MEAN					43.7	1964
HIGHEST DAILY MEAN	1180	Feb 2	963	Jul 5	6240	May 19 1989
LOWEST DAILY MEAN	12	Oct 8	6.3	Sep 10	3.5	Jul 24 1984
ANNUAL SEVEN-DAY MINIMUM	12	Oct 8	6.5	Sep 6	4.0	Aug 16 1984
INSTANTANEOUS PEAK FLOW			1040	Jul 4	6680	May 19 1989
INSTANTANEOUS PEAK STAGE			11.90	Jul 4	18.30	May 19 1989
ANNUAL RUNOFF (AC-FT)	96190		71570		129200	
10 PERCENT EXCEEDS	295		238		412	
50 PERCENT EXCEEDS	77		51		77	
90 PERCENT EXCEEDS	13		8.0		16	

z Period of regulated streamflow.



08019000 LAKE GLADEWATER NEAR GLADEWATER, TX

LOCATION.--Lat 32°33′00", long 09°45′70", Upshur County, Hydrologic Unit 12010002, located in control tower 20 ft upstream from the centerline of dam, approximately 1.5 mi from Gladewater, 400 ft right of left bank.

DRAINAGE AREA.--352.0 mi^2.

PERIOD OF RECORD.--Feb 1998 to current year.

GAGE.--A data collection platform (DCP) and incremental shaft encoder are housed in a 8 x 8 ft shelter sitting atop a 24 in vertical tower, 55 ft upstream from centerline of dam, 400 ft right of left bank. Datum of gage is mean sea level. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records fair. The lake is formed by a rolled earthfill dam. The dam was completed and storage began in 1952. An uncontrolled spillway has been cut through natural ground, and is located about 304 ft above mean sea level. The dam was built by the city of Gladewater to impound water for municipal use. Conservation pool storage is 6,950 acre-ft. Data regarding the dam is given in the following table:

	Elevation (feet)
Top of dam	312.0
Crest of emergency spillway	304.0
Crest of service spillway	300.0

COOPERATION.--Capacity table was furnished by the Texas Water Development Board. There was no known diversion from the lake during the current water year.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,600 acre-ft, Apr 4, elevation, 301.78 ft; minimum contents, 3,680 acre-ft, Sep 30, elevation, 297.67 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 5,600 acre-ft, Apr 4, elevation, 301.78 ft; minimum contents, 3,960 acre-ft, Sep 30, elevation, 298.31 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 5,470 acre-ft, May 4, elevation, 301.51 ft; minimum contents, 3,680 acre-ft, Sep 30, elevation, 297.67 ft.

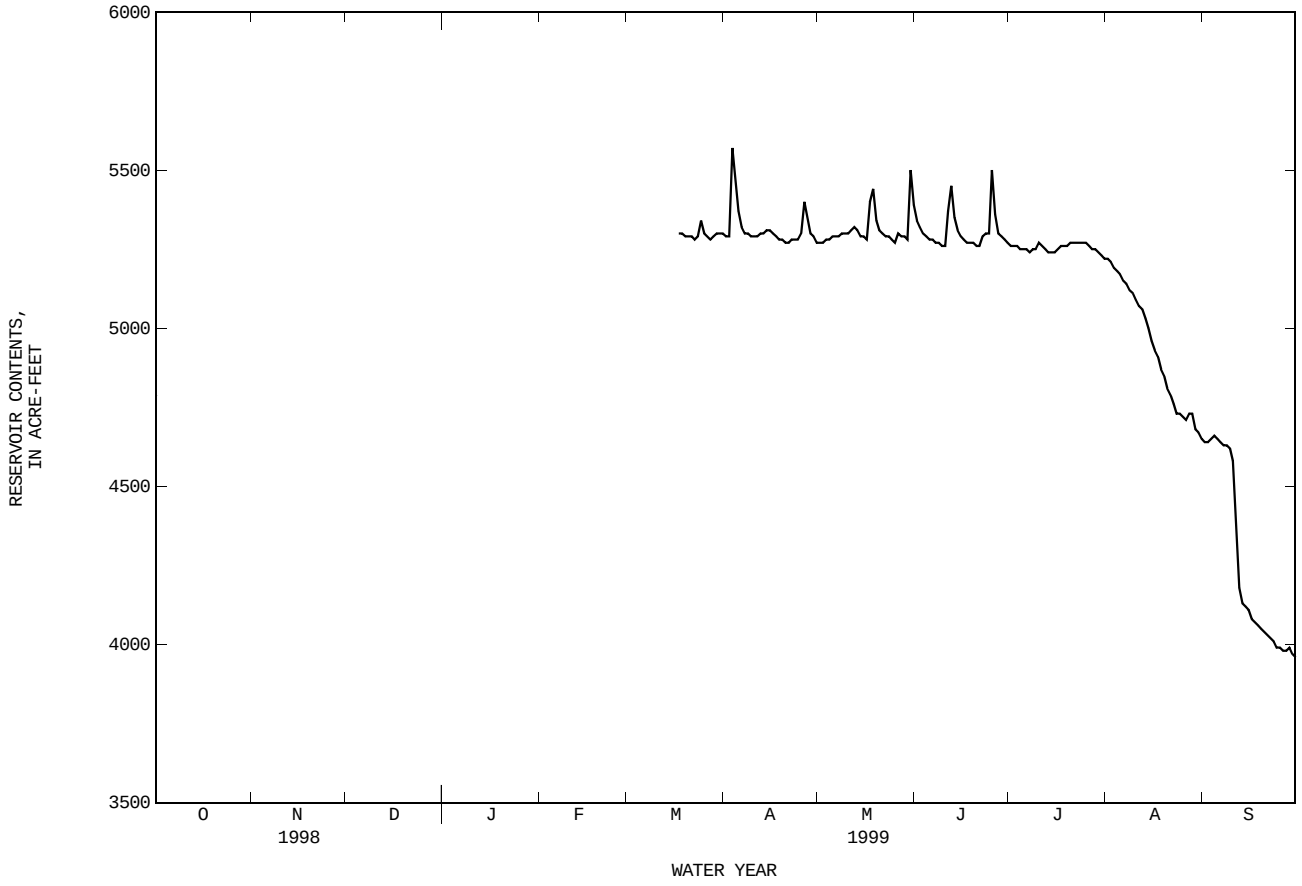
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	5290	5270	5340	5260	5220	4640
2	---	---	---	---	---	---	5290	5270	5320	5260	5210	4640
3	---	---	---	---	---	---	5570	5280	5300	5260	5190	4650
4	---	---	---	---	---	---	5470	5280	5290	5250	5180	4660
5	---	---	---	---	---	---	5370	5290	5280	5250	5170	4650
6	---	---	---	---	---	---	5320	5290	5280	5250	5150	4640
7	---	---	---	---	---	---	5300	5290	5270	5240	5140	4630
8	---	---	---	---	---	---	5300	5300	5270	5250	5120	4630
9	---	---	---	---	---	---	5290	5300	5260	5250	5110	4620
10	---	---	---	---	---	---	5290	5300	5260	5270	5090	4580
11	---	---	---	---	---	---	5290	5310	5370	5260	5070	4380
12	---	---	---	---	---	---	5300	5320	5450	5250	5060	4180
13	---	---	---	---	---	---	5300	5310	5350	5240	5030	4130
14	---	---	---	---	---	---	5310	5290	5310	5240	5000	4120
15	---	---	---	---	---	---	5310	5290	5290	5240	4960	4110
16	---	---	---	---	---	---	5300	5280	5280	5250	4930	4080
17	---	---	---	---	---	5300	5290	5400	5270	5260	4910	4070
18	---	---	---	---	---	5300	5280	5440	5270	5260	4870	4060
19	---	---	---	---	---	5290	5280	5340	5270	5260	4850	4050
20	---	---	---	---	---	5290	5270	5310	5260	5270	4810	4040
21	---	---	---	---	---	5290	5270	5300	5260	5270	4790	4030
22	---	---	---	---	---	5280	5280	5290	5290	5270	4760	4020
23	---	---	---	---	---	5290	5280	5290	5300	5270	4730	4010
24	---	---	---	---	---	5340	5280	5280	5300	5270	4730	3990
25	---	---	---	---	---	5300	5300	5270	5500	5270	4720	3990
26	---	---	---	---	---	5290	5400	5300	5360	5260	4710	3980
27	---	---	---	---	---	5280	5350	5290	5300	5250	4730	3980
28	---	---	---	---	---	5290	5300	5290	5290	5250	4730	3990
29	---	---	---	---	---	5300	5290	5280	5280	5240	4680	3970
30	---	---	---	---	---	5300	5270	5500	5270	5230	4670	3960
31	---	---	---	---	---	5300	---	5390	---	5220	4650	---
MEAN	---	---	---	---	---	---	5310	5310	5300	5250	4930	4250
MAX	---	---	---	---	---	---	5570	5500	5500	5270	5220	4660
MIN	---	---	---	---	---	---	5270	5270	5260	5220	4650	3960
(+)						301.16	301.11	301.35	301.10	301.01	299.82	298.31
(@)							-30	+120	-120	-50	-570	-690

WTR YR 1999 MAX 5600 MIN 3960

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08019000 LAKE GLADEWATER NEAR GLADEWATER, TX--Continued



08019000 LAKE GLADEWATER NEAR GLADEWATER, TX--Continued

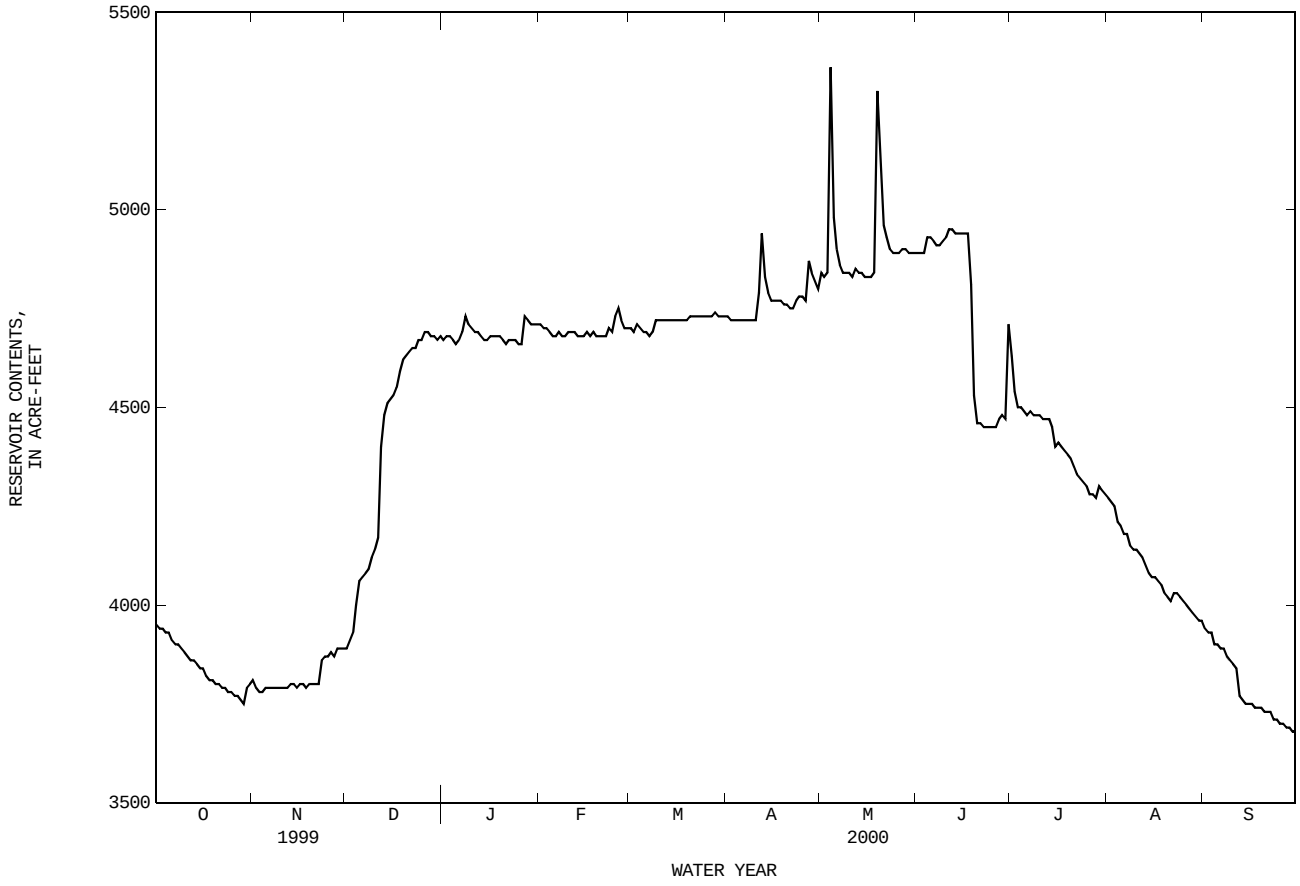
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3950	3810	3890	4670	4710	4700	4730	4840	4890	4630	4270	3940
2	3940	3790	3910	4680	4700	4690	4720	4830	4890	4540	4260	3930
3	3940	3780	3930	4680	4700	4710	4720	4840	4890	4500	4250	3930
4	3930	3780	4000	4670	4690	4700	4720	5360	4930	4500	4210	3900
5	3930	3790	4060	4660	4680	4690	4720	4980	4930	4490	4200	3900
6	3910	3790	4070	4670	4680	4690	4720	4900	4920	4480	4180	3890
7	3900	3790	4080	4690	4690	4680	4720	4860	4910	4490	4180	3890
8	3900	3790	4090	4730	4680	4690	4720	4840	4910	4480	4150	3870
9	3890	3790	4120	4710	4680	4720	4720	4840	4920	4480	4140	3860
10	3880	3790	4140	4700	4690	4720	4720	4840	4930	4480	4140	3850
11	3870	3790	4170	4690	4690	4720	4790	4830	4950	4470	4130	3840
12	3860	3790	4400	4690	4690	4720	4940	4850	4950	4470	4120	3770
13	3860	3800	4480	4680	4680	4720	4830	4840	4940	4470	4100	3760
14	3850	3800	4510	4670	4680	4720	4790	4840	4940	4450	4080	3750
15	3840	3790	4520	4670	4680	4720	4770	4830	4940	4400	4070	3750
16	3840	3800	4530	4680	4690	4720	4770	4830	4940	4410	4070	3750
17	3820	3800	4550	4680	4680	4720	4770	4830	4940	4400	4060	3740
18	3810	3790	4590	4680	4690	4720	4770	4840	4810	4390	4050	3740
19	3810	3800	4620	4680	4680	4720	4760	5300	4530	4380	4030	3740
20	3800	3800	4630	4670	4680	4730	4760	5110	4460	4370	4020	3730
21	3800	3800	4640	4660	4680	4730	4750	4960	4460	4350	4010	3730
22	3790	3800	4650	4670	4680	4730	4750	4930	4450	4330	4030	3730
23	3790	3860	4650	4670	4700	4730	4770	4900	4450	4320	4030	3710
24	3780	3870	4670	4670	4690	4730	4780	4890	4450	4310	4020	3710
25	3780	3870	4670	4660	4730	4730	4780	4890	4450	4300	4010	3700
26	3770	3880	4690	4660	4750	4730	4770	4890	4450	4280	4000	3700
27	3770	3870	4690	4730	4720	4730	4870	4900	4470	4280	3990	3690
28	3760	3890	4680	4720	4700	4740	4840	4900	4480	4270	3980	3690
29	3750	3890	4680	4710	4700	4730	4820	4890	4470	4300	3970	3680
30	3790	3890	4670	4710	---	4730	4800	4890	4710	4290	3960	3680
31	3800	---	4680	4710	---	4730	---	4890	---	4280	3960	---
MEAN	3840	3820	4410	4680	4690	4720	4770	4910	4750	4410	4090	3780
MAX	3950	3890	4690	4730	4750	4740	4940	5360	4950	4630	4270	3940
MIN	3750	3780	3890	4660	4680	4680	4720	4830	4450	4270	3960	3680
(+)	297.94	298.15	299.87	299.93	299.92	299.98	300.31	299.95	299.01	298.01	298.30	297.67
(@)	-167	+90	+790	+30	-10	+30	+70	+90	-180	-430	-320	-280

WTR YR 2000 MAX 5360 MIN 3680 (@) -280

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08019000 LAKE GLADEWATER NEAR GLADEWATER, TX--Continued



08020000 SABINE RIVER NEAR GLADEWATER, TX

LOCATION.--Lat 32°31'37", long 94°57'36", Gregg County, Hydrologic Unit 12010002, on right bank 46 ft downstream from bridge on U.S. Highway 271, 0.4 mi downstream from Glade Creek, 1.2 mi southwest of Gladewater, and at mile 397.5.

DRAINAGE AREA.--2,791 mi^2.

PERIOD OF RECORD.--Oct 1932 to current year.

REVISED RECORDS.--WSP 1732: Drainage area. WRD TX-73-1: 1972.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 243.85 ft above sea level. Prior to Oct 13, 1933, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft), Lake Fork Creek Reservoir (station 08018800, conservation pool storage 635,200 acre-ft, and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--28 years (water years 1933-60) prior to regulation by Lake Tawakoni, 2,012 ft^3/s (1,458,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1933-60).--Maximum discharge, 138,000 ft^3/s Apr 2, 1945 (gage height, 44.16 ft, from floodmark), from rating curve extended above 91,000 ft^3/s; minimum, 5.6 ft^3/s Aug 16, 1939. Maximum stage since at least 1892, that of Apr 2, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1914 reached a stage of about 41.7 ft (discharge, 85,900 ft^3/s), from information by local resident.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	111	171	157	203	471	935	609	357	218	8090	112	72
2	109	176	150	204	450	867	683	403	186	7240	108	71
3	105	168	157	207	419	684	1060	457	164	6520	100	71
4	102	151	175	203	393	564	1420	1100	175	6020	93	71
5	95	128	247	192	357	520	1350	1560	239	5720	90	70
6	85	113	303	189	336	482	1120	1260	327	5560	90	70
7	82	111	278	188	320	433	912	1060	342	5310	93	70
8	83	111	265	283	302	400	802	893	490	4820	90	71
9	83	108	254	404	289	376	787	777	551	3870	85	72
10	83	106	250	440	278	386	713	650	443	2390	81	74
11	82	104	273	388	267	503	604	510	366	1170	79	75
12	82	103	379	348	262	606	1160	396	342	722	80	76
13	82	110	532	325	256	678	1980	347	353	573	87	75
14	81	109	613	283	241	812	2370	302	378	485	90	75
15	80	107	658	251	234	852	2520	285	410	418	87	74
16	80	105	560	236	227	726	2390	341	413	366	84	73
17	79	104	450	231	224	583	1960	321	995	319	84	73
18	79	103	372	229	233	497	1350	260	2000	278	84	74
19	84	109	313	228	234	469	882	652	3550	249	86	75
20	92	112	280	227	237	438	631	1620	5120	215	84	75
21	99	111	266	217	238	418	504	2680	6690	193	79	79
22	100	111	259	210	229	883	413	3030	9870	186	85	82
23	99	126	255	212	237	1120	363	2490	12800	161	83	85
24	93	148	242	210	259	863	338	1890	13600	135	84	88
25	86	194	222	205	294	629	315	1360	13100	123	85	90
26	82	291	208	194	502	524	283	890	12200	114	84	92
27	83	265	206	220	704	497	283	567	11200	108	81	96
28	81	217	211	349	866	481	370	416	10300	115	77	96
29	82	188	202	423	924	525	364	343	9450	128	74	95
30	93	169	200	459	---	605	335	308	8790	125	73	94
31	114	---	202	470	---	579	---	257	---	113	72	---
TOTAL	2771	4229	9139	8428	10283	18935	28871	27782	125062	61836	2664	2354
MEAN	89.4	141	295	272	355	611	962	896	4169	1995	85.9	78.5
MAX	114	291	658	470	924	1120	2520	3030	13600	8090	112	96
MIN	79	103	150	188	224	376	283	257	164	108	72	70
AC-FT	5500	8390	18130	16720	20400	37560	57270	55110	248100	122700	5280	4670

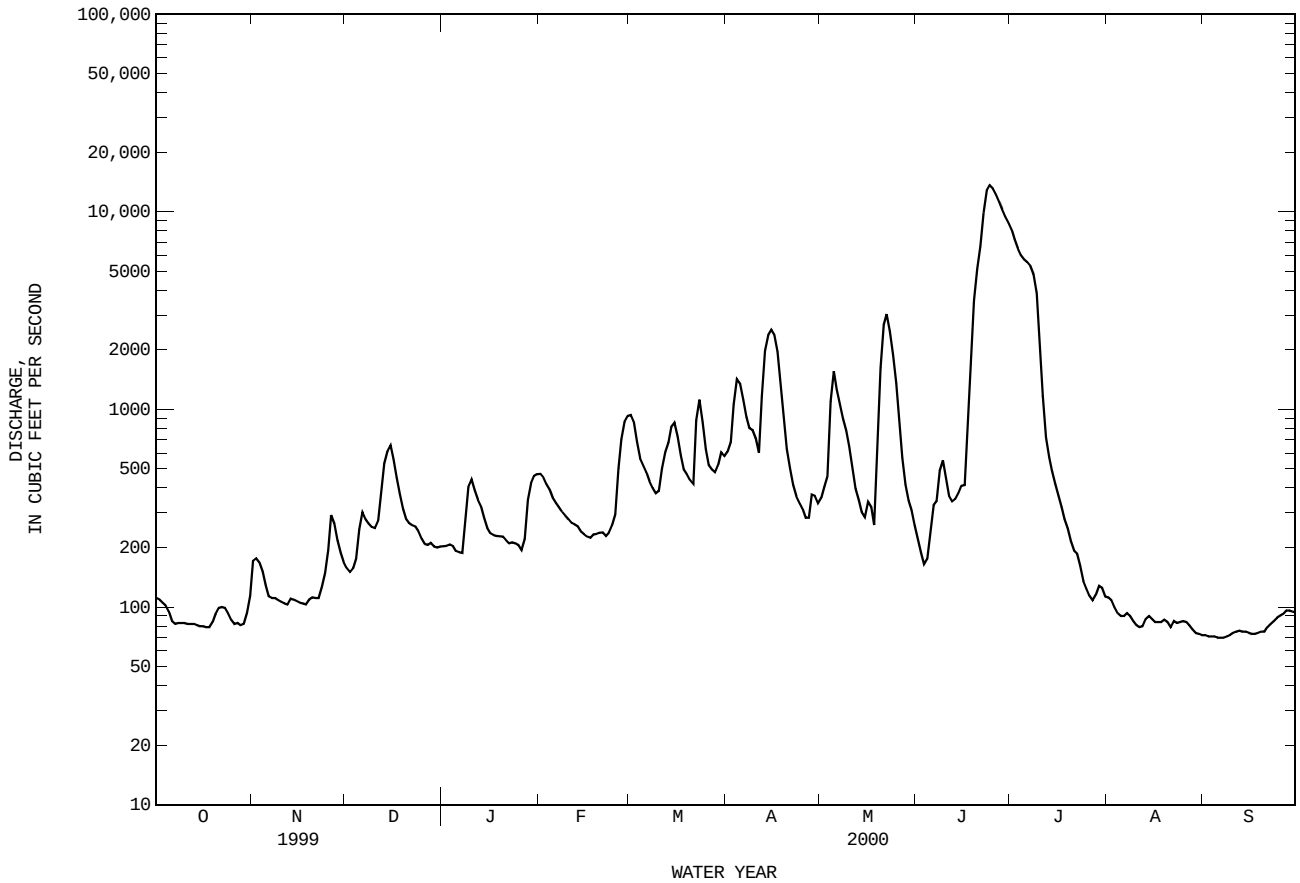
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2000z, BY WATER YEAR (WY)

MEAN	490	1292	2524	2135	2656	3346	2776	3900	1919	698	199	282
MAX	3361	7839	10580	8357	9664	9717	9644	17100	6745	4261	1291	2566
(WY)	1974	1975	1972	1998	1975	1992	1990	1966	1973	1994	1992	1974
MIN	29.4	86.9	101	199	174	204	241	181	49.0	17.9	18.1	27.0
(WY)	1964	1964	1966	1964	1996	1996	1971	1998	1971	1964	1964	1985

08020000 SABINE RIVER NEAR GLADEWATER, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1961 - 2000z	
ANNUAL TOTAL	591914		302354			
ANNUAL MEAN	1622		826		1849	
HIGHEST ANNUAL MEAN					3831	1992
LOWEST ANNUAL MEAN					209	1996
HIGHEST DAILY MEAN	8360	Feb 9	13600	Jun 24	51000	May 22 1989
LOWEST DAILY MEAN	55	Aug 24	70	Sep 5	7.4	Jul 20 1971
ANNUAL SEVEN-DAY MINIMUM	59	Aug 21	71	Sep 2	9.5	Jul 16 1971
INSTANTANEOUS PEAK FLOW			13800	Jun 24	52300	May 22 1989
INSTANTANEOUS PEAK STAGE			33.83	Jun 24	38.98	Apr 30 1966
ANNUAL RUNOFF (AC-FT)	1174000		599700		1339000	
10 PERCENT EXCEEDS	5880		1350		5430	
50 PERCENT EXCEEDS	599		254		532	
90 PERCENT EXCEEDS	84		82		61	

z Period of regulated streamflow.



08020450 SABINE RIVER ABOVE LONGVIEW, TX
(Low-flow/partial-record station)

LOCATION.--Lat 32°28′47", long 94°48′15", Gregg County, Hydrologic Unit 12010002, on left bank at city of Longview pumping station at the end of Swinging Bridge Road, 1.4 mi southwest of the intersection of Swinging Bridge Road and Farm Road 2206 in Longview, 2.5 mi downstream from Hawkins Creek, 2.6 mi upstream from U.S. Highway 259, and at mile 357.4.

DRAINAGE AREA.--2,943 mi^2.

PERIOD OF RECORD.--Aug 1983 to current year (discharges below 500 ft^3/s).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 230.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Daily discharges below 500 ft^3/s are published. Since installation of gage in Aug 1983, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft). Additional regulation by Lake Fork Reservoir (station 08018800, conservation pool storage 635,200 acre-ft) and by five tributary reservoirs with a combined capacity of 42,370 acre-ft. There are many diversions above station for municipal and industrial supply, and for oil field operations. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 31.64 ft May 10, 1990; minimum daily discharge, 0.50 ft^3/s Sep 4, 1985.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	121	98	172	185	436	---	---	403	248	---	125	69
2	115	151	161	185	427	---	---	449	209	---	116	70
3	106	144	162	183	398	---	---	---	188	---	106	65
4	101	133	178	184	366	---	---	---	172	---	98	62
5	121	120	217	181	340	---	---	---	217	---	92	61
6	113	113	258	173	310	493	---	---	283	---	88	61
7	106	98	281	168	290	459	---	---	328	---	84	59
8	122	89	260	229	271	421	---	---	351	---	82	63
9	127	95	257	356	254	398	---	---	491	---	80	64
10	128	78	257	399	244	390	---	---	494	---	74	70
11	124	86	255	389	233	479	---	---	424	---	52	75
12	126	83	404	333	229	---	---	462	429	---	60	87
13	125	87	---	297	225	---	---	406	361	---	73	101
14	116	97	---	269	217	---	---	348	356	---	86	91
15	104	95	---	227	204	---	---	301	375	---	96	74
16	99	94	---	208	200	---	---	297	390	492	84	74
17	94	87	483	204	200	---	---	327	---	431	81	67
18	88	88	401	200	207	---	---	286	---	385	80	64
19	92	90	352	201	216	---	---	---	---	338	79	64
20	87	93	299	200	213	470	---	---	---	306	82	64
21	86	90	265	192	211	442	---	---	---	250	83	69
22	93	100	246	189	211	---	---	---	---	217	83	79
23	96	112	236	185	212	---	441	---	---	196	96	83
24	98	138	231	187	224	---	403	---	---	166	85	93
25	84	166	222	184	266	---	378	---	---	155	85	106
26	80	216	207	179	---	---	352	---	---	144	88	115
27	59	270	196	185	---	---	343	---	---	131	81	117
28	44	240	195	294	---	---	412	---	---	121	83	120
29	52	205	194	386	---	---	439	414	---	138	81	120
30	68	185	187	415	---	---	415	352	---	169	70	109
31	83	---	184	428	---	---	---	304	---	143	73	---
TOTAL	3058	3741	---	7595	---	---	---	---	---	---	2626	2416
MEAN	98.6	125	---	245	---	---	---	---	---	---	84.7	80.5
MAX	128	270	---	428	---	---	---	---	---	---	125	120
MIN	44	78	---	168	---	---	---	---	---	---	52	59
AC-FT	6070	7420	---	15060	---	---	---	---	---	---	5210	4790

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08020900 SABINE RIVER BELOW LONGVIEW, TX

LOCATION.--Lat 32°25′00", long 94°42′33", Gregg County, Hydrologic Unit 12010002, on downstream side of Highway 149 bridge, 5 mi south of Longview, 14 mi northwest of Tatum.

DRAINAGE AREA.--3,155 mi^2.

PERIOD OF RECORD.--Oct 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 220.00 ft above sea level. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in Oct 1995, at least 10% of contributing drainage area has been regulated by seven upstream reservoirs, with a combined capacity of 1,654,000 acre-ft. There are several diversions above this station for municipal, industrial and for oil field operations. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from a 9.70 mi^2 area in the Mill Creek drainage basin. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

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

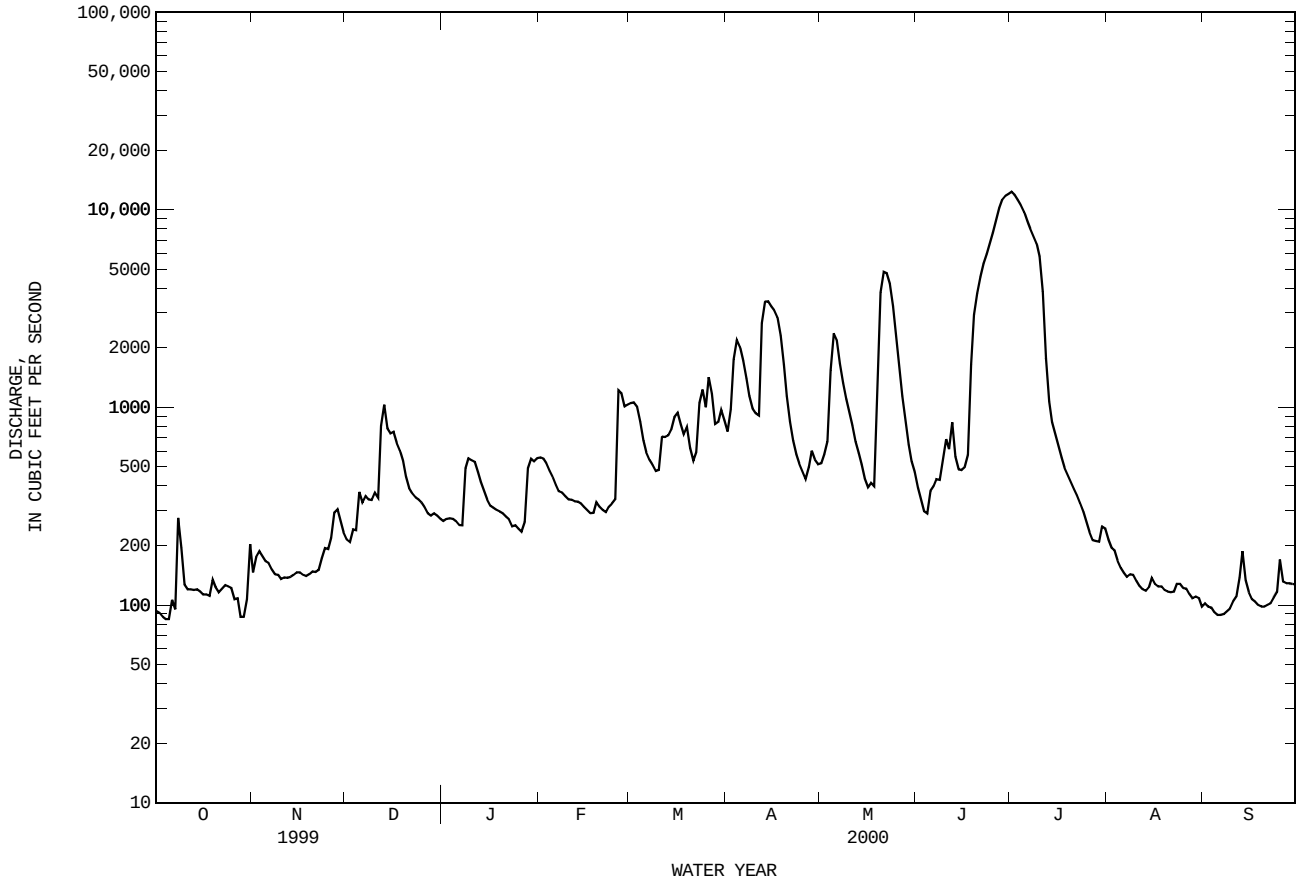
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	93	146	215	265	558	1050	753	521	391	12300	215	102
2	91	175	208	273	550	1060	977	577	338	11900	195	98
3	87	187	241	275	521	1010	1750	672	298	11200	189	97
4	85	176	239	272	478	845	2200	1540	290	10500	167	92
5	85	166	372	265	444	679	2020	2370	377	9710	154	89
6	106	163	330	254	405	592	1720	2200	398	8810	145	89
7	95	151	355	253	375	543	1400	1660	432	8020	139	90
8	276	143	342	491	370	511	1140	1330	430	7350	143	93
9	195	142	340	552	355	477	987	1100	540	6720	142	96
10	127	135	370	539	342	482	934	945	689	5790	132	104
11	120	138	349	529	341	710	907	810	613	3850	125	110
12	120	137	806	470	335	708	2670	669	840	1770	120	138
13	119	139	1030	418	333	721	3430	585	561	1070	118	187
14	120	142	783	377	326	771	3440	514	486	841	123	133
15	117	146	738	341	314	892	3240	435	482	730	137	116
16	113	146	752	317	303	937	3100	393	498	637	128	107
17	113	142	661	310	291	815	2850	413	575	555	124	104
18	111	140	604	302	293	730	2310	398	1640	494	124	100
19	134	143	535	297	331	794	1640	964	2940	455	119	98
20	123	148	445	290	314	621	1140	3820	3770	420	117	98
21	116	147	390	280	303	537	847	4840	4570	385	116	100
22	121	150	366	271	295	591	677	4780	5340	359	117	102
23	126	172	350	250	314	1050	576	4220	5970	327	128	109
24	124	194	342	253	326	1230	519	3250	6710	296	128	116
25	122	192	329	243	342	1000	474	2350	7640	262	122	170
26	107	218	312	235	1220	1420	434	1670	8820	234	121	131
27	108	294	290	263	1180	1170	498	1140	10200	213	114	129
28	87	305	283	491	1010	821	603	843	11200	211	108	129
29	87	264	290	550	1030	842	544	648	11700	209	110	128
30	107	233	283	534	---	966	516	534	12000	249	108	127
31	203	---	272	554	---	859	---	470	---	244	98	---
TOTAL	3738	5174	13222	11014	13599	25434	44296	46661	100738	106111	4126	3382
MEAN	121	172	427	355	469	820	1477	1505	3358	3423	133	113
MAX	276	305	1030	554	1220	1420	3440	4840	12000	12300	215	187
MIN	85	135	208	235	291	477	434	393	290	209	98	89
AC-FT	7410	10260	26230	21850	26970	50450	87860	92550	199800	210500	8180	6710

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2000, BY WATER YEAR (WY)

MEAN	797	992	2364	3189	3405	4161	2501	2026	1828	1049	208	357
MAX	2905	3519	7498	9715	5874	12120	6302	5846	3986	3423	491	1008
(WY)	1999	1999	1999	1998	1997	1997	1997	1997	1999	2000	1997	1998
MIN	121	151	287	340	236	260	533	324	184	48.5	66.0	113
(WY)	2000	1996	1996	1996	1996	1996	1996	1998	1998	1998	1998	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1996 - 2000	
ANNUAL TOTAL	677917		377495			
ANNUAL MEAN	1857		1031		1901	
HIGHEST ANNUAL MEAN					3115	1997
LOWEST ANNUAL MEAN					294	1996
HIGHEST DAILY MEAN	10300	Feb 1	12300	Jul 1	16600	Mar 2 1997
LOWEST DAILY MEAN	63	Aug 23	85	Oct 4	23	Aug 1 1998
ANNUAL SEVEN-DAY MINIMUM	69	Aug 18	92	Oct 1	26	Jul 28 1998
INSTANTANEOUS PEAK FLOW			12400	Jul 1	16600	Mar 2 1997
INSTANTANEOUS PEAK STAGE			28.98	Jul 1	32.40	Mar 2 1997
ANNUAL RUNOFF (AC-FT)	1345000		748800		1377000	
10 PERCENT EXCEEDS	5800		2320		6120	
50 PERCENT EXCEEDS	803		342		480	
90 PERCENT EXCEEDS	97		112		100	

08020900 SABINE RIVER BELOW LONGVIEW, TX--Continued



08022040 SABINE RIVER NEAR BECKVILLE, TX

LOCATION.--Lat 32°19'38", long 94°21'12", Panola County, Hydrologic Unit 12010002, on downstream side of highway embankment near right end of downstream bridge on U.S. Highway 59, 0.9 mi upstream from Eightmile Creek, 6.0 mi upstream from Farm Road 1794, 8.4 mi northeast of Beckville, 12.4 mi downstream from State Highway 43 and at mile 327.0.

DRAINAGE AREA.--3,589 mi^2.

PERIOD OF RECORD.--Oct 1938 to current year. Prior to Oct 1978, published as "near Tatum" (station 08022000).
Water-quality records.--Chemical data: Feb 1952 to Mar 1999. Biochemical data: Jan 1968 to Mar 1999. Pesticide data: Mar 1968 to Jun 1981. Specific conductance: Feb 1952 to Sep 1998. Water temperature: Feb 1952 to Sep 1998.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.00 ft above sea level. Prior to Oct 1, 1978, at site 12.4 mi upstream at datum 14.18 ft higher. Prior to Sep 21, 1945, nonrecording gage. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,130 acre-ft). Seven major upstream reservoirs with a combined capacity of more than 1,600,000 acre-ft now regulate flow. There are several diversions above this station and below Lake Tawakoni for municipal, industrial and oil field operations. Low flows are sustained by wastewater effluents that are returned to the river above the station. Flow may also be slightly affected at times by discharge from one floodwater retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from 9.70 mi^2 in the Mill Creek drainage basin. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1939-60) prior to regulation by Lake Tawakoni, 2,663 ft^3/s (1,929,000 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD PRIOR TO REGULATION (WATER YEARS 1939-60).--Maximum discharge, 123,000 ft^3/s Apr 4, 1945 (gage height, 33.80 ft), site and datum then in use, from graph based on gage readings, from rating curve extended above 66,000 ft^3/s on basis of partly estimated discharge measurement of 88,900 ft^3/s; minimum observed, 2.4 ft^3/s Aug 11, 1964. Maximum stage since at least 1884, that of Apr 4, 1945.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of about 2 ft lower than flood of Apr 4, 1945. These dates and gage heights are based on information for Sabine River near Tatum (station 08022000) and Sabine River at Logansport, La. (station 08022500).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	87	239	292	372	541	1120	1310	635	931	10700	204	71
2	75	232	276	355	545	1110	1240	668	629	11200	192	72
3	74	202	257	391	581	1080	2000	815	490	11400	187	78
4	85	205	295	392	522	1100	3260	1730	423	11200	180	76
5	82	186	422	391	444	917	3250	5420	1100	10800	176	69
6	70	197	508	337	400	722	2510	5590	2720	10000	176	65
7	77	199	381	326	355	631	1990	3560	1680	9210	172	72
8	120	188	361	381	327	586	1610	2340	783	8350	166	83
9	319	165	354	511	330	564	1330	1840	708	7490	159	103
10	320	168	369	461	322	553	1150	1500	827	6770	150	114
11	175	177	402	395	315	655	1080	1310	1070	6200	130	106
12	139	176	448	373	297	905	2270	1130	1300	5720	111	105
13	129	176	1110	322	283	816	4690	977	1380	5360	103	126
14	114	158	1160	280	292	800	4840	937	1080	4780	85	164
15	102	161	913	238	297	864	4140	784	904	4160	103	141
16	109	219	863	208	288	1040	3590	654	774	3630	128	134
17	116	200	863	202	282	1070	3290	604	725	3090	116	114
18	110	177	807	207	267	924	2880	578	1010	2590	108	92
19	99	162	763	202	290	974	2300	613	2430	2140	113	83
20	120	180	679	196	326	1010	1670	3110	3360	1680	127	83
21	122	190	531	182	307	859	1290	5990	3850	1170	120	92
22	108	197	448	169	294	812	997	6490	4410	786	114	108
23	97	185	424	180	282	1030	818	5570	5040	545	107	114
24	106	183	410	183	304	1370	698	4670	5450	384	119	105
25	143	228	402	184	338	1310	648	3650	5980	298	148	101
26	148	240	398	174	532	1400	570	2770	6730	263	124	151
27	125	259	400	168	1470	2080	510	2060	7520	250	106	146
28	103	307	361	260	1260	2010	720	1640	8560	244	99	115
29	97	316	359	500	1090	1650	838	1490	9570	240	94	107
30	107	302	382	526	---	1770	697	1290	10200	231	89	114
31	142	---	378	509	---	1830	---	1140	---	224	81	---
TOTAL	3820	6174	16016	9575	13181	33562	58186	71555	91634	141105	4087	3104
MEAN	123	206	517	309	455	1083	1940	2308	3054	4552	132	103
MAX	320	316	1160	526	1470	2080	4840	6490	10200	11400	204	164
MIN	70	158	257	168	267	553	510	578	423	224	81	65
AC-FT	7580	12250	31770	18990	26140	66570	115400	141900	181800	279900	8110	6160

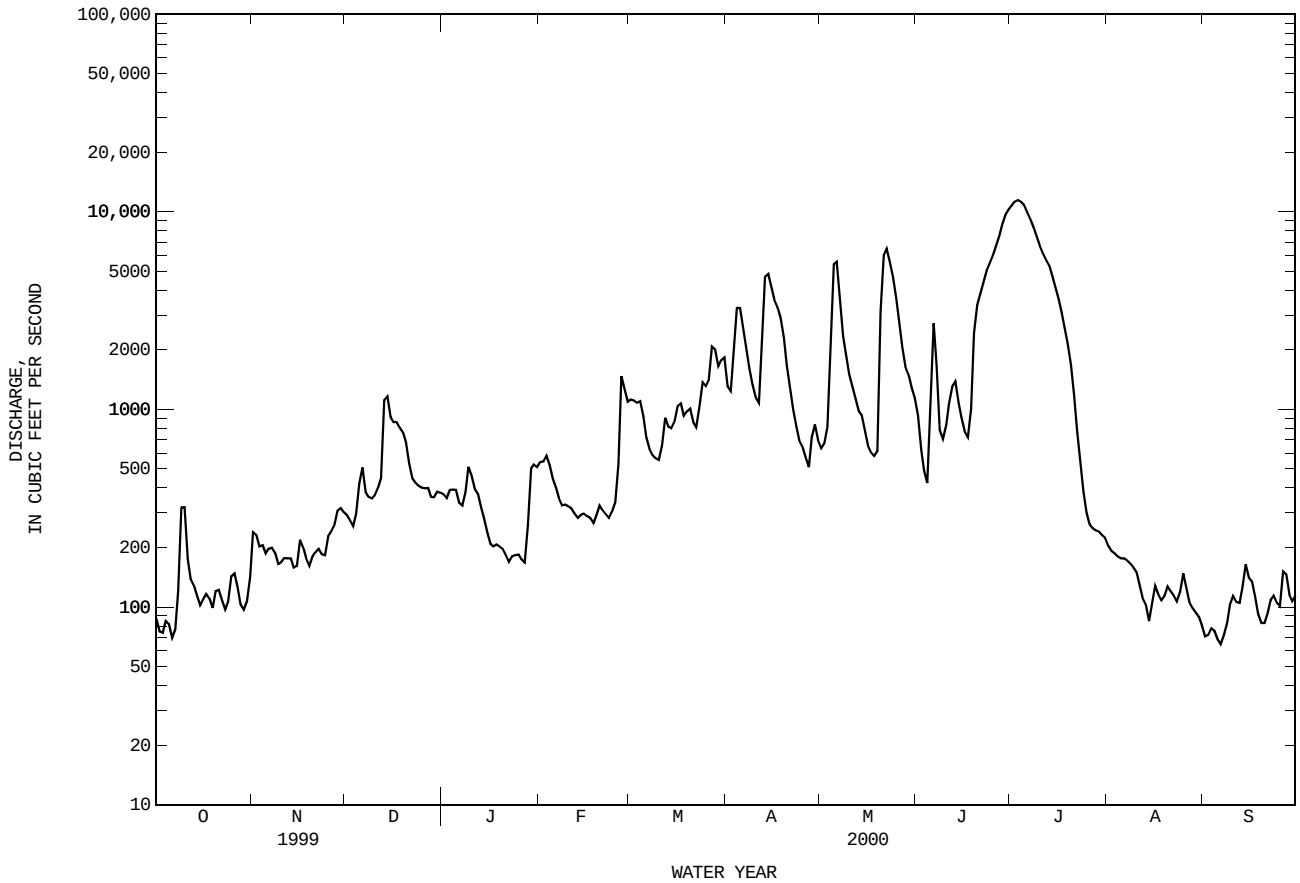
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2000, BY WATER YEAR (WY)

MEAN	669	1656	3239	3292	4005	4486	3934	4685	2809	1027	315	433
MAX	4325	8221	9866	10960	11930	13180	11330	21010	11580	4552	1725	3434
(WY)	1974	1975	1975	1992	1975	1997	1990	1966	1989	2000	1979	1974
MIN	42.5	82.1	144	239	322	317	355	317	77.5	32.1	36.7	33.8
(WY)	1964	1964	1966	1964	1996	1996	1971	1972	1971	1964	1969	1985

08022040 SABINE RIVER NEAR BECKVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1961 - 2000z	
ANNUAL TOTAL	925846		451999			
ANNUAL MEAN	2537		1235		2539	
HIGHEST ANNUAL MEAN					4857	1992
LOWEST ANNUAL MEAN					311	1964
HIGHEST DAILY MEAN	14200	Jan 1	11400	Jul 3	48100	May 2 1966
LOWEST DAILY MEAN	70	Oct 6	65	Sep 6	2.4	Aug 11 1964
ANNUAL SEVEN-DAY MINIMUM	79	Oct 1	72	Sep 1	3.8	Aug 7 1964
INSTANTANEOUS PEAK FLOW			11400	Jul 3	49400	May 2 1966
INSTANTANEOUS PEAK STAGE			24.75	Jul 3	38.87	Mar 30 1989
ANNUAL RUNOFF (AC-FT)	1836000		896500		1839000	
10 PERCENT EXCEEDS	7270		3600		7540	
50 PERCENT EXCEEDS	1110		388		870	
90 PERCENT EXCEEDS	119		106		92	

z Period of regulated streamflow.



08022060 MARTIN LAKE NEAR TATUM, TX

LOCATION.--Lat 32°15′42", long 94°34′23", Rusk County, Hydrologic Unit 12010002, on retaining wall, 30 ft to right of intake to generating plant No. 1, 1.9 mi upstream from Martin Dam on Martin Creek, 5.8 mi southwest of Tatum and 21.9 mi upstream from mouth.

DRAINAGE AREA.--130 mi^2.

PERIOD OF RECORD.--Apr 1974 to current year.
Water-quality records.--Chemical data: Oct 1974 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to May 15, 1976, non-recording gage near left end of dam 1.9 mi downstream at same datum. Satellite telemeter at station.

REMARKS.--Records good. The lake is formed by a rolled earthfill dam 8,675 ft long, including a 1,000-foot uncontrolled spillway. Deliberate impoundment began in Apr 1974. The uncontrolled spillway is an excavated channel cut through natural ground and located at the left end of the dam. The controlled spillway is a concrete ogee design with four 14.0- by 40.0-foot-wide tainter gates located near the left end of the dam. The low-flow outlet works consist of a 3.0- by 5.0-foot conduit with a sluice gate located in one of the gate piers. There is an 8-inch pipe with sluice gate. There are no known diversions. Conservation pool storage is 75,116 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	321.5
Crest of uncontrolled spillway	312.0
Top of gates	308.0
Crest of gated spillway	294.0
Lowest gated outlet (invert)	284.0

COOPERATION.--Capacity table provided by URS/Forrest and Cotton, Consulting Engineers for Texas Utilities Services, Inc.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 118,000 acre-ft, Mar 29, 1989, elevation, 313.00 ft; minimum contents since first appreciable storage, 45,230 acre-ft, Sep 18, 1996, elevation, 298.45 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 81,430 acre-ft, May 21, elevation, 306.77 ft; minimum contents, 59,040 acre-ft, Feb 23, 26, elevation, 302.00 ft.

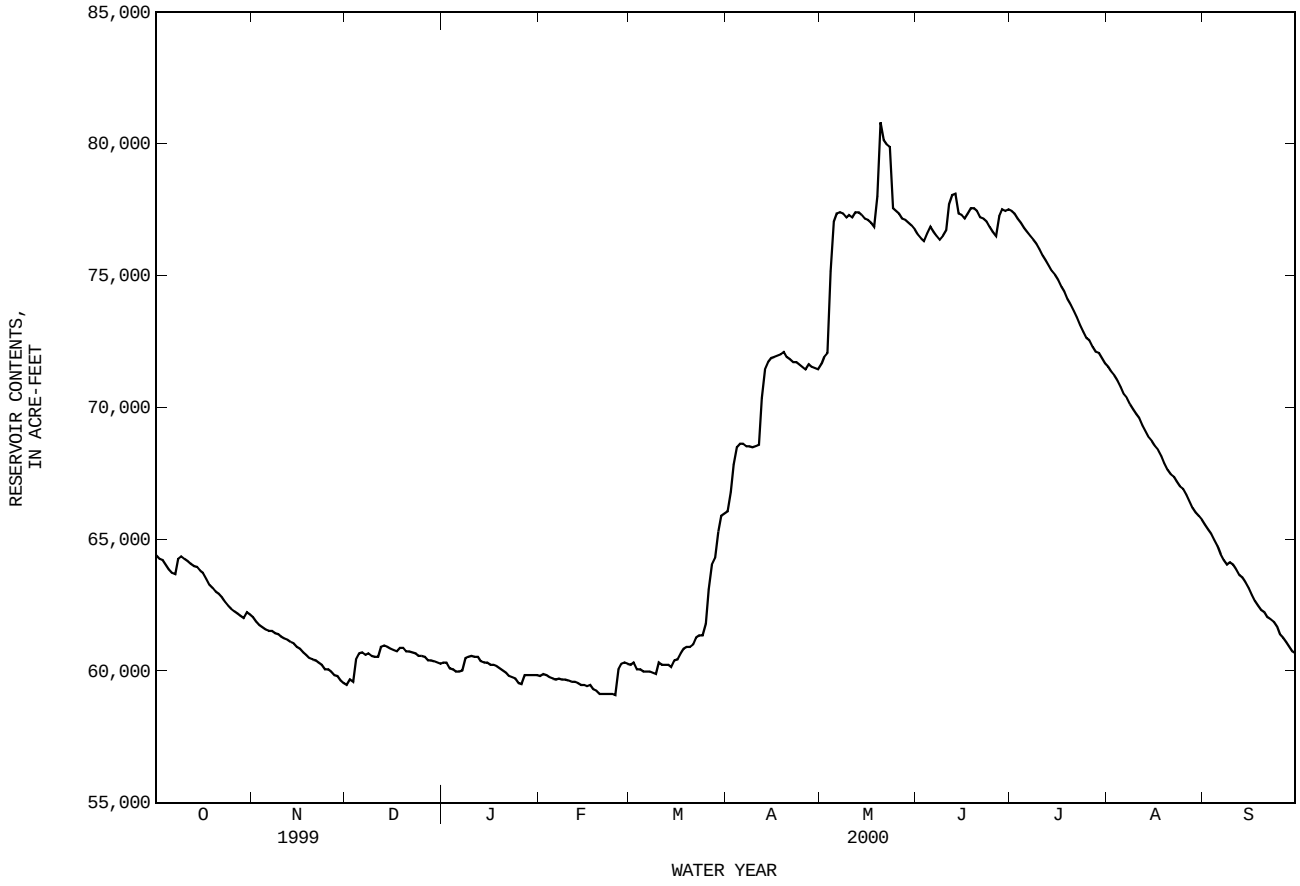
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64380	62040	59460	60310	59800	60230	66050	71630	76550	77450	71530	65550
2	64250	61870	59670	60310	59880	60310	66780	71910	76400	77350	71340	65370
3	64200	61740	59590	60100	59840	60060	67830	72060	76300	77150	71200	65190
4	64030	61650	60440	60060	59760	60060	68480	75160	76600	77000	71010	64970
5	63850	61560	60660	59970	59710	59970	68620	77050	76850	76800	70770	64740
6	63710	61520	60700	59970	59670	59970	68620	77350	76650	76650	70490	64430
7	63670	61520	60610	60010	59710	59970	68520	77400	76500	76500	70350	64200
8	64250	61430	60660	60480	59670	59930	68520	77350	76350	76350	70110	64030
9	64340	61390	60570	60530	59670	59880	68480	77200	76500	76200	69920	64110
10	64250	61300	60530	60570	59630	60310	68520	77300	76700	76000	69730	64030
11	64160	61220	60530	60530	59590	60230	68570	77200	77700	75760	69590	63850
12	64070	61170	60910	60530	59590	60230	70350	77400	78050	75560	69310	63630
13	63980	61090	60960	60360	59540	60230	71440	77400	78100	75360	69080	63540
14	63940	61040	60910	60310	59460	60140	71720	77300	77350	75160	68850	63360
15	63800	60910	60830	60310	59460	60400	71870	77150	77300	75020	68710	63140
16	63710	60830	60790	60230	59420	60440	71910	77100	77150	74820	68520	62870
17	63490	60700	60740	60230	59460	60660	71960	77000	77350	74570	68380	62660
18	63270	60610	60870	60180	59290	60830	72010	76850	77550	74380	68150	62480
19	63140	60480	60870	60100	59250	60910	72100	78000	77550	74090	67880	62310
20	63010	60440	60740	60010	59120	60910	71910	80810	77450	73890	67640	62220
21	62920	60400	60740	59930	59120	61000	71820	80140	77200	73650	67460	62040
22	62790	60310	60700	59800	59120	61260	71720	79980	77150	73410	67370	61960
23	62610	60230	60660	59760	59120	61350	71720	79880	77050	73120	67190	61870
24	62480	60060	60570	59710	59120	61350	71630	77550	76850	72870	67000	61690
25	62350	60060	60570	59540	59080	61780	71530	77450	76650	72630	66910	61390
26	62260	59970	60530	59500	60060	63100	71440	77350	76500	72540	66690	61260
27	62170	59840	60400	59840	60270	64030	71630	77150	77250	72300	66460	61090
28	62090	59800	60400	59840	60310	64290	71530	77100	77500	72100	66190	60910
29	62000	59630	60360	59840	60270	65280	71480	77000	77450	72060	66010	60740
30	62220	59540	60310	59840	---	65870	71440	76900	77500	71870	65870	60660
31	62130	---	60270	59840	---	65960	---	76750	---	71670	65740	---
MAX	64380	62040	60960	60570	60310	65960	72100	80810	78100	77450	71530	65550
MIN	62000	59540	59460	59500	59080	59880	66050	71630	76300	71670	65740	60660
(+)	302.72	302.12	302.29	302.19	302.29	303.58	304.76	305.85	306.00	304.81	303.53	302.38
(@)	-2390	-2590	+730	-430	+430	+5690	+5480	+5310	+750	-5830	-5930	-5080

CAL YR 1999 MAX 79070 MIN 59460 (@) -17180
WTR YR 2000 MAX 80810 MIN 59080 (@) -3860

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08022060 MARTIN LAKE NEAR TATUM, TX--Continued



08022200 MURVAUL LAKE NEAR GARY, TX

LOCATION.--Lat 32°02′04", long 94°25′15", Panola County, Hydrologic Unit 12010002, at outlet structure of Murvaul Lake Dam on Murvaul Bayou (tributary to Sabine River), 3.0 mi northwest of Gary, 9.0 mi southwest of Carthage.

DRAINAGE AREA.--115.0 mi^2.

PERIOD OF RECORD.--Apr 1999 to current year.

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

REMARKS.--No estimated daily contents. Records good. The dam is formed by a rolled earthfill structure 8,300 ft long with an uncontrolled broad-crested weir-type spillway, 270 ft in length, at right end of dam. The dam is the property of the Panola County Fresh Water Supply District No. 1, Carthage, and was built to impound water for municipal and industrial uses. Storage began in Nov 1957 and the lake level reached the service spillway elevation in May 1958. Conservation pool storage is 38,284 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	280.0
Top of design flood pool	275.0
Crest of spillway	265.3
Invert of lowest sluice gate	235.0

COOPERATION.--Capacity table was furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 42,600 acre-ft, May 21, 2000, elevation, 266.54 ft; minimum contents, 31,750 acre-ft, Sep 30, 2000, elevation, 263.31 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 42,100 acre-ft, Apr 6, elevation, 266.39 ft; minimum contents, 34,420 acre-ft, Sep 28, 30, elevation, 264.15 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 42,600 acre-ft, May 21, elevation, 266.54 ft; minimum contents, 31,750 acre-ft, Sep 30, elevation, 263.31 ft.

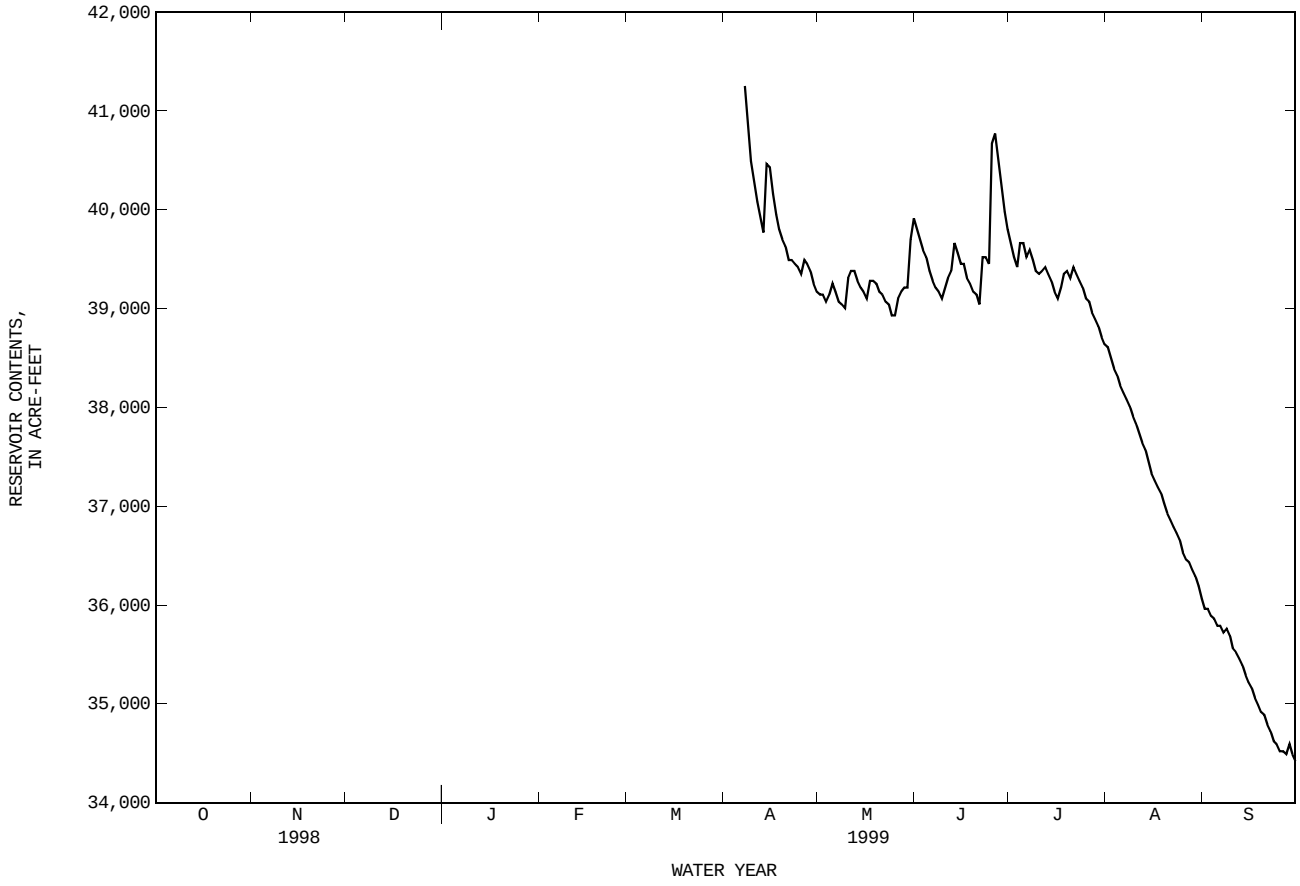
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	39140	39800	39660	38610	35960
2	---	---	---	---	---	---	---	39140	39700	39520	38500	35960
3	---	---	---	---	---	---	---	39070	39590	39420	38390	35890
4	---	---	---	---	---	---	---	39140	39520	39660	38320	35860
5	---	---	---	---	---	---	---	39250	39380	39660	38220	35790
6	---	---	---	---	---	---	---	39170	39280	39520	38150	35790
7	---	---	---	---	---	---	41250	39070	39210	39590	38080	35720
8	---	---	---	---	---	---	40810	39040	39170	39490	38010	35760
9	---	---	---	---	---	---	40490	39000	39100	39380	37910	35690
10	---	---	---	---	---	---	40290	39310	39210	39350	37840	35560
11	---	---	---	---	---	---	40080	39380	39310	39380	37740	35520
12	---	---	---	---	---	---	39910	39380	39380	39420	37640	35460
13	---	---	---	---	---	---	39770	39280	39660	39350	37570	35390
14	---	---	---	---	---	---	40460	39210	39560	39280	37460	35290
15	---	---	---	---	---	---	40430	39170	39450	39170	37330	35220
16	---	---	---	---	---	---	40160	39100	39450	39100	37260	35160
17	---	---	---	---	---	---	39950	39280	39310	39210	37190	35060
18	---	---	---	---	---	---	39800	39280	39250	39350	37130	34990
19	---	---	---	---	---	---	39700	39250	39170	39380	37030	34920
20	---	---	---	---	---	---	39630	39170	39140	39310	36930	34890
21	---	---	---	---	---	---	39490	39140	39040	39420	36860	34790
22	---	---	---	---	---	---	39490	39070	39520	39350	36790	34720
23	---	---	---	---	---	---	39450	39040	39520	39280	36730	34620
24	---	---	---	---	---	---	39420	38930	39450	39210	36660	34590
25	---	---	---	---	---	---	39350	38930	40670	39100	36530	34520
26	---	---	---	---	---	---	39490	39100	40770	39070	36460	34520
27	---	---	---	---	---	---	39450	39170	40490	38960	36430	34490
28	---	---	---	---	---	---	39380	39210	40230	38890	36360	34590
29	---	---	---	---	---	---	39250	39210	39980	38820	36290	34490
30	---	---	---	---	---	---	39170	39700	39800	38710	36190	34420
31	---	---	---	---	---	---	---	39910	---	38640	36060	---
MAX	---	---	---	---	---	---	---	39910	40770	39660	38610	35960
MIN	---	---	---	---	---	---	---	38930	39040	38640	36060	34420
(+)							265.55	265.76	265.73	265.40	264.64	264.15
(@)								+740	-110	-1160	-2580	-1640

WTR YR 1999 MAX 42100 MIN 34420

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08022200 MURVAUL LAKE NEAR GARY, TX--Continued



08022200 MURVAUL LAKE NEAR GARY, TX--Continued

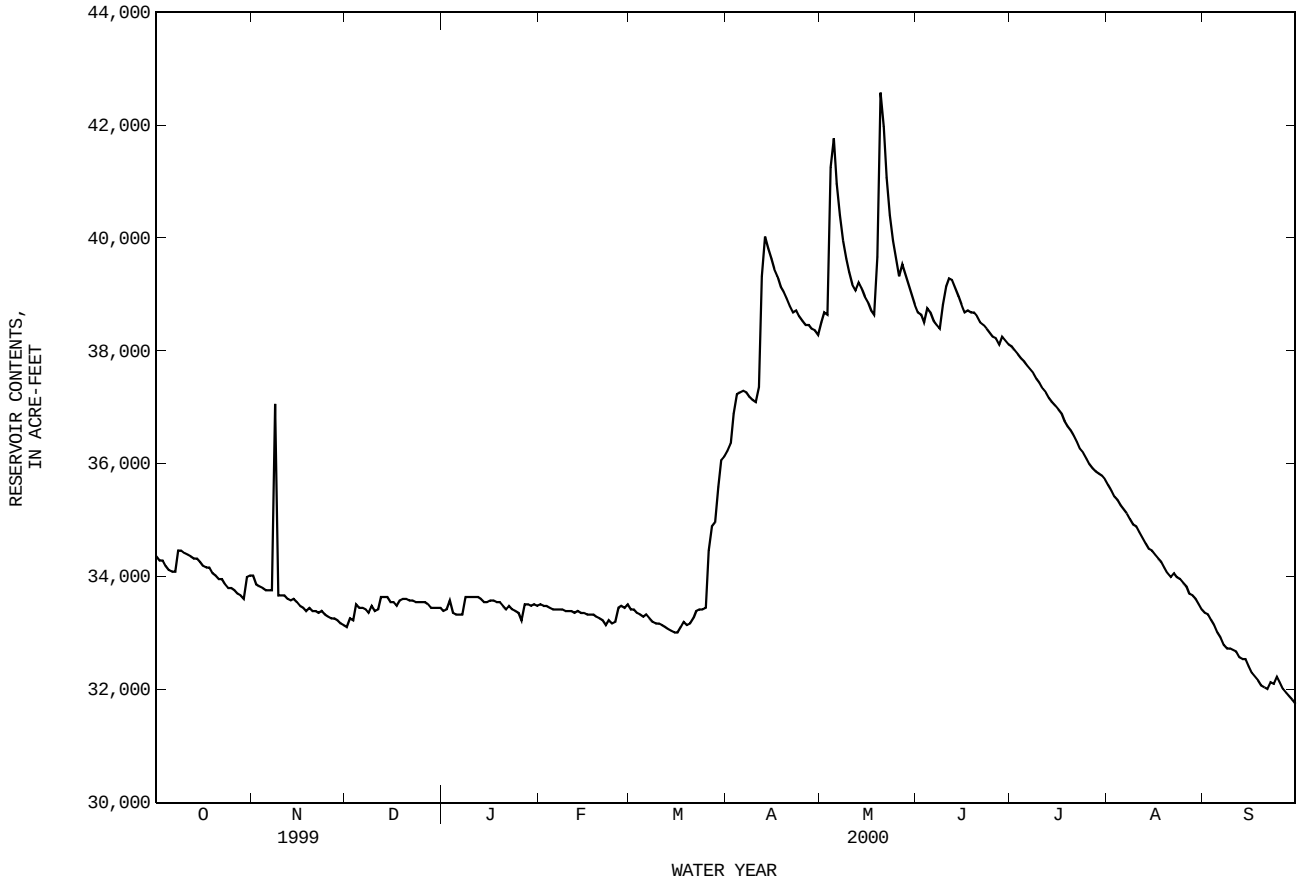
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34360	34020	33110	33390	33510	33420	36230	38500	38680	38080	35620	33360
2	34290	33860	33260	33420	33480	33420	36360	38680	38640	38010	35520	33330
3	34290	33830	33230	33580	33480	33360	36890	38640	38500	37940	35420	33230
4	34190	33800	33510	33360	33450	33330	37230	41250	38750	37870	35360	33140
5	34120	33760	33450	33330	33420	33290	37260	41760	38680	37810	35260	33010
6	34090	33760	33450	33330	33420	33330	37290	40960	38530	37740	35190	32920
7	34090	33760	33420	33330	33420	33260	37260	40400	38460	37670	35120	32790
8	34460	37060	33360	33640	33420	33200	37190	39950	38390	37600	35020	32730
9	34460	33670	33480	33640	33390	33170	37130	39630	38820	37500	34920	32730
10	34420	33670	33390	33640	33390	33170	37090	39390	39140	37430	34890	32700
11	34390	33670	33420	33640	33390	33140	37360	39170	39280	37330	34790	32670
12	34360	33610	33640	33640	33360	33110	39320	39070	39250	37260	34690	32570
13	34320	33580	33640	33610	33390	33070	40020	39210	39110	37160	34590	32540
14	34320	33610	33640	33550	33360	33040	39810	39110	38960	37090	34490	32540
15	34260	33550	33550	33550	33360	33010	39630	38960	38820	37030	34460	32410
16	34190	33480	33550	33580	33330	33010	39450	38860	38680	36960	34390	32290
17	34160	33450	33480	33580	33330	33110	39320	38710	38710	36890	34320	32230
18	34160	33390	33580	33550	33330	33200	39140	38640	38680	36760	34260	32160
19	34060	33450	33610	33550	33290	33140	39040	39660	38680	36660	34160	32070
20	34020	33390	33610	33480	33260	33170	38930	42570	38610	36590	34060	32040
21	33960	33390	33580	33420	33230	33260	38790	41970	38500	36490	33990	32010
22	33960	33360	33580	33480	33140	33390	38680	41070	38460	36390	34060	32130
23	33860	33390	33550	33420	33230	33420	38710	40400	38390	36260	33990	32100
24	33800	33330	33550	33390	33170	33420	38610	39950	38320	36190	33960	32230
25	33800	33290	33550	33360	33200	33450	38530	39600	38250	36090	33890	32130
26	33760	33260	33550	33230	33450	34460	38460	39320	38220	35990	33830	32010
27	33700	33260	33510	33510	33480	34890	38460	39530	38110	35920	33700	31940
28	33670	33230	33450	33510	33450	34960	38390	39350	38250	35860	33670	31880
29	33610	33170	33450	33480	33510	35590	38360	39170	38180	35820	33610	31820
30	33990	33140	33450	33510	---	36060	38280	39000	38110	35790	33510	31750
31	34020	---	33450	33480	---	36130	---	38820	---	35720	33420	---
MAX	34460	37060	33640	33640	33510	36130	40020	42570	39280	38080	35620	33360
MIN	33610	33140	33110	33230	33140	33010	36230	38500	38110	35720	33420	31750
(+)	264.03	263.75	263.85	263.86	263.87	264.66	265.30	265.45	265.25	264.54	263.84	263.31
(@)	-400	-880	+310	+30	+30	+2620	+2150	+540	-710	-2390	-2300	-1670

WTR YR 2000 MAX 42570 MIN 31750 (@) -2670

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08022200 MURVAUL LAKE NEAR GARY, TX--Continued



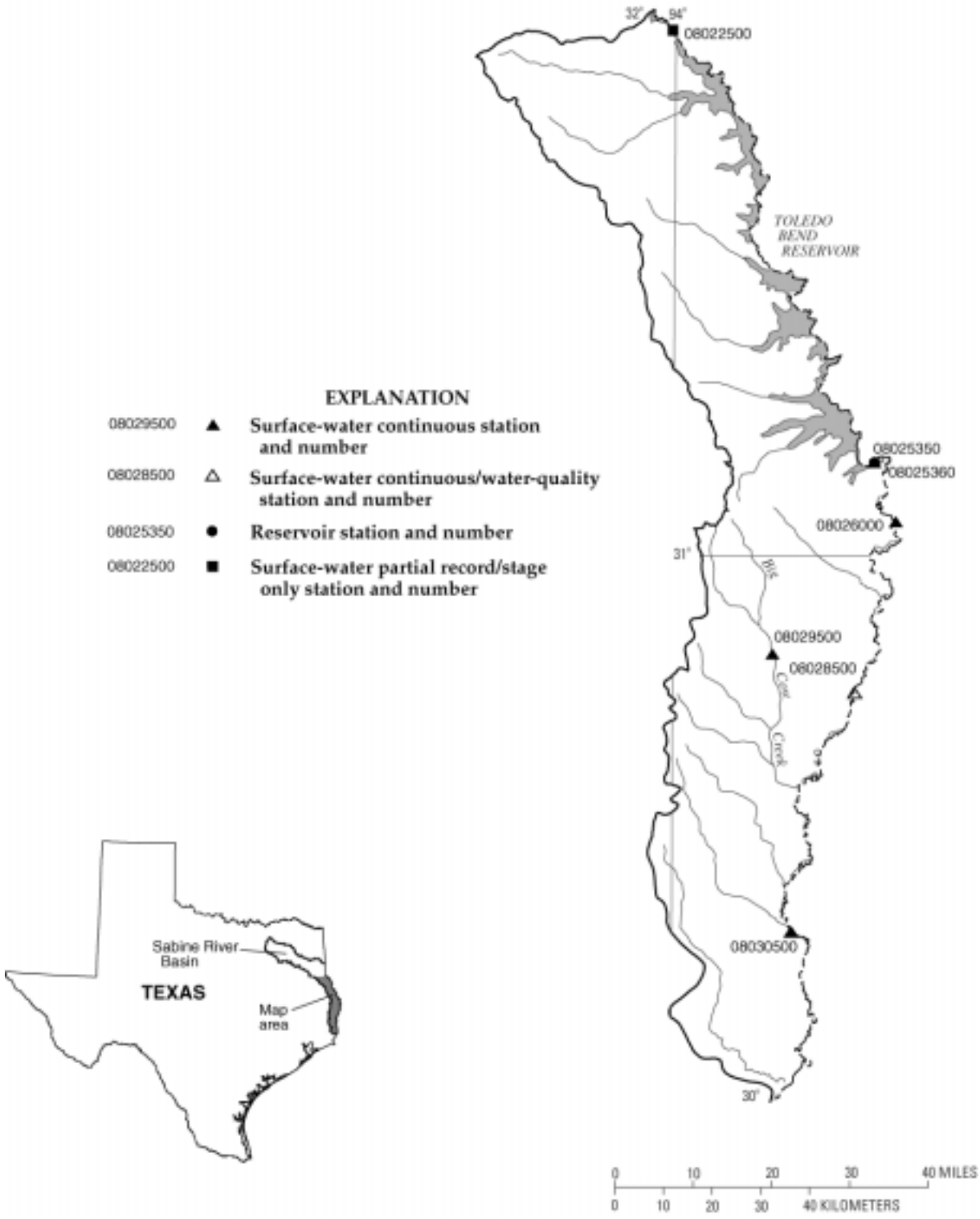


Figure 9.-- Map showing location of gaging stations in the second section of the Sabine River Basin

08022500 Sabine River at Logansport, LA 366
08025350 Toledo Bend Reservoir near Burkeville, TX 368
08025360 Sabine River at Toledo Bend Reservoir near Burkeville, TX 370
08026000 Sabine River near Burkeville, TX 372
08028500 Sabine River near Bon Weir, TX 374
08029500 Big Cow Creek near Newton, TX 378
08030500 Sabine River near Ruliff, TX 380

08022500 SABINE RIVER AT LOGANSPORT, LA

LOCATION.--Lat 31°58′20", long 94°00′22", De Soto Parish, Louisiana-Shelby County, Texas State line at Logansport, Hydrologic Unit 12010004, on left bank just upstream from bridge on U.S. Highway 84, 3 mi upstream from Bayou Castor, 111 mi upstream from Toledo Bend Dam and at mile 267.1.

DRAINAGE AREA.--4,842 mi^2.

PERIOD OF RECORD.--Jul 1903 to Feb 1968 (daily discharge), Mar 1968 to current year (gage height).
Water-quality records.--Specific conductance: 1939 to 1945. Water temperature: 1939 to 1945.

REVISED RECORDS.--WSP 1312: 1903-6 (monthly and annual means). WSP 1732: 1929(M), 1933(M).

GAGE.--Water-stage recorder. Datum of gage is 147.72 ft above sea level. Jul 1, 1903, to Sep 30, 1956, nonrecording gage. Oct 1, 1956, to Jan 16, 1964, water-stage recorder 4,600 ft upstream. Jan 16, 1964, to Dec 10, 1968, water-stage recorder 4,700 ft upstream. All gages to present datum except prior to Dec 31, 1906, when datum was 2.00 ft lower. Satellite telemeter at station.

REMARKS.--Records good. Station discontinued as a daily streamflow station on Mar 1, 1968, due to backwater from storage in Toledo Bend Reservoir. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (conservation pool storage 888,140 acre-ft) and three additional upstream reservoirs. Flow may also be slightly affected at times by discharge from one floodwater-retarding structure with a detention capacity of 3,570 acre-ft. This structure controls runoff from 9.70 mi^2 in the Mill Creek drainage basin. Numerous diversions above station for oil field operations, municipal and industrial uses.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--57 years (water years 1904-60), 3,325 ft^3/s (2,407,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1904-60).--Maximum discharge, 92,000 ft^3/s Apr 8, 1945 (gage height, 44.07 ft, from floodmark); minimum, 16 ft^3/s Sep 26-28, Oct 3, 4, 1939.

AVERAGE DISCHARGE FOR PERIOD AFTER REGULATION.--7 years (water years 1961-67), 2,252 ft^3/s (1,632,00 acre-ft/yr).

EXTREMES FOR PERIOD AFTER REGULATION (WATER YEARS, 1961-67).--Maximum gage height, 34.78 ft Apr 16. 1991; minimum since initial filling of Toledo Bend Reservoir in Jun 1968, 16.85 ft Nov 9, 1987. Maximum discharge, 46,800 ft^3/s May 6, 1966 (gage height, 38.46 ft); minimum, 25 ft^3/s Aug 13, 1964.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 39.4 ft at present site and datum. Stage determined from high-water mark.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 25.56 ft, Jul 10; minimum gage height, 17.39 ft, Mar 11.

GAGE HEIGHT, FEET, WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.02	18.72	18.33	18.56	18.04	18.00	19.86	22.13	23.76	24.91	23.11	21.13
2	18.99	18.52	18.77	18.45	18.04	18.46	20.70	22.33	23.67	25.07	22.99	20.96
3	18.97	18.71	18.67	18.24	18.05	17.63	21.41	22.45	23.61	25.19	23.15	20.97
4	18.90	18.73	18.30	18.24	17.96	18.02	21.70	23.45	23.87	25.26	22.90	20.93
5	18.91	18.61	18.12	18.35	18.05	18.05	21.93	24.29	23.76	25.36	22.79	20.80
6	18.85	18.56	18.36	18.25	18.09	18.11	21.85	24.49	23.90	25.40	22.81	20.52
7	18.95	18.52	18.53	18.24	18.01	18.25	21.37	24.59	23.99	25.39	22.76	20.50
8	18.95	18.51	18.40	18.28	18.15	18.19	21.13	24.59	23.82	25.46	22.63	20.47
9	18.98	18.55	18.16	18.24	18.28	18.06	21.46	24.14	23.73	25.52	22.50	20.80
10	18.99	18.45	18.41	18.28	18.15	18.17	21.35	23.64	23.71	25.48	22.42	20.65
11	18.95	18.46	18.32	18.35	17.91	18.01	21.03	23.61	23.65	25.26	22.49	20.37
12	18.95	18.49	18.10	18.32	18.21	18.19	22.17	23.46	23.66	24.98	22.37	20.47
13	18.93	18.51	18.47	18.22	18.00	18.22	22.95	23.26	---	24.57	22.29	20.27
14	18.93	18.46	18.29	18.30	18.00	18.39	23.11	23.34	23.86	24.21	22.35	20.20
15	18.95	18.44	18.43	18.33	18.16	18.52	23.10	23.36	23.83	24.18	22.25	20.11
16	18.88	18.45	18.45	18.30	18.05	18.39	23.02	23.48	23.93	24.17	22.05	20.04
17	18.80	18.43	18.41	18.27	18.18	18.44	22.68	23.72	23.95	24.09	22.11	20.04
18	18.83	18.72	18.57	18.20	17.48	18.76	22.56	23.26	23.67	24.13	21.94	20.03
19	18.85	18.39	18.45	17.97	18.04	18.83	22.80	23.15	23.81	23.97	21.87	20.13
20	18.82	18.43	18.25	18.12	18.07	18.89	22.19	23.85	23.97	23.86	21.81	19.83
21	18.82	18.55	18.42	18.56	18.09	18.88	22.20	24.18	23.89	23.76	21.68	19.80
22	18.67	18.44	18.40	18.10	18.36	19.07	22.35	24.42	23.96	23.82	21.83	19.93
23	18.76	17.99	18.41	17.91	18.03	19.31	22.32	24.71	24.04	23.75	21.66	20.06
24	18.75	18.26	18.35	18.21	18.16	19.15	22.20	24.91	24.17	23.68	21.58	19.61
25	18.71	18.40	18.41	17.92	18.17	19.15	22.20	24.85	24.25	23.44	21.46	19.45
26	18.67	18.37	18.36	18.06	17.95	19.42	22.19	24.68	24.27	23.38	21.47	19.57
27	18.68	18.48	18.12	18.24	18.07	19.77	22.01	24.14	24.31	23.47	21.47	19.50
28	18.67	18.34	18.36	17.86	18.31	20.21	22.16	23.95	24.35	23.35	21.31	19.46
29	18.76	18.21	18.36	17.96	18.29	20.11	22.11	23.91	24.47	23.19	21.18	19.36
30	18.84	18.34	18.44	18.10	---	19.87	22.38	23.80	24.68	23.29	21.11	19.40
31	18.82	---	18.32	18.11	---	20.03	---	23.78	---	23.14	21.05	---
MAX	19.02	18.73	18.77	18.56	18.36	20.21	23.11	24.91	---	25.52	23.15	21.13
MIN	18.67	17.99	18.10	17.86	17.48	17.63	19.86	22.13	---	23.14	21.05	19.36

CAL YR 1999 MAX 32.86 MIN 17.99
WTR YR 2000 MAX 25.52 MIN 17.48

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08025350 TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010004, in powerhouse at right end of Toledo Bend Dam on Sabine River, 15 mi northeast of Burkeville and at mile 156.5.

DRAINAGE AREA.--7,178 mi^2.

PERIOD OF RECORD.--Oct 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by Sabine River Authority of Texas). Prior to Jul 20, 1967, nonrecording gage at same site and datum. Jul 20, 1967, to Jun 30, 1973, recording gage at right end of spillway 1.6 mi north of present site and at same datum. Satellite telemeter at station.

REMARKS.--Records good. The reservoir is formed by a rolled earthfill dam. Closure of embankment completed and deliberate impoundment began Oct 3, 1966. The reservoir is operated for hydro-electric power generation and water conservation. Releases during high inflow periods are controlled by eleven 40 x 28-foot tainter gates. An 8.33 by 12-foot gated conduit through the dam is used for low-flow releases. Two additional 20-inch-diameter conduits, that bypass the larger conduit, may also be used for low-flow releases. Water for turbines is admitted through four 16.75 by 29-foot penstocks and controlled by vertically operated caterpillar-type gates. The capacity table is based on U.S. Geological Survey topographic maps. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400), conservation pool storage 888,130 acre-ft, Lake Fork Creek Reservoir (station 08018800), conservation pool storage 635,200 acre-ft, and by five tributary reservoirs with a combined total capacity of 42,370 acre-ft. There are many diversions above station for oil field operations and municipal supply. Conservation pool storage is 4,472,900 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	185.0
Design flood	175.3
Top of gates	173.0
Top of power drawdown storage (top of conservation pool)	172.0
Top of power head storage	162.2
Crest of spillway (controlled)	145.0
Lowest gated outlet (invert)	100.0

COOPERATION.--Capacity table furnished by the Sabine River Authority.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,840,000 acre-ft, May 18, 1989, elevation, 173.95 ft; minimum since initial filling of reservoir in Jun 1968, 3,290,000 acre-ft, Nov 14, 15, 1987 and Oct 20, 1994, elevation, 164.78 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,533,000 acre-ft, Jul 11, elevation, 172.31 ft; minimum contents, 3,410,000 acre-ft, Mar 10, elevation, 165.58 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

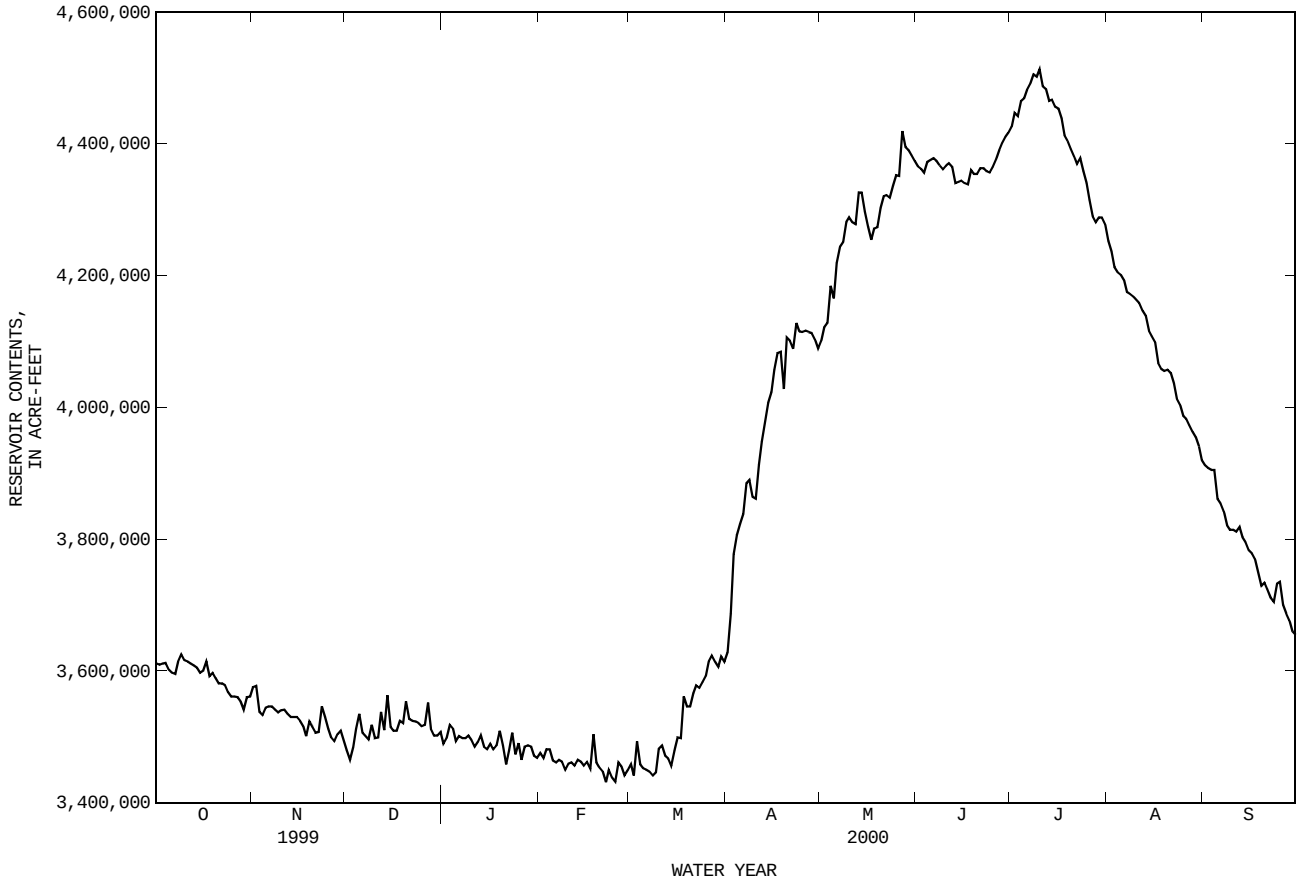
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3611000	3575000	3479000	3489000	3475000	3458000	3628000	4101000	e4366000	4426000	4252000	3912000
2	3609000	3577000	3465000	3498000	3468000	3441000	3687000	4121000	4362000	4447000	4236000	3908000
3	3611000	3538000	3484000	3518000	3481000	3493000	3777000	4128000	4356000	4442000	4213000	3905000
4	3612000	3533000	3512000	3512000	3481000	3458000	3806000	4184000	4372000	4465000	4205000	3905000
5	3602000	3544000	3535000	3493000	3464000	3452000	3823000	4165000	e4375000	4469000	4201000	3861000
6	3597000	3546000	3506000	3501000	3461000	3450000	3838000	4219000	e4378000	4482000	4193000	3854000
7	3595000	3546000	3501000	3498000	3465000	3447000	3885000	4243000	4374000	4491000	4175000	3842000
8	3614000	3541000	3496000	3498000	3462000	3441000	3890000	4250000	4367000	4505000	4172000	3821000
9	3625000	3537000	3518000	3502000	3450000	3446000	3864000	4281000	4361000	4502000	4168000	3814000
10	3616000	3540000	3498000	3495000	3459000	3482000	3861000	4288000	4367000	4513000	4163000	3814000
11	3614000	3541000	3499000	3485000	3461000	3487000	3913000	4281000	4370000	4487000	4158000	3811000
12	3611000	3535000	3538000	3492000	3456000	3471000	3948000	4278000	4365000	4483000	4147000	3818000
13	3608000	3530000	3510000	3502000	3465000	3467000	3977000	4326000	4340000	4465000	4139000	3803000
14	3605000	3530000	3563000	3485000	3462000	3456000	4007000	4326000	4342000	4467000	4116000	3795000
15	3597000	3530000	3515000	3481000	3456000	3479000	4023000	4297000	4344000	4456000	4108000	3783000
16	3600000	3524000	3509000	3489000	3462000	3499000	4057000	4274000	4340000	4453000	4099000	3778000
17	3614000	3516000	3509000	3481000	3452000	3498000	4082000	4254000	4338000	4438000	4067000	3770000
18	3592000	3501000	3524000	3487000	3504000	3561000	4084000	4271000	4360000	4413000	4058000	3750000
19	3597000	3523000	3521000	3509000	3461000	3546000	4028000	4273000	4354000	4404000	4055000	3729000
20	3589000	3515000	3554000	3487000	3453000	3546000	4106000	4302000	4354000	4392000	4057000	3734000
21	3581000	3506000	3527000	3458000	3447000	3566000	4101000	4320000	4363000	4381000	4052000	3724000
22	3581000	3507000	3524000	3479000	3431000	3578000	4089000	4322000	4363000	4369000	4036000	3711000
23	3578000	3546000	3523000	3506000	3450000	3574000	4128000	4318000	4358000	4378000	4013000	3705000
24	3568000	3530000	3521000	3473000	3438000	3583000	4115000	4336000	4356000	4358000	4004000	3732000
25	3561000	3512000	3516000	3490000	3432000	3592000	4114000	4352000	4365000	4340000	3987000	3735000
26	3561000	3499000	3518000	3465000	3461000	3614000	4116000	4351000	4376000	4315000	3982000	3700000
27	3560000	3493000	3552000	3485000	3455000	3623000	4114000	4419000	4390000	4290000	3973000	3687000
28	3554000	3504000	3512000	3487000	3441000	3614000	4113000	4395000	4401000	4281000	3963000	3676000
29	3541000	3509000	3502000	3485000	3449000	3606000	4103000	4390000	4410000	4288000	3955000	3660000
30	3560000	3495000	3502000	3471000	---	3622000	4089000	4383000	4417000	4288000	3941000	3655000
31	3561000	---	3507000	3468000	---	3614000	---	e4374000	---	4278000	3920000	---
MAX	3625000	3577000	3563000	3518000	3504000	3623000	4128000	4419000	4417000	4513000	4252000	3912000
MIN	3541000	3493000	3465000	3458000	3431000	3441000	3628000	4101000	4338000	4278000	3920000	3655000
(+)	166.57	166.14	166.22	165.97	165.84	166.91	169.80	171.43	171.67	170.89	168.80	167.17
(@)	-53000	-66000	+12000	-39000	-19000	+165000	+475000	+285000	+43000	-139000	-358000	-265000

CAL YR 1999 MAX 4800000 MIN 3465000 (@) -665000
WTR YR 2000 MAX 4513000 MIN 3431000 (@) +41000

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08025350 TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX--Continued



08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX

LOCATION.--Lat 31°10'25", long 93°33'57", Newton County, Hydrologic Unit 12010005, in powerhouse at right end of Toledo Bend Dam, 10 mi upstream from Sabine River near Burkeville gage and at mile 156.5.

DRAINAGE AREA.--7,178 mi^2.

PERIOD OF RECORD.--Oct 1971 to current year.
Water-quality records.--Chemical data: Oct 1967 to Sep 1986. Biochemical data: Oct 1967 to Sep 1986.

GAGE.--Water-stage recorders. Datum of gage is sea level (levels by Sabine River Authority). Satellite telemeter at station.

REMARKS.--Records fair. Daily discharges are a combination of releases from various outlets at the dam. Discharges for releases through the turbines are computed using scroll-case differential relationships and operation logs. Tainter gate releases, low-flow sluiceway releases, bypass gate releases, and turbine leakages are based on discharge measurements and operation logs. Since installation of gage in 1972, at least 10% of contributing drainage area has been regulated by Toledo Bend Reservoir (station 08025350, conservation pool storage 4,472,900 acre-ft).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	174	e634	1090	204	204	1130	204	4970	3270	160	5500	3740
2	174	795	314	204	1140	204	204	5190	2720	160	5460	160
3	174	994	1480	1100	186	1460	204	5090	160	5520	5700	160
4	732	438	336	204	1390	204	204	5020	160	160	5460	160
5	174	1420	204	1130	204	204	204	5210	2480	6160	160	7440
6	797	174	2340	204	204	1060	204	204	2580	5460	160	12300
7	174	174	204	1430	1190	204	204	204	2360	5490	5560	3850
8	993	1050	999	204	204	1220	204	5110	2550	160	5480	3900
9	174	174	204	204	1090	1120	204	5040	2460	160	2800	160
10	174	1370	1460	1350	204	2150	1170	5080	160	5480	2700	160
11	736	174	204	204	1530	204	204	5020	160	7220	5840	3800
12	174	1320	204	1140	204	204	1140	4930	2450	14200	160	3780
13	873	174	1120	204	204	1120	204	204	2470	13900	160	3840
14	174	174	204	1370	1170	204	1560	204	2490	14000	5430	3900
15	1020	1040	1100	204	204	1140	204	5150	2470	187	5340	4010
16	174	174	204	204	1160	204	204	5080	2580	160	5710	160
17	174	1250	1100	1130	204	1430	1140	5000	130	5530	5530	160
18	745	174	204	204	1360	204	204	4970	130	5450	5600	3880
19	174	1320	204	1170	204	204	5050	5000	2940	5520	160	3960
20	769	174	1140	204	204	1130	204	204	2810	5650	160	3850
21	174	174	204	1320	1040	204	1410	132	2520	6230	5720	3920
22	1260	1100	1120	204	204	1130	204	4980	2500	160	5690	3910
23	174	174	204	204	1050	204	204	5840	2490	160	5790	160
24	174	1120	1380	1130	204	1400	1080	2800	130	5740	6510	160
25	769	174	204	204	1380	204	204	3780	130	5490	4270	3900
26	174	1180	204	1170	204	204	972	3770	2490	5540	160	3960
27	769	174	1050	204	204	1130	1680	130	2500	5510	160	4010
28	154	174	204	1410	1090	204	1470	148	2450	5550	5590	3880
29	1290	979	929	204	204	1150	204	3080	3400	160	5650	3870
30	174	641	204	204	---	204	204	4820	5010	160	5540	160
31	174	---	1410	1130	---	1440	---	2520	---	5540	5590	---
TOTAL	14039	19087	21428	19652	18040	22474	20752	108880	61150	140967	123740	91300
MEAN	453	636	691	634	622	725	692	3512	2038	4547	3992	3043
MAX	1290	1420	2340	1430	1530	2150	5050	5840	5010	14200	6510	12300
MIN	154	174	204	204	186	204	204	130	130	160	160	160
AC-FT	27850	37860	42500	38980	35780	44580	41160	216000	121300	279600	245400	181100

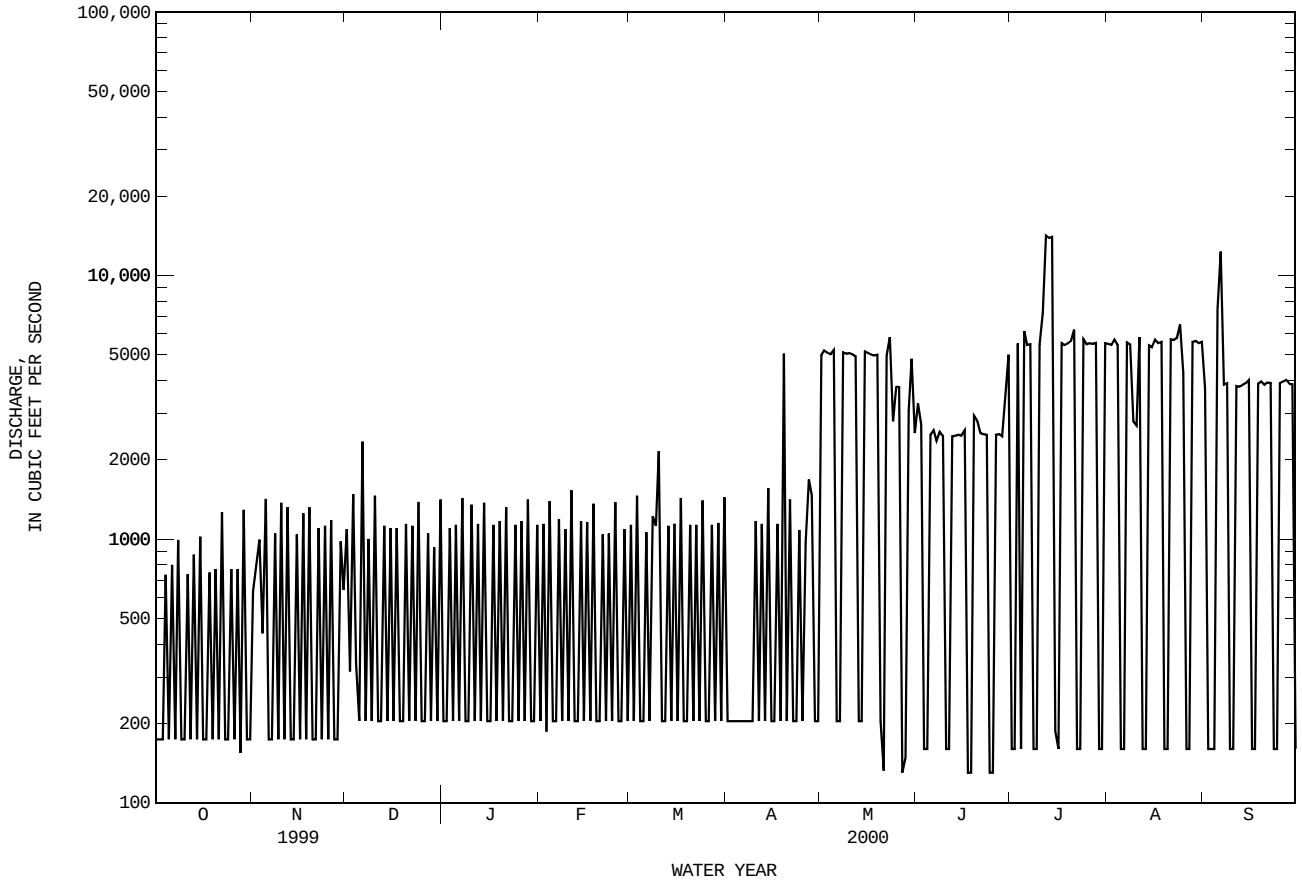
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1972 - 2000, BY WATER YEAR (WY)

MEAN	1193	2247	5474	9200	10100	10370	8057	7676	5785	4644	3654	2968
MAX	6809	13340	17720	27680	23850	28210	19270	22170	24960	18790	6732	7323
(WY)	1992	1995	1975	1974	1999	1997	1991	1991	1989	1989	1976	1991
MIN	59.0	50.7	74.5	90.0	339	231	247	311	508	493	470	424
(WY)	1976	1976	1976	1978	1981	1972	1978	1984	1996	1996	1996	1983

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1972 - 2000	
ANNUAL TOTAL	2380674		661509			
ANNUAL MEAN	6522		1807		5929	
HIGHEST ANNUAL MEAN					10370	1995
LOWEST ANNUAL MEAN					517	1996
HIGHEST DAILY MEAN	117000	Jan 31	14200	Jul 12	117000	Jan 31 1999
LOWEST DAILY MEAN	154	Oct 28	130	May 27	30	Oct 1 1972
ANNUAL SEVEN-DAY MINIMUM	204	Apr 21	204	Apr 1	34	Nov 21 1975
ANNUAL RUNOFF (AC-FT)	4722000		1312000		4295000	
10 PERCENT EXCEEDS	15200		5480		14900	
50 PERCENT EXCEEDS	4800		996		3750	
90 PERCENT EXCEEDS	174		160		144	

e Estimated

08025360 SABINE RIVER AT TOLEDO BEND RESERVOIR NEAR BURKEVILLE, TX--Continued



08026000 SABINE RIVER NEAR BURKEVILLE, TX

LOCATION.--Lat 31°03'50", long 93°31'10", Newton County, Texas-Vernon Parish, Louisiana State line, Hydrologic Unit 12010005, near left edge of low-water channel on downstream side of bridge on State Highway 63, about 200 ft downstream from Pearl Creek, 10 mi northeast of Burkeville, 16 mi downstream from Bayou Toro and at mile 139.7.

DRAINAGE AREA.--7,482 mi^2.

PERIOD OF RECORD.--Sep 1955 to current year. Published as "below Toledo Bend near Burkeville" for period 1955-75.
Water-quality records.--Chemical data: May 1968 to Sep 1986. Biochemical data: May 1968 to Sep 1986. Pesticide data: Oct 1972 to Sep 1981.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 60.59 ft above sea level. Prior to Aug 23, 1958, nonrecording gage at current site. Prior to Jan 1, 1989, at present site at datum 10.00 ft higher. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1961, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft) and three additional upstream reservoirs. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--5 years (water years 1956-60) prior to completion of Toledo Bend Reservoir, 5,179 ft^3/s (3,749,00 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS 1956-60).--Maximum discharge, 52,900 ft^3/s May 15, 1957 (gage height, 32.43 ft); minimum, 60 ft^3/s Sep 26-30, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1860: Flood in May 1884 reached a stage of 45.9 ft, current datum, from information by local resident. Flood of Apr 15, 1945, reached a stage of 45.8 ft, current datum. Flood of May 23, 1953, reached a stage of 45.3 ft, current datum, from floodmarks.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	835	277	557	1130	951	549	1050	2080	2230	2550	4740	3950
2	297	426	904	369	558	916	415	4720	2880	411	4790	1910
3	284	783	690	559	924	656	1850	5870	1460	2470	4830	291
4	446	764	1120	962	570	1040	2790	6170	377	2630	4890	240
5	548	1050	647	561	980	309	1830	7120	1140	2690	2530	2150
6	446	667	1560	928	271	475	1050	3950	2190	5000	329	11600
7	592	246	836	676	451	867	555	1070	2200	4700	2500	4440
8	603	412	549	1050	884	549	437	2520	2150	2600	4650	3370
9	725	827	907	372	467	1330	381	4490	2190	445	3480	2020
10	321	568	662	573	915	1430	564	4480	1400	2480	2340	378
11	469	994	1040	1110	676	1480	937	4480	371	4740	3830	1750
12	592	573	350	566	1060	627	567	4330	1100	11300	2590	3370
13	495	966	582	954	342	659	972	2660	2150	12100	316	3430
14	651	254	949	637	517	968	786	751	2140	12200	2460	3410
15	593	419	549	1030	934	589	1130	2430	2160	4680	4670	3430
16	687	827	964	362	927	988	405	4430	2180	408	4740	2020
17	285	472	667	547	564	662	553	4410	1470	2430	4770	336
18	429	1000	1110	964	627	1040	902	4380	357	4620	4770	1650
19	564	573	463	545	986	608	2010	4380	1350	4680	2600	3290
20	455	958	632	915	316	889	2750	2940	2210	4740	318	3390
21	586	255	1050	610	466	1080	794	1110	2350	4900	2500	3400
22	577	428	641	1040	875	645	1100	2540	2200	3010	4760	3440
23	910	869	988	344	520	976	417	4360	2190	343	4860	2000
24	284	467	715	511	920	688	632	3630	1410	2460	5000	344
25	452	886	1110	912	644	1060	970	2920	319	4790	4740	1690
26	611	493	383	531	1050	368	827	3230	1050	4800	2210	3330
27	461	885	531	945	361	611	1190	1980	2160	4770	311	3390
28	592	265	917	774	515	1070	1410	401	2190	4740	2510	3410
29	514	403	471	1110	912	656	1120	1640	2490	2580	4760	3410
30	951	1110	869	389	---	962	404	3190	3810	348	4820	1980
31	307	---	569	563	---	673	---	3130	---	2500	4850	---
TOTAL	16562	19117	23982	22539	20183	25420	30798	105792	53874	123115	107464	82819
MEAN	534	637	774	727	696	820	1027	3413	1796	3971	3467	2761
MAX	951	1110	1560	1130	1060	1480	2790	7120	3810	12200	5000	11600
MIN	284	246	350	344	271	309	381	401	319	343	311	240
AC-FT	32850	37920	47570	44710	40030	50420	61090	209800	106900	244200	213200	164300

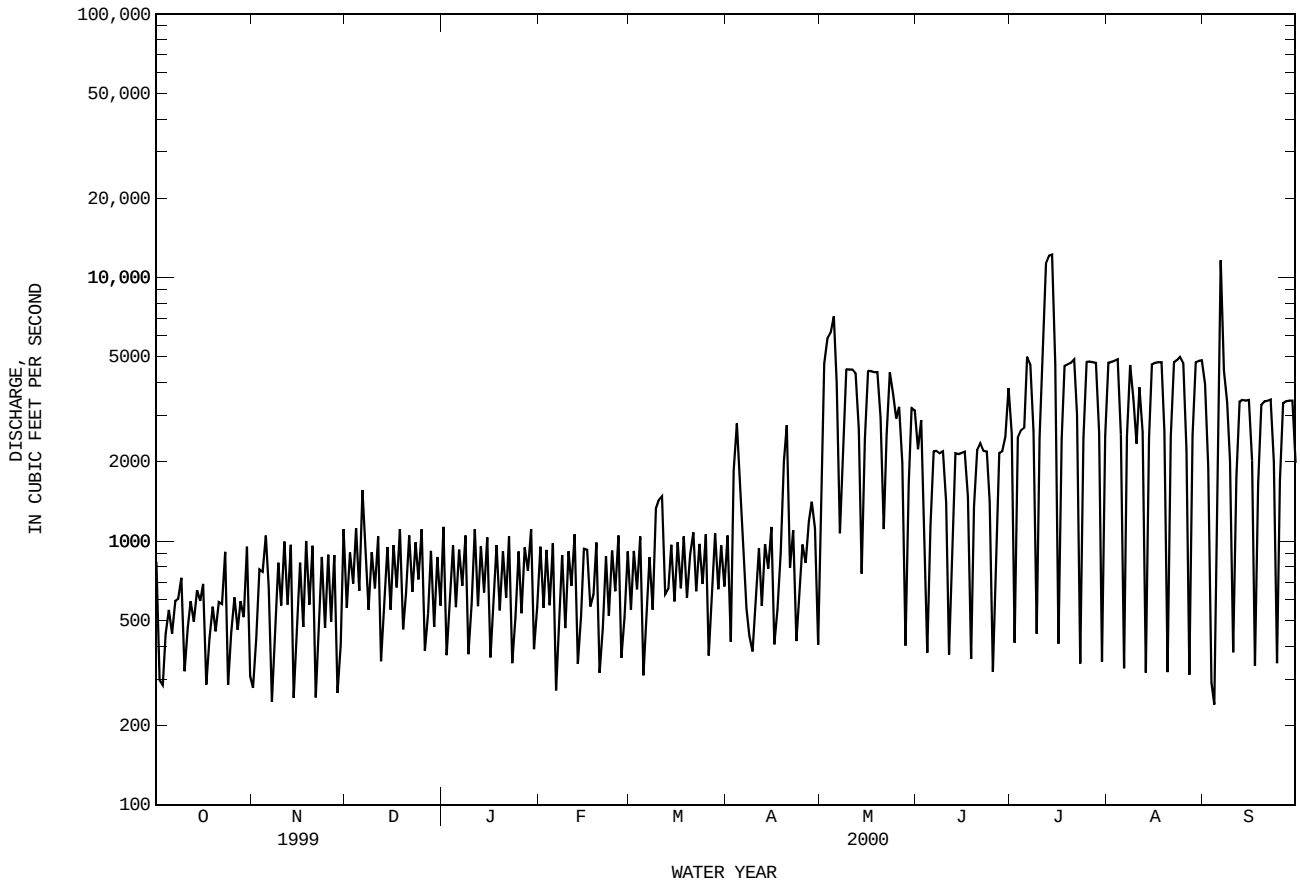
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 2000z, BY WATER YEAR (WY)

MEAN	1142	2004	5583	8294	9259	9712	8046	8043	5448	4007	2930	2652
MAX	6846	12880	17990	28510	27320	27000	26530	32070	25310	23750	6662	7099
(WY)	1992	1995	1962	1974	1999	1997	1969	1966	1989	1989	1976	1991
MIN	82.5	86.2	247	484	266	485	231	471	400	166	91.7	77.6
(WY)	1968	1968	1968	1968	1968	1968	1971	1967	1970	1964	1967	1967

08026000 SABINE RIVER NEAR BURKEVILLE, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1961 - 2000z	
ANNUAL TOTAL	2372831		631665			
ANNUAL MEAN	6501		1726		5577	
HIGHEST ANNUAL MEAN					11190	1995
LOWEST ANNUAL MEAN					548	1967
HIGHEST DAILY MEAN	117000	Feb 1	12200	Jul 14	117000	Feb 1 1999
LOWEST DAILY MEAN	246	Nov 7	240	Sep 4	38	Sep 14 1967
ANNUAL SEVEN-DAY MINIMUM	459	Oct 2	459	Oct 2	41	Sep 9 1967
INSTANTANEOUS PEAK FLOW			12600	Sep 6	124000	Feb 1 1999
INSTANTANEOUS PEAK STAGE			25.71	Sep 6	48.05	Feb 1 1999
ANNUAL RUNOFF (AC-FT)	4707000		1253000		4040000	
10 PERCENT EXCEEDS	14100		4530		15300	
50 PERCENT EXCEEDS	3000		962		2630	
90 PERCENT EXCEEDS	470		378		266	

z Period of regulated streamflow.



08028500 SABINE RIVER NEAR BON WIER, TX

LOCATION.--Lat 30°44'49", long 93°36'30", Beauregard Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, near left bank on downstream side of bridge on U.S. Highway 190, 0.7 mi upstream from Quicksand Creek, 0.8 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 2.0 mi east of Bon Wier, 2.4 mi upstream from Caney Creek and at mile 97.7.

DRAINAGE AREA.--8,229 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct 1923 to current year. Monthly discharge only for some periods, published in WSP 1312. Gage-height records collected in this vicinity since 1913 are contained in reports of the National Weather Service.

REVISED RECORDS.--WSP 1342: 1953. WSP 1442: 1924, 1926-27(M), 1929(M), 1939. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 33.42 ft above sea level. Prior to Jul 8, 1931, nonrecording gage at site 0.8 mi downstream at datum 13.00 ft higher. Jul 8, 1931, to Oct 15, 1958, nonrecording gage at present site at datum 13.00 ft higher. Oct 16, 1958, to Sep 30, 1975, water-stage recorder at present site at datum 13.00 ft higher. Oct 1, 1975, to Dec 31, 1988, at present site at datum 10.00 ft higher. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft) and three additional upstream reservoirs. Additional regulation since Oct 1966 by Toledo Bend Reservoir (station 08018800, conservation pool storage 4,472,900 acre-ft), 58.8 mi upstream. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--36 years (water years 1924-59) prior to completion of Lake Tawakoni.

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1924-59).--Maximum discharge, 115,000 ft^3/s May 19, 1953 (gage height, 38.70 ft, current datum); minimum, 160 ft^3/s Sep 29, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1833, 43.5 ft Apr 23 or 24, 1913, from information by Gulf, Colorado, and Santa Fe Railway Co. and local residents. Flood in May 1884 reached a stage of 39 ft. Floods occurring about 1844 and 1860 were higher than flood in May 1884, from information by local residents. All flood data referenced to current datum.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1790	702	1160	883	848	1200	1060	743	4370	5460	3800	6220
2	1330	605	868	1300	1210	897	1450	3440	3770	3420	6110	5220
3	752	619	1100	718	881	1210	1690	7480	4190	1190	6230	2710
4	670	1010	986	800	1180	968	5790	8790	2290	4030	6310	826
5	743	1050	1550	1190	869	1310	5600	11500	923	3570	6290	583
6	948	1210	1350	840	1230	684	4550	11400	1920	4520	3290	4930
7	755	1080	1930	1140	639	725	3500	7090	3420	6420	938	10400
8	1010	573	1350	949	691	1130	2590	4190	3450	6280	3750	5540
9	961	609	894	1290	1140	849	1940	5340	3400	3440	6030	4500
10	1270	1030	1150	708	779	1510	1510	6670	3430	1060	4670	2410
11	845	818	956	819	1160	2110	1550	6530	2140	3720	3740	839
12	813	1200	1300	1280	985	2460	1970	6400	781	7780	5580	2520
13	990	830	782	869	1330	1740	1600	6280	1620	12600	3300	4390
14	793	1190	1010	1170	712	1330	2190	4000	3240	13300	909	e4400
15	1010	597	1310	902	773	1430	1960	1930	3330	12300	3690	4400
16	848	605	908	1250	1190	1110	2200	4230	3350	5160	6020	4480
17	1060	1030	1200	688	1110	1410	1150	6120	3470	1290	6160	2400
18	636	748	1030	767	1030	1170	1190	6110	2270	3810	6210	792
19	664	1170	1480	1180	912	1490	1640	6060	885	6040	6210	2360
20	907	830	1060	829	1270	1150	3490	6490	2280	6210	3320	4220
21	716	1180	1180	1130	691	1570	3530	5410	3810	6250	911	4390
22	927	590	1590	876	731	1590	1520	3200	3820	6530	3750	4470
23	845	609	1230	1260	1140	1170	1710	4660	3640	3650	6110	4540
24	1180	1060	1360	676	847	1380	851	6240	3520	992	6290	2440
25	639	757	1110	725	1190	1130	1200	5030	2160	3780	6660	805
26	652	1100	1380	1120	991	1440	1630	4710	729	6150	5820	2420
27	921	770	762	813	1350	845	1240	4890	1560	6240	3000	4230
28	698	1100	794	1210	783	1000	1920	2950	3390	6220	893	4370
29	910	600	1140	1200	821	1470	2240	1020	3480	6220	3760	4390
30	780	578	784	1440	---	1170	1720	2520	4040	3330	6070	4390
31	1200	---	1080	798	---	1320	---	4850	---	969	6210	---
TOTAL	28263	25850	35784	30820	28483	39968	66181	166273	84678	161931	142031	110585
MEAN	912	862	1154	994	982	1289	2206	5364	2823	5224	4582	3686
MAX	1790	1210	1930	1440	1350	2460	5790	11500	4370	13300	6660	10400
MIN	636	573	762	676	639	684	851	743	729	969	893	583
AC-FT	56060	51270	70980	61130	56500	79280	131300	329800	168000	321200	281700	219300

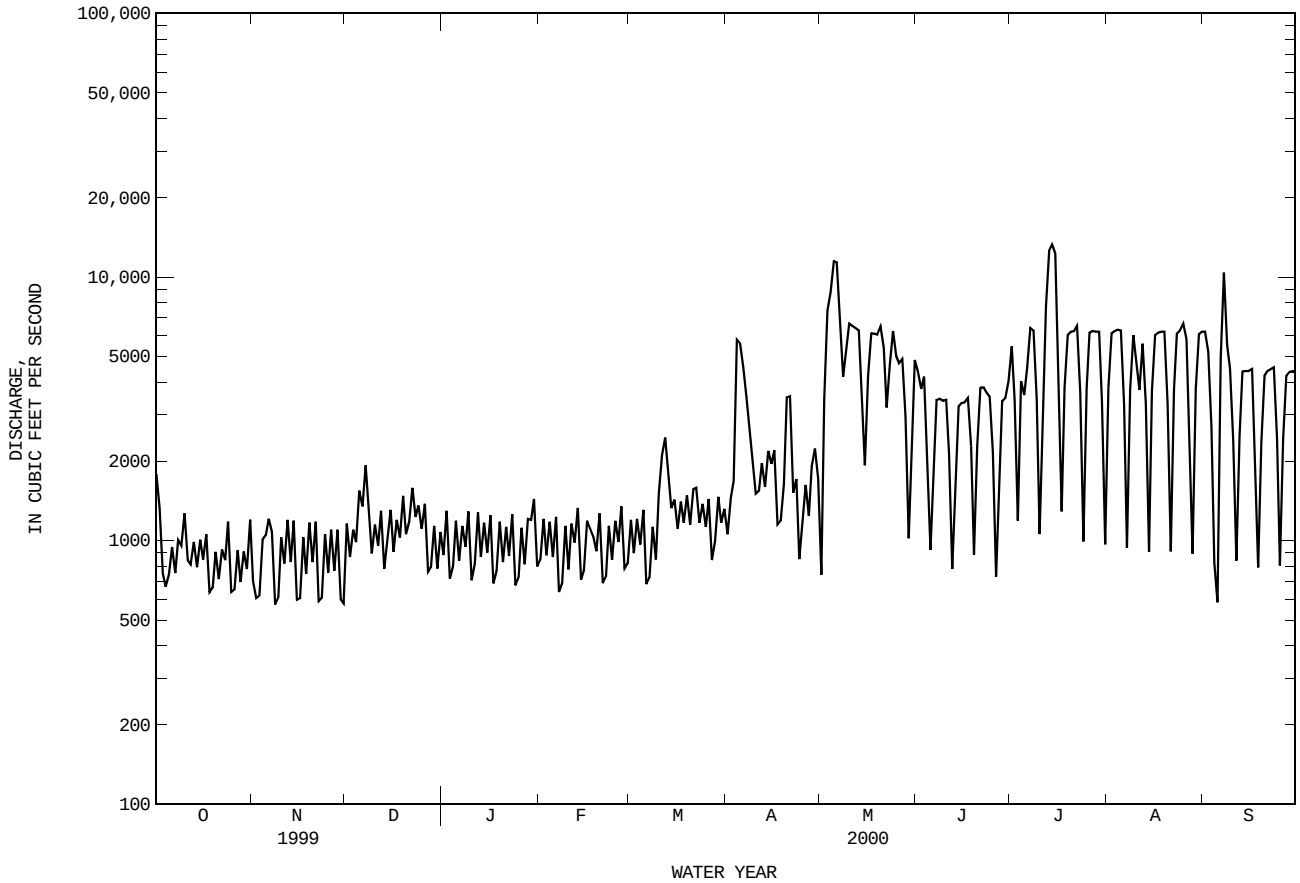
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000z, BY WATER YEAR (WY)

MEAN	1671	2738	6857	10020	11260	11410	9474	8973	6255	4777	3393	3171
MAX	7315	13250	21420	30930	31390	30030	27370	31210	26340	31490	7288	8247
(WY)	1992	1995	1983	1974	1999	1997	1969	1966	1989	1989	1976	1991
MIN	188	217	822	994	746	1288	634	1011	663	530	211	206
(WY)	1968	1968	1981	2000	1968	1981	1971	1996	1970	1964	1967	1967

08028500 SABINE RIVER NEAR BON WIER, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000z	
ANNUAL TOTAL	2967198		920847			
ANNUAL MEAN	8129		2516		6646	
HIGHEST ANNUAL MEAN					12670	1975
LOWEST ANNUAL MEAN					1172	1967
HIGHEST DAILY MEAN	90500	Feb 3	13300	Jul 14	98000	Jul 4 1989
LOWEST DAILY MEAN	573	Nov 8	573	Nov 8	134	Nov 9 1966
ANNUAL SEVEN-DAY MINIMUM	788	Oct 28	788	Oct 28	142	Nov 3 1966
INSTANTANEOUS PEAK FLOW			13600	Jul 15	98200	Jul 4 1989
INSTANTANEOUS PEAK STAGE			24.43	Jul 15	37.90	Jul 4 1989
ANNUAL RUNOFF (AC-FT)	5885000		1826000		4815000	
10 PERCENT EXCEEDS	17000		6110		16900	
50 PERCENT EXCEEDS	4980		1320		3490	
90 PERCENT EXCEEDS	839		754		700	

e Estimated
z Period of regulated streamflow.



08028500 SABINE RIVER NEAR BON WEIR, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Oct 1969 to current year.
BIOCHEMICAL DATA: Oct 1969 to May 1973.
SEDIMENT DATA: Apr 1957 to Sep 1962.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Nov 1969 to Jun 1983.
WATER TEMPERATURE: Nov 1969 to Jun 1983.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 407 microsiemens, Aug 31, 1978; minimum daily, 34 microsiemens, Feb 3, 1983.
WATER TEMPERATURE: Maximum daily, 33.0°C, Jul 17, 1978, and Jul 14, 26, 1980; minimum daily, 4.0°C, Feb 2, 1980.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
NOV							
10...	1530	956	148	18.0	50	16	13
17...	1025	1120	148	17.0	50	16	13
24...	1635	955	149	17.5	50	18	15
DEC							
05...	1630	1380	162	18.0	70	20	15
08...	1645	1090	196	16.0	100	29	18
14...	1445	925	206	16.0	100	32	19
26...	1230	1330	152	12.0	70	19	13
31...	1055	1120	172	12.0	70	23	15
JAN							
03...	1715	645	173	12.0	70	23	15
09...	1615	1060	149	16.0	60	18	13
20...	1455	675	181	18.0	70	25	16
APR							
06...	1230	5100	130	19.0	140	24	11
11...	1845	1800	214	21.0	120	39	18
19...	1825	1190	174	24.0	80	27	15
26...	1945	1130	180	24.0	100	29	15
MAY							
06...	1505	12300	79	23.0	160	11	6.6
12...	1100	6600	134	25.0	50	16	12
19...	1255	6560	134	25.0	40	16	12
25...	1245	4750	147	28.0	40	20	14
JUL							
08...	1610	6990	147	31.0	40	16	14
14...	1225	14100	158	32.0	40	18	14
17...	1950	907	158	33.0	40	18	15
28...	1015	6380	142	30.0	20	14	13
SEP							
03...	1230	2320	148	30.0	30	15	14
09...	1405	5190	151	29.5	30	15	14

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08029500 BIG COW CREEK NEAR NEWTON, TX

LOCATION.--Lat 30°49′08", long 93°47′07", Newton County, Hydrologic Unit 12010005, near center of span on downstream side of bridge on State Highway 87, 2.6 mi southwest of Newton, 5.0 mi downstream from Melhomes Creek, and 8.0 mi upstream from White Oak Creek.

DRAINAGE AREA.--128 mi^2.

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

GAGE.--Water-stage recorder. Datum of gage is 134.69 ft above sea level. Prior to Dec 19, 1957, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. No known regulation or diversions. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1907, 27.5 ft in Apr 1922, from information by local resident.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,100 ft^3/s:

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	69	e137	59	66	71	59	53	46	e38	41	31	e20
2	59	e86	58	65	68	57	78	100	37	41	32	e19
3	55	71	67	70	66	55	560	303	36	39	44	e19
4	54	66	123	81	64	53	860	310	35	33	43	e18
5	53	63	235	69	63	51	308	912	45	32	41	e18
6	51	62	412	64	61	e50	135	308	89	31	37	e17
7	50	61	165	63	62	e50	107	127	66	e30	31	e17
8	57	61	98	64	69	e50	92	94	47	e29	29	17
9	92	61	85	66	74	e49	79	79	41	e29	28	27
10	96	61	79	68	67	e49	71	71	41	e28	27	41
11	71	60	77	65	65	154	69	66	57	e28	27	39
12	62	61	84	63	64	220	71	62	57	e27	28	33
13	55	59	144	62	63	107	83	57	70	e27	29	51
14	53	59	136	60	62	76	92	64	47	e26	25	59
15	52	62	93	58	63	71	76	62	41	e25	24	44
16	50	60	76	57	60	117	69	54	40	e25	24	36
17	50	57	70	58	61	132	64	50	42	e25	24	32
18	52	57	85	59	60	85	60	48	54	e24	25	29
19	73	57	147	60	58	76	57	46	50	e24	26	27
20	61	58	113	59	63	132	54	77	45	e23	23	27
21	e61	59	117	57	60	96	52	190	48	e23	23	29
22	e56	59	127	55	56	77	50	110	44	e22	22	34
23	e53	62	90	56	55	87	48	69	36	e22	25	41
24	e52	82	78	57	60	70	51	58	35	e21	29	57
25	51	95	73	55	60	63	82	51	34	e21	28	40
26	51	81	71	54	60	65	63	46	33	20	28	39
27	51	75	69	55	82	87	52	43	33	20	26	39
28	e50	66	68	92	79	83	48	42	33	20	24	32
29	e49	63	67	157	63	65	47	40	32	20	23	30
30	e99	60	67	92	---	62	45	e39	35	21	22	28
31	e140	---	67	76	---	58	---	e38	---	24	e21	---
TOTAL	1928	2021	3300	2083	1859	2506	3576	3662	1341	821	869	959
MEAN	62.2	67.4	106	67.2	64.1	80.8	119	118	44.7	26.5	28.0	32.0
MAX	140	137	412	157	82	220	860	912	89	41	44	59
MIN	49	57	58	54	55	49	45	38	32	20	21	17
AC-FT	3820	4010	6550	4130	3690	4970	7090	7260	2660	1630	1720	1900

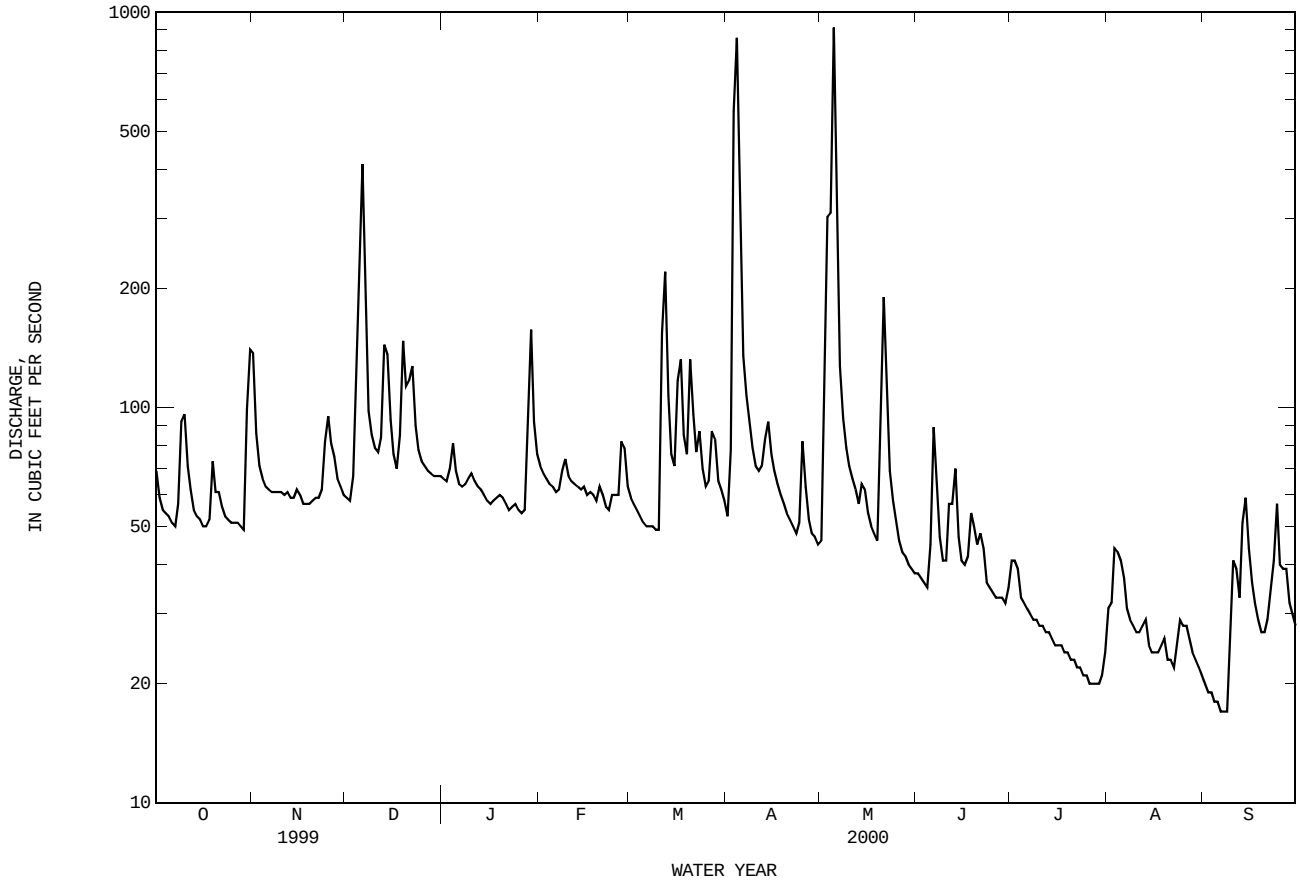
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1952 - 2000, BY WATER YEAR (WY)

MEAN	68.7	109	167	193	211	173	168	152	110	71.1	55.5	71.4
MAX	278	507	489	645	743	377	533	817	414	426	221	491
(WY)	1995	1999	1983	1974	1984	1999	1953	1953	1993	1989	1973	1998
MIN	17.4	27.3	39.3	42.2	57.4	46.4	29.4	31.7	16.6	14.2	14.5	17.3
(WY)	1957	1968	1982	1982	1996	1996	1971	1971	1971	1971	1956	1956

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1952 - 2000	
ANNUAL TOTAL	72102		24925			
ANNUAL MEAN	198		68.1		129	
HIGHEST ANNUAL MEAN					266	1999
LOWEST ANNUAL MEAN					46.1	1965
HIGHEST DAILY MEAN	3750	Mar 14	912	May 5	9720	Feb 12 1984
LOWEST DAILY MEAN	49	Sep 21	17	Sep 6	10	Jul 7 1971
ANNUAL SEVEN-DAY MINIMUM	49	Sep 19	18	Sep 2	11	Jul 17 1971
INSTANTANEOUS PEAK FLOW			1060	May 5	20200	Apr 29 1953
INSTANTANEOUS PEAK STAGE			13.95	May 5	19.45	Apr 29 1953
ANNUAL RUNOFF (AC-FT)	143000		49440		93410	
10 PERCENT EXCEEDS	310		95		225	
50 PERCENT EXCEEDS	123		57		64	
90 PERCENT EXCEEDS	57		25		28	

e Estimated

08029500 BIG COW CREEK NEAR NEWTON, TX--Continued



08030500 SABINE RIVER NEAR RULIFF, TX

LOCATION.--Lat 30°18'13", long 93°44'37", Calcasieu Parish, Louisiana-Newton County, Texas State line, Hydrologic Unit 12010005, on downstream side of bridge on State Highway 12, 2.4 mi north of Ruliff, 4.2 mi upstream from the Kansas City Southern Railway Co. bridge, 4.5 mi downstream from Cypress Creek and at mile 40.2.

DRAINAGE AREA.--9,329 mi^2.

PERIOD OF RECORD.--Oct 1924 to current year.
Water-quality records.--Chemical data: Sep 1945 to Sep 1946, Oct 1947 to Sep 1998. Biochemical data: Feb 1968 to Sep 1998. Radiochemical data: Oct 1969 to Sep 1995. Pesticide data: Jan 1968 to May 1982. Sediment data: Oct 1974 to Sep 1995.

REVISED RECORDS.--WSP 1282: 1941(M), 1942. WSP 1442: 1925-29, 1937-39, 1943. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 5.92 ft below sea level. Prior to Mar 1, 1941, nonrecording gage at Kansas City Southern Railway Co. bridge, 4.2 mi downstream and at datum 7.98 ft higher than current datum. Mar 1, 1941, to Dec 8, 1948, nonrecording gage at present site and at datum 10.00 ft higher than current datum. Dec 9, 1948, to Dec 31, 1989, recording gage at present site and at datum 10.00 ft higher than current datum. Telephone telemeter at station. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1960, at least 10% of contributing drainage area has been regulated by Lake Tawakoni (station 08017400, conservation pool storage 888,140 acre-ft) and three additional upstream reservoirs. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--35 years (water years 1925-59) prior to completion of Lake Tawakoni, 8,842 ft^3/s (6,406,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1925-59).--Maximum discharge, 121,000 ft^3/s May 22, 1953, (gage height, 29.98 ft, current datum); minimum, 270 ft^3/s Sep 27-30, Oct 1-3, 17-20, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1835, 32.2 ft in May or Jun 1884 (adjusted to present site and datum on basis of slope of flood of Jun 8, 9, 1950); flood of Apr 26-29, 1913, reached a stage of 29.5 ft, present site and datum, from information by local resident.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1870	1280	1060	1220	1520	1270	1690	2000	2850	2880	3140	5120
2	1970	1280	1170	1200	1220	1410	1560	1620	3730	3710	2230	5680
3	1920	1080	1390	1340	1340	1400	1930	1870	3420	4380	4080	5680
4	1450	1010	1430	1290	1330	1440	2550	4350	3330	3240	5300	4510
5	1110	1100	1430	1040	1360	1390	4550	6680	3020	2560	5790	2300
6	1010	1340	1680	1230	1300	1520	6470	8190	1880	3540	6010	1110
7	1130	1350	1930	1250	1390	1420	7150	9610	1370	3260	5500	1680
8	1140	1560	2120	1270	1330	1140	6500	10600	2160	4400	3030	5200
9	1210	1320	2350	1230	1080	1280	4600	9920	2670	5330	2060	6770
10	1210	1030	1750	1360	1230	1310	3060	7430	2760	5100	3990	6450
11	1410	1160	1570	1270	1290	1460	2300	6410	2800	2950	4800	4900
12	1400	1230	1460	1040	1330	1880	1950	6350	2580	2040	4080	2550
13	1170	1360	1590	1260	1340	2610	2100	6370	1660	3960	3920	1710
14	1210	1340	1490	1250	1510	2650	1940	6270	1220	6140	4270	3150
15	1160	1390	1340	1260	1410	2130	2100	5710	1960	7670	2540	4000
16	1190	1320	1600	1210	1150	1940	2060	3670	2500	9060	1840	4270
17	1160	1040	1500	1310	1310	1690	2280	2830	2670	9970	3830	4320
18	1230	1150	1510	1240	1380	1750	1940	4180	2780	8390	5010	3820
19	1160	1220	1450	1010	1480	1710	1590	5180	2670	4950	5570	2110
20	964	1300	1630	1190	1300	1840	1710	5940	1790	4720	5760	1400
21	1050	1310	1710	1200	1450	1710	2040	6530	1400	5380	5260	2920
22	1080	1370	1570	1230	1380	1750	3260	6680	2360	5720	2870	3840
23	1100	1330	1790	1200	1120	2070	2530	5550	2870	5960	1960	4200
24	1100	1060	1760	1310	1270	1800	2000	4080	2930	5690	3990	4320
25	1260	1180	1730	1250	1320	1760	1620	4790	2840	3280	5270	3860
26	1220	1260	1520	1010	1400	1640	1380	5340	2590	2140	5750	2110
27	984	1330	1600	1160	1400	1780	1630	4690	1690	4010	5970	1420
28	1050	1330	1420	1220	1550	1610	1570	4360	1240	5230	5100	2910
29	1080	1360	1140	1290	1490	1370	1640	3900	1940	5700	2660	3730
30	1090	1320	1240	1360	---	1660	1950	2380	2590	5890	1890	4030
31	1100	---	1240	1660	---	1660	---	1660	---	5470	3900	---
TOTAL	38188	37710	48170	38360	38980	52050	79650	165140	72270	152720	127370	110070
MEAN	1232	1257	1554	1237	1344	1679	2655	5327	2409	4926	4109	3669
MAX	1970	1560	2350	1660	1550	2650	7150	10600	3730	9970	6010	6770
MIN	964	1010	1060	1010	1080	1140	1380	1620	1220	2040	1840	1110
AC-FT	75750	74800	95550	76090	77320	103200	158000	327600	143300	302900	252600	218300

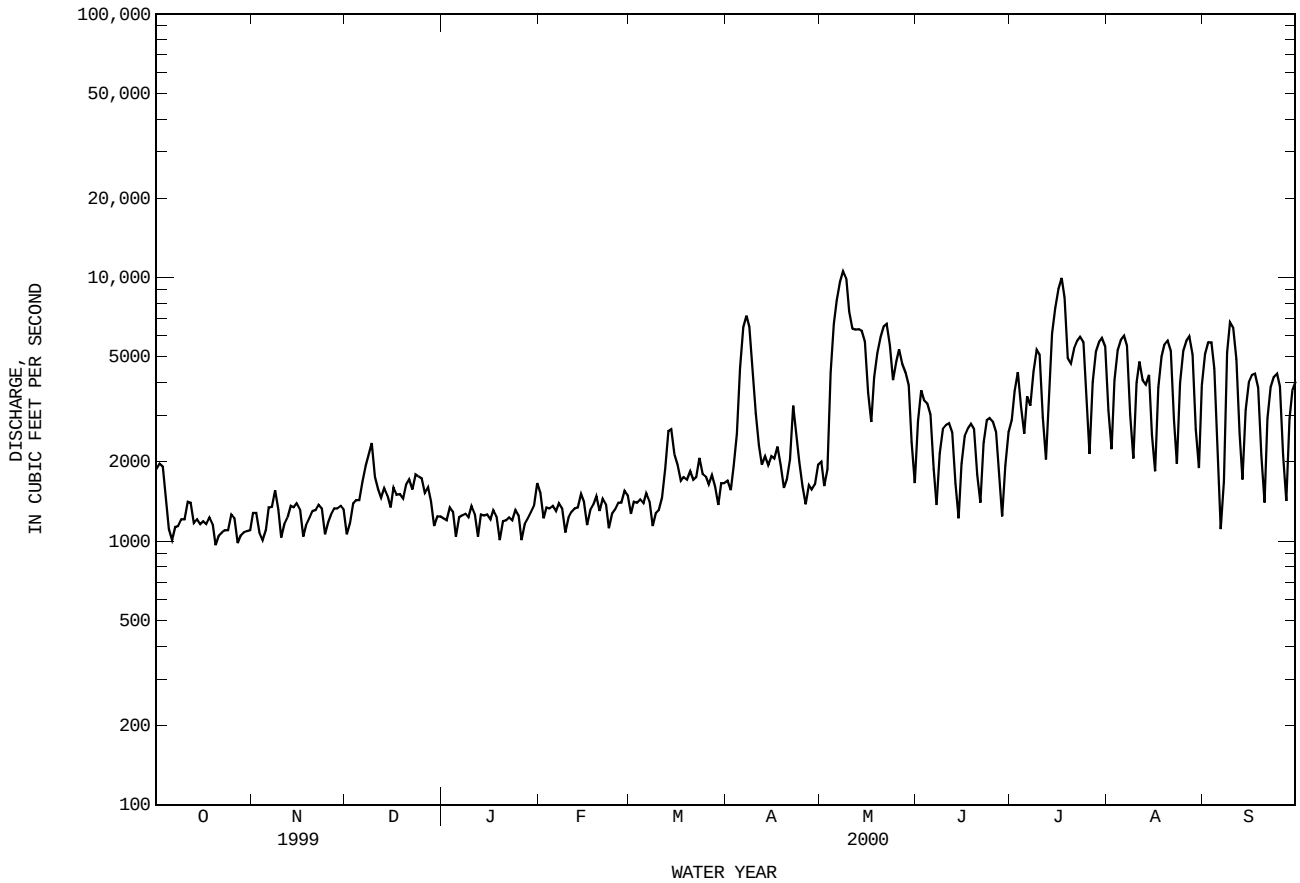
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1960 - 2000z, BY WATER YEAR (WY)

MEAN	2398	3510	8338	12110	13060	13180	11200	10050	7603	5743	3938	3894
MAX	9591	14910	22070	35570	33170	35780	33240	32980	26240	42320	7982	12530
(WY)	1995	1995	1983	1961	1999	1997	1969	1966	1989	1989	1975	1998
MIN	292	327	1366	1237	1344	1679	1030	1395	1383	805	382	333
(WY)	1968	1968	1981	2000	2000	2000	1971	1996	1963	1967	1967	1967

08030500 SABINE RIVER NEAR RULIFF, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1960 - 2000z	
ANNUAL TOTAL	3334688		960678			
ANNUAL MEAN	9136		2625		7895	
HIGHEST ANNUAL MEAN					14210	1975
LOWEST ANNUAL MEAN					1959	1967
HIGHEST DAILY MEAN	90600	Feb 6	10600	May 8	108000	Jul 6 1989
LOWEST DAILY MEAN	964	Oct 20	964	Oct 20	278	Oct 28 1967
ANNUAL SEVEN-DAY MINIMUM	1100	Oct 18	1100	Oct 18	282	Oct 9 1967
INSTANTANEOUS PEAK FLOW			11200	May 8	109000	Jul 6 1989
INSTANTANEOUS PEAK STAGE			23.12	May 8	29.15	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	6614000		1906000		5720000	
10 PERCENT EXCEEDS	19000		5600		18600	
50 PERCENT EXCEEDS	5770		1720		4600	
90 PERCENT EXCEEDS	1220		1160		1160	

z Period of regulated streamflow.



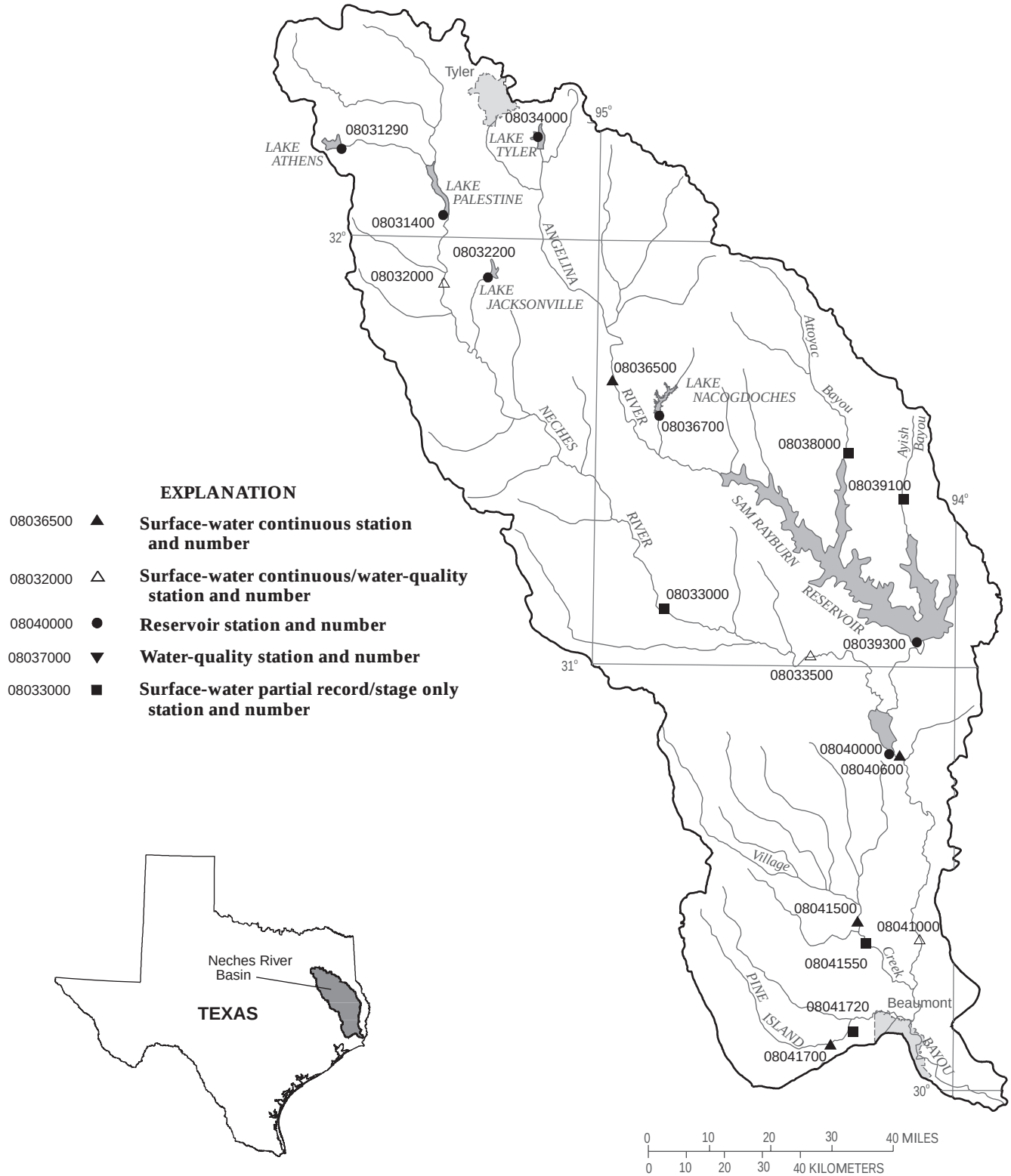


Figure 10.--Map showing location of gaging stations in the Neches River Basin

08031290 Lake Athens near Athens, TX 384
08031400 Lake Palestine near Frankston, TX 388
08032000 Neches River near Neches, TX 392
08032200 Lake Jacksonville near Jacksonville, TX 396
08033000 Neches River near Diboll, TX 400
08033500 Neches River near Rockland, TX 402
08034000 Lake Tyler near Whitehouse, TX 406
08036500 Angelina River near Alto, TX 410
08036700 Lake Nacogdoches near Nacogdoches, TX 412
08038000 Attoyac Bayou near Chireno, TX 414
08039100 Ayish Bayou near San Augustine, TX 416
08039300 Sam Rayburn Reservoir near Jasper, TX 418
08040000 B.A. Steinhagen Lake at Town Bluff, TX 420
08040600 Neches River at Town Bluff, TX 422
08041000 Neches River near Evadale, TX 424
08041500 Village Creek near Kountze, TX 428
08041550 Village Creek at State Highway 327 near Silsbee, TX 443
08041700 Pine Island Bayou near Sour Lake, TX 430
08041720 Pine Island Bayou at State Highway 105 near Sour Lake, TX 443

08031290 LAKE ATHENS NEAR ATHENS, TX

LOCATION.--Lat 32°12'15", long 95°43'30", Henderson County, Hydrologic Unit 120200001, at upstream side of dam on Flat Creek, 5.0 mi downstream from Underwood Lake, 8.0 mi east of Athens, and 18.0 mi upstream from Neches River.

DRAINAGE AREA.--21.6 mi^2.

PERIOD OF RECORD.--Oct 1967 to Sept 1983, Apr 1999 to current year.
Water-quality records.--Chemical data: Oct 1975 to Sep 1983.

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam 3,000 ft long. Deliberate impoundment began Nov 1, 1962, and the dam was completed in May 1963. The emergency spillway is an uncontrolled 300-foot-wide channel cut through natural ground at the left end of the dam. The service spillway is an uncontrolled 6- by 6-foot square drop inlet that is connected to a concrete conduit of the same size that extends through the dam. A 4.0- by 5.5-foot inlet box with slide valve that connects to an 18-inch diameter concrete conduit extends through the dam and serves as the low-flow service outlet. Water is used for municipal supply by the city of Athens. Conservation pool storage is 29,440 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	453.0
Crest of spillway	446.0
Crest of drop inlet	440.0
Normal operating level	440.0
Lowest gated outlet (invert)	396.5

COOPERATION.--Capacity table was furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 36,500 acre-ft, May 10, 1968, elevation, 442.37 ft; minimum contents, 25,650 acre-ft, Sep 30, 2000, elevation, 437.78 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 29,610 acre-ft, Jun 25, elevation, 440.82 ft; minimum contents, 26,590 acre-ft, Sep 30, elevation, 438.35 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 29,570 acre-ft, Jun 11, 12, elevation, 440.60 ft; minimum contents, 25,650 acre-ft, Sep 30, elevation, 437.78 ft.

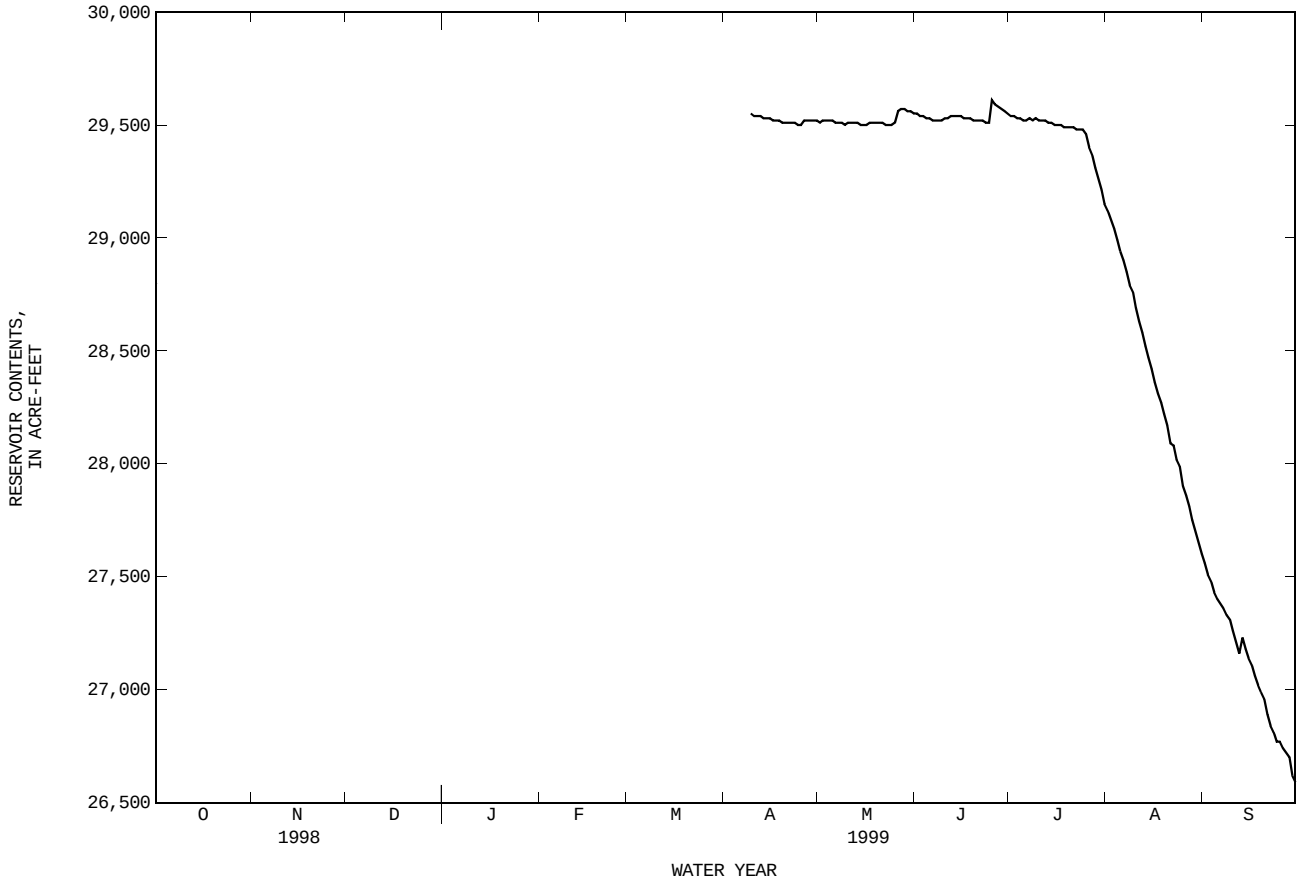
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	29510	29550	29540	29120	27560
2	---	---	---	---	---	---	---	29520	29540	29540	29080	27510
3	---	---	---	---	---	---	---	29520	29540	29530	29040	27480
4	---	---	---	---	---	---	---	29520	29530	29530	28990	27430
5	---	---	---	---	---	---	---	29520	29530	29520	28940	27400
6	---	---	---	---	---	---	---	29510	29520	29520	28900	27380
7	---	---	---	---	---	---	---	29510	29520	29530	28850	27360
8	---	---	---	---	---	---	---	29510	29520	29520	28790	27330
9	---	---	---	---	---	---	29550	29500	29520	29530	28760	27310
10	---	---	---	---	---	---	29540	29510	29530	29520	28690	27260
11	---	---	---	---	---	---	29540	29510	29530	29520	28630	27210
12	---	---	---	---	---	---	29540	29510	29540	29520	28580	27160
13	---	---	---	---	---	---	29530	29510	29540	29510	28520	27230
14	---	---	---	---	---	---	29530	29500	29540	29510	28470	27180
15	---	---	---	---	---	---	29530	29500	29540	29500	28420	27140
16	---	---	---	---	---	---	29520	29500	29530	29500	28360	27110
17	---	---	---	---	---	---	29520	29510	29530	29500	28310	27060
18	---	---	---	---	---	---	29520	29510	29530	29490	28270	27020
19	---	---	---	---	---	---	29510	29510	29520	29490	28220	26990
20	---	---	---	---	---	---	29510	29510	29520	29490	28170	26960
21	---	---	---	---	---	---	29510	29510	29520	29490	28090	26890
22	---	---	---	---	---	---	29510	29500	29520	29480	28080	26840
23	---	---	---	---	---	---	29510	29500	29510	29480	28020	26810
24	---	---	---	---	---	---	29500	29500	29510	29480	27990	26770
25	---	---	---	---	---	---	29500	29510	29610	29460	27900	26770
26	---	---	---	---	---	---	29520	29560	29590	29400	27860	26740
27	---	---	---	---	---	---	29520	29570	29580	29370	27810	26720
28	---	---	---	---	---	---	29520	29570	29570	29310	27750	26700
29	---	---	---	---	---	---	29520	29560	29560	29260	27700	26620
30	---	---	---	---	---	---	29520	29560	29550	29210	27650	26590
31	---	---	---	---	---	---	---	29550	---	29150	27600	---
MAX	---	---	---	---	---	---	---	29570	29610	29540	29120	27560
MIN	---	---	---	---	---	---	---	29500	29510	29150	27600	26590
(+)							440.25	440.48	440.47	439.82	438.95	438.35
(@)								+30	0	-400	-1550	-1010

WTR YR 1999 MAX 29610 MIN 26590

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08031290 LAKE ATHENS NEAR ATHENS, TX--Continued



08031290 LAKE ATHENS NEAR ATHENS, TX--Continued

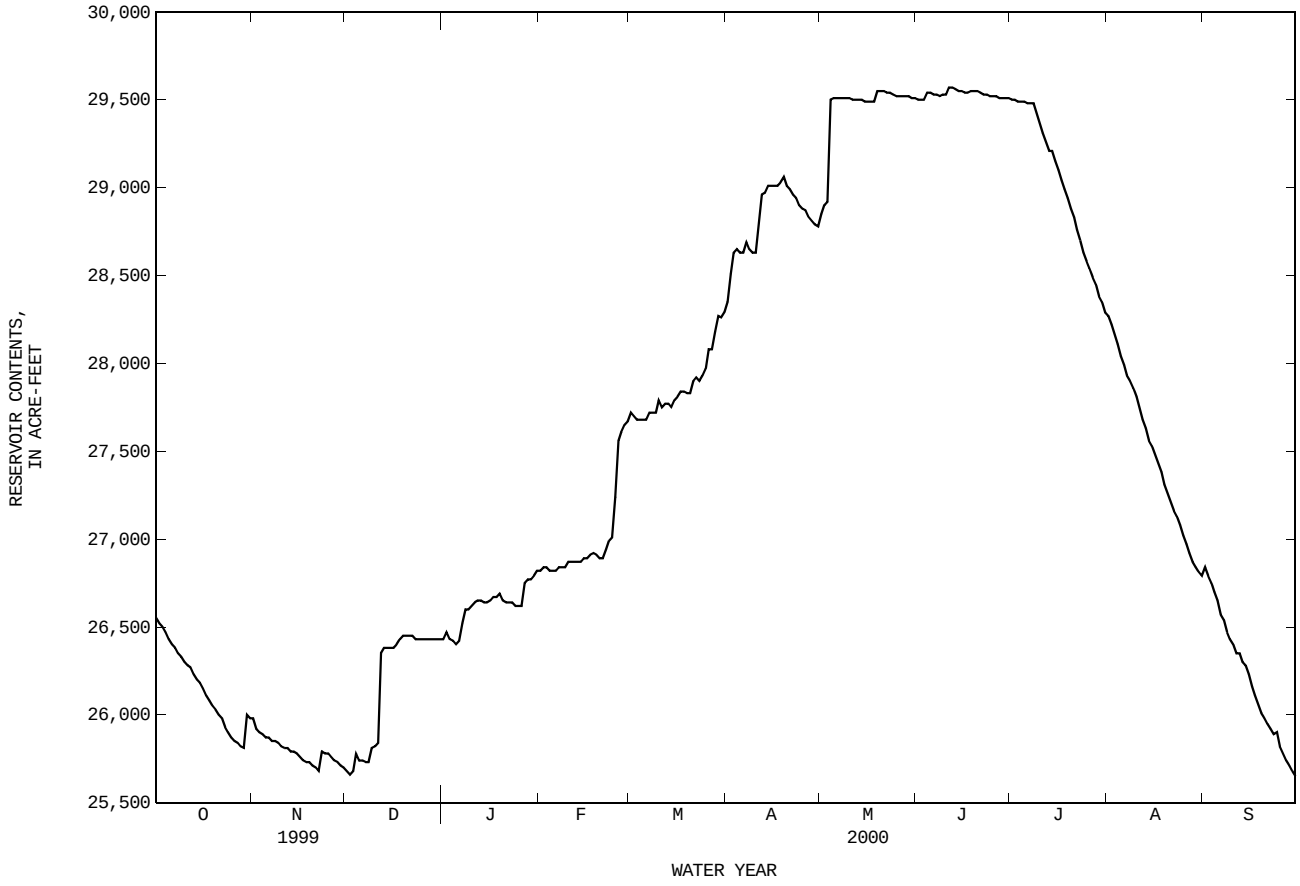
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	26550	25980	25680	26430	26820	27720	28350	28850	29500	29500	28270	26840
2	26520	25920	25660	26470	26840	27700	28510	28900	29500	29500	28220	26790
3	26500	25900	25680	26430	26840	27680	28630	28920	29500	29490	28170	26750
4	26470	25890	25780	26420	26820	27680	28650	29500	29540	29490	28110	26700
5	26430	25870	25740	26400	26820	27680	28630	29510	29540	29490	28040	26650
6	26400	25870	25740	26420	26820	27680	28630	29510	29530	29480	27990	26570
7	26380	25850	25730	26520	26840	27720	28690	29510	29530	29480	27930	26540
8	26350	25850	25730	26600	26840	27720	28650	29510	29520	29480	27900	26470
9	26330	25840	25810	26600	26840	27720	28630	29510	29530	29420	27860	26430
10	26300	25820	25820	26620	26870	27790	28630	29510	29530	29370	27810	26400
11	26280	25810	25840	26640	26870	27750	28790	29500	29570	29310	27750	26350
12	26270	25810	26350	26650	26870	27770	28960	29500	29570	29260	27680	26350
13	26230	25790	26380	26650	26870	27770	28970	29500	29560	29210	27630	26300
14	26200	25790	26380	26640	26870	27750	29010	29500	29550	29210	27560	26280
15	26180	25780	26380	26640	26890	27790	29010	29490	29550	29150	27530	26230
16	26150	25760	26380	26650	26890	27810	29010	29490	29540	29100	27480	26160
17	26110	25740	26400	26670	26910	27840	29010	29490	29540	29040	27430	26110
18	26080	25730	26430	26670	26920	27840	29030	29490	29550	28990	27380	26060
19	26050	25730	26450	26690	26910	27830	29060	29550	29550	28940	27310	26010
20	26030	25710	26450	26650	26890	27830	29010	29550	29550	28880	27260	25980
21	26000	25700	26450	26640	26890	27900	28990	29550	29540	28830	27210	25950
22	25980	25680	26450	26640	26940	27920	28960	29540	29530	28760	27160	25920
23	25930	25790	26430	26640	26990	27900	28940	29540	29530	28700	27130	25890
24	25900	25780	26430	26620	27010	27930	28900	29530	29520	28630	27080	25900
25	25870	25780	26430	26620	27240	27970	28880	29520	29520	28580	27020	25820
26	25850	25760	26430	26620	27560	28080	28870	29520	29520	28540	26970	25780
27	25840	25740	26430	26750	27610	28080	28830	29520	29510	28490	26920	25740
28	25820	25730	26430	26770	27650	28180	28810	29520	29510	28450	26870	25710
29	25810	25710	26430	26770	27670	28270	28790	29520	29510	28380	26840	25680
30	26000	25700	26430	26790	---	28260	28780	29510	29510	28350	26810	25650
31	25980	---	26430	26820	---	28290	---	29510	---	28290	26790	---
MAX	26550	25980	26450	26820	27670	28290	29060	29550	29570	29500	28270	26840
MIN	25810	25680	25660	26400	26820	27680	28350	28850	29500	28290	26790	25650
(+)	437.99	437.81	438.26	438.49	438.99	439.34	439.61	440.20	440.19	439.34	438.47	437.78
(@)	-610	-280	+730	+390	+850	+620	+490	+730	0	-1220	-1500	-1140

WTR YR 2000 MAX 29570 MIN 25650 (@) -940

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08031290 LAKE ATHENS NEAR ATHENS, TX--Continued



08031400 LAKE PALESTINE NEAR FRANKSTON, TX

LOCATION.--Lat 32°03'12", long 95°26'12", Anderson-Cherokee County line, Hydrologic Unit 12020001, in outlet tower near right bank, 140 ft upstream from Blackburn Crossing Dam on Neches River, 5 mi east of Frankston, 21 mi upstream from gage (station 08032000), and at mile 354.0.

DRAINAGE AREA.--839 mi^2.

PERIOD OF RECORD.--Feb 1962 to Jun 1995, May 1999 to current year.
Water-quality records.--Chemical analyses: Oct 1976 to Sep 1984.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Sep 20, 1962, non-recording gage read once daily. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam with a 500-foot-wide uncontrolled spillway near left end of dam. Deliberate impoundment began May 1, 1962. Enlargement of the lake began Sep 26, 1969, and was completed on Mar 3, 1971. The outlet works consist of two 5- by 7-foot gates located in concrete tower near center of dam and connected to an 8.5-foot-diameter concrete conduit through the dam. The low-flow outlet consists of two 3-foot iron pipes connected to the tower structure for low-flow releases. Water is used for municipal and industrial purposes in the Palestine area. The diversion point is downstream from gage (station 08032000). There are no large diversions above station. Conservation storage pool is 411,300 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	364.0
Design flood	355.3
Crest of spillway (top of conservation pool)	345.0
Lowest gated outlet (invert)	298.0

COOPERATION.--The capacity table, furnished by the Upper Neches River Municipal Water Authority, is based on Geological Survey topographic maps dated 1946 and 1948-49.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 531,100 acre-ft, May 19, 1989, elevation, 349.31 ft; minimum since first appreciable storage, 11,450 acre-ft Nov 28, 1970, elevation 310.00 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 430,300 acre-ft, Jun 30, elevation, 345.71 ft; minimum contents, 368,900 acre-ft, Sep 30, elevation, 343.26 ft.

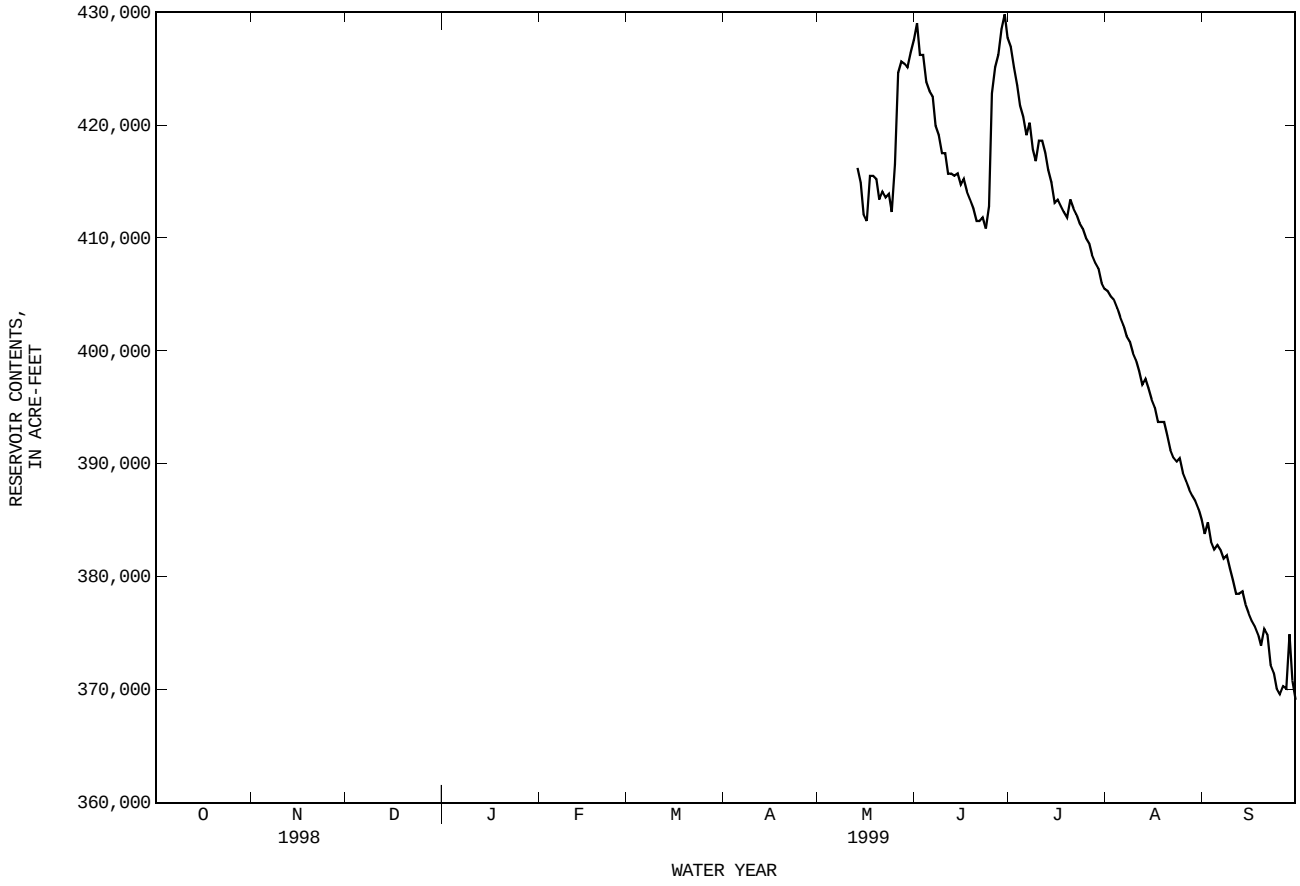
EXTREMES FOR CURRENT YEAR.--Maximum contents, 443,800 acre-ft, May 21, 22, elevation, 346.22 ft; minimum contents, 346,900 acre-ft, Dec 2, elevation, 342.32 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	429000	426900	405300	383800
2	---	---	---	---	---	---	---	---	426200	425100	404800	384800
3	---	---	---	---	---	---	---	---	426200	423500	404500	383100
4	---	---	---	---	---	---	---	---	423800	421700	403800	382400
5	---	---	---	---	---	---	---	---	423000	420700	403000	382800
6	---	---	---	---	---	---	---	---	422500	419100	402300	382400
7	---	---	---	---	---	---	---	---	419900	420200	401300	381600
8	---	---	---	---	---	---	---	---	419100	417800	400800	381900
9	---	---	---	---	---	---	---	---	417500	416800	399800	380700
10	---	---	---	---	---	---	---	---	417500	418600	399200	379700
11	---	---	---	---	---	---	---	---	415700	418600	398200	378500
12	---	---	---	---	---	---	---	---	415700	417500	397000	378500
13	---	---	---	---	---	---	---	416200	415500	416000	397500	378700
14	---	---	---	---	---	---	---	414900	415700	414900	396700	377500
15	---	---	---	---	---	---	---	412100	414700	413100	395700	376800
16	---	---	---	---	---	---	---	411500	415200	413400	395000	376100
17	---	---	---	---	---	---	---	415500	414100	412800	393700	375600
18	---	---	---	---	---	---	---	415500	413400	412300	393700	374900
19	---	---	---	---	---	---	---	415200	412600	411800	393700	373900
20	---	---	---	---	---	---	---	413400	411500	413400	392500	375400
21	---	---	---	---	---	---	---	414100	411500	412600	391200	374900
22	---	---	---	---	---	---	---	413600	411800	412100	390500	372200
23	---	---	---	---	---	---	---	413900	410800	411300	390200	371500
24	---	---	---	---	---	---	---	412300	412800	410800	390500	370100
25	---	---	---	---	---	---	---	416500	422800	410000	389200	369600
26	---	---	---	---	---	---	---	424600	425100	409500	388500	370300
27	---	---	---	---	---	---	---	425600	426200	408500	387700	370100
28	---	---	---	---	---	---	---	425400	428500	407800	387200	374900
29	---	---	---	---	---	---	---	425100	429800	407300	386700	370800
30	---	---	---	---	---	---	---	426400	427700	406000	386000	369100
31	---	---	---	---	---	---	---	427500	---	405500	385000	---
MAX	---	---	---	---	---	---	---	---	429800	426900	405300	384800
MIN	---	---	---	---	---	---	---	---	410800	405500	385000	369100
(+)	---	---	---	---	---	---	---	345.60	345.61	344.75	343.93	343.27
(@)	---	---	---	---	---	---	---	---	+200	-22200	-20500	-15900

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08031400 LAKE PALESTINE NEAR FRANKSTON, TX--Continued



08031400 LAKE PALESTINE NEAR FRANKSTON, TX--Continued

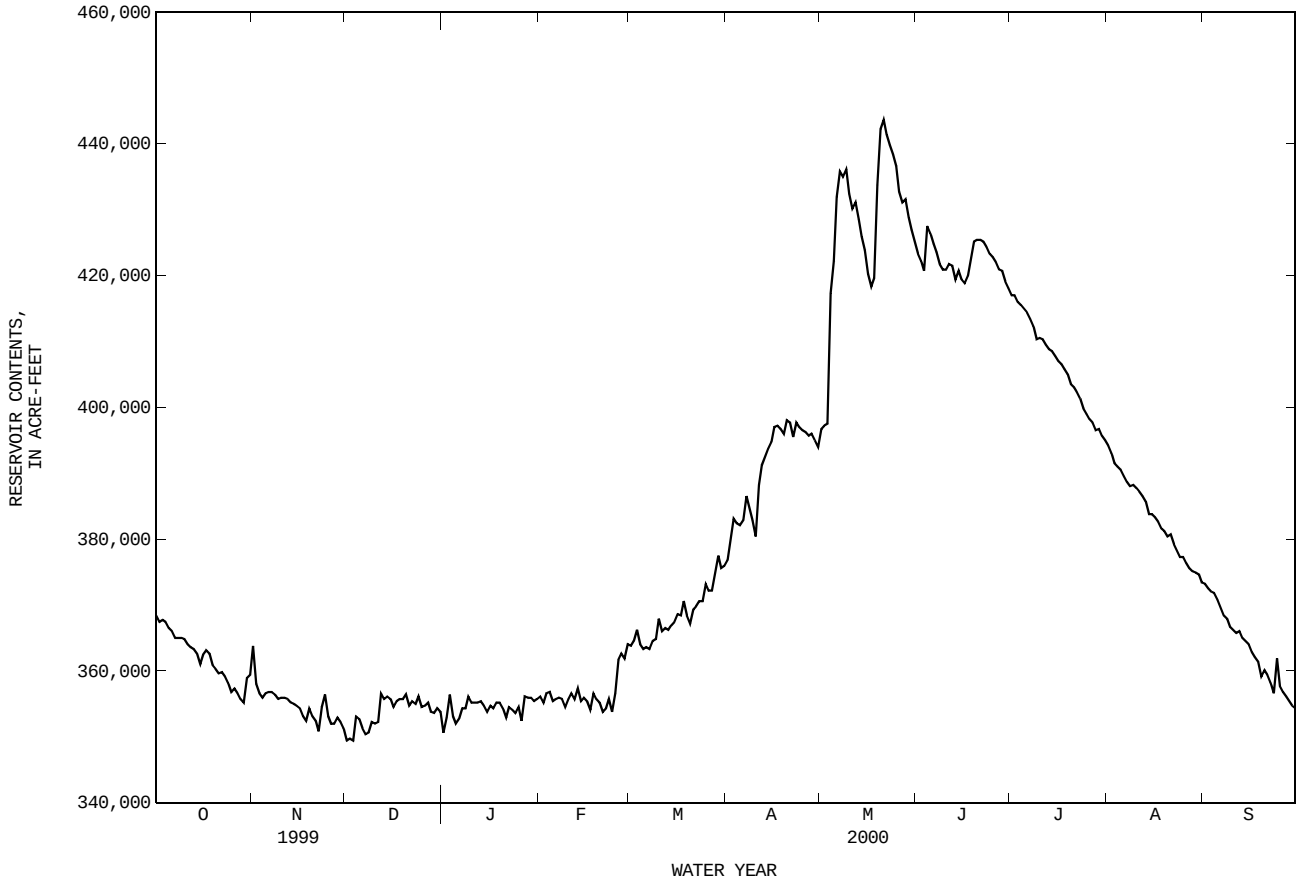
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	368400	363800	349400	350600	356100	363800	376800	396700	423300	417000	394200	373200
2	367400	358000	349700	352900	355200	364500	380200	397200	422200	417000	393000	372500
3	367700	356600	349400	356400	356600	366200	383100	397500	420700	416000	391500	372000
4	367400	355900	353100	353100	356800	364000	382400	417300	427500	415500	391000	371800
5	366500	356600	352700	352000	355400	363300	382100	422200	426400	414900	390500	370800
6	366000	356800	351300	352700	355700	363600	382800	431900	424800	414400	389500	369600
7	365000	356800	350400	354300	355900	363300	386500	435800	423500	413400	388700	368400
8	365000	356400	350600	354300	355700	364500	384800	435000	421700	412300	388000	367900
9	365000	355700	352200	356100	354500	364800	382800	436100	420900	410300	388200	366700
10	364800	355900	352000	355200	355700	367900	380400	432400	420900	410500	387700	366200
11	364000	355900	352200	355200	356600	366000	388200	430100	421700	410300	387200	365700
12	363600	355700	356600	355200	355700	366500	391200	431100	421500	409500	386500	366000
13	363300	355200	355700	355400	357300	366200	392500	428500	419400	408800	385700	365000
14	362600	355000	356100	354700	355400	366900	393700	425900	420700	408500	383800	364500
15	361000	354700	355700	353800	355900	367400	394700	423800	419400	407800	383800	364000
16	362400	354300	354500	354700	355400	368600	397000	420200	418800	407000	383300	362800
17	363100	353100	355400	354300	354100	368400	397200	418300	419900	406500	382600	362100
18	362600	352400	355700	355200	356600	370600	396700	419600	422800	405800	381600	361400
19	360800	354300	355700	355200	355700	368400	396000	433700	425100	405000	381200	359100
20	360300	353100	356400	354300	355200	367200	398000	442200	425400	403500	380400	360100
21	359600	352400	354700	352900	353800	369300	397700	443600	425400	403000	380700	359400
22	359800	350800	355400	354500	354300	369800	395500	441400	425100	402300	379200	358200
23	359100	354500	355000	354100	355700	370600	397700	439800	424300	401300	378300	356600
24	358200	356400	356100	353600	353800	370600	397000	438400	423300	399800	377300	361900
25	356800	353100	354500	354500	356600	373200	396500	436600	422800	399000	377300	357700
26	357300	352000	354700	352400	361700	372200	396200	432700	422000	398200	376300	356800
27	356600	352000	355200	356100	362600	372200	395700	431100	420900	397700	375600	356100
28	355700	352900	353800	355900	361900	374900	396000	431600	420700	396500	375100	355400
29	355200	352200	353600	355900	364000	377500	395000	428800	419100	396700	374900	354700
30	358900	351300	354300	355400	---	375600	394000	426900	418100	395700	374600	354300
31	359400	---	353800	355700	---	375900	---	425100	---	395000	373400	---
MAX	368400	363800	356600	356400	364000	377500	398000	443600	427500	417000	394200	373200
MIN	355200	350800	349400	350600	353800	363300	376800	396700	418100	395000	373400	354300
(+)	342.86	342.51	342.62	342.70	343.06	343.55	344.29	345.51	345.24	344.33	343.45	342.64
(@)	-9700	-8100	+2500	+1900	+8300	+11900	+18100	+31100	-7000	-23100	-21600	-19100

WTR YR 2000 MAX 443600 MIN 349400 (@) -14800

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08031400 LAKE PALESTINE NEAR FRANKSTON, TX--Continued



08032000 NECHES RIVER NEAR NECHES, TX

LOCATION.--Lat 31°53′32", long 95°25′50", Anderson-Cherokee County line, Hydrologic Unit 12020001, on left bank just downstream from bridge on U.S. Highway 79, 1.0 mi downstream from Missouri Pacific Railroad Co. bridge, 1.4 mi downstream from Walnut Creek, 4.4 mi northeast of Neches and at mile 333.2.

DRAINAGE AREA.--1,145 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Feb 1939 to current year.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 264.06 ft above sea level. Prior to Oct 27, 1945, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of the contributing drainage area has been regulated by Lake Palestine (station 08031400) 11 mi upstream and by Lake Athens (station 08031290) 50 mi upstream (combined conservation pool 440,740 acre-ft). No known diversions. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--22 years (water years 1940-61), 804 ft^3/s (502,500 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1940-61).--Maximum discharge, 45,500 ft^3/s, Apr 2, 1945, gage height, 22.07 ft; no flow Oct 3-5, 1939.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1908 (stage 24.3 ft) was the highest since flood in May 1884, which was probably higher.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	108	143	136	172	208	182	297	102	1540	584	114	98
2	106	128	156	172	202	181	252	159	1250	518	112	98
3	106	126	148	173	194	175	339	192	1030	462	112	97
4	106	124	150	171	187	170	433	351	933	414	112	95
5	106	123	165	167	182	164	353	915	1140	368	111	94
6	105	122	169	165	176	160	289	1030	1260	335	111	93
7	105	120	158	170	174	158	230	1120	1270	300	110	93
8	105	118	157	224	172	158	201	1250	1160	270	109	90
9	106	118	164	286	170	158	205	1400	1020	244	109	95
10	106	119	185	253	169	157	159	1580	894	203	109	96
11	106	119	183	233	169	174	146	1730	806	168	108	96
12	105	120	202	217	168	174	319	1750	842	148	108	95
13	105	120	344	200	166	163	627	1620	872	138	106	97
14	106	120	311	187	163	158	512	1510	864	129	104	101
15	105	121	258	178	162	158	424	1410	787	125	104	98
16	104	122	241	176	162	163	318	1210	712	120	104	97
17	104	122	218	174	165	194	237	984	663	115	104	97
18	105	123	205	173	167	249	195	757	651	111	104	98
19	108	125	200	171	176	255	170	705	714	109	103	97
20	110	126	194	168	171	229	153	1150	831	107	102	97
21	108	129	192	165	166	199	142	1680	929	113	102	102
22	107	128	189	164	163	242	136	2320	972	120	102	99
23	107	132	184	164	178	267	121	3090	983	130	103	96
24	107	141	180	164	202	240	117	3400	960	127	103	96
25	107	142	178	162	190	208	115	3450	900	122	103	97
26	108	143	177	176	199	213	106	3260	836	118	102	97
27	108	141	176	172	259	225	102	2940	776	116	101	96
28	108	140	175	198	214	190	102	2630	726	115	100	97
29	108	139	175	226	187	201	97	2350	680	115	99	96
30	114	138	173	219	---	400	93	2120	648	115	99	96
31	139	---	172	215	---	361	---	1850	---	115	98	---
TOTAL	3338	3832	5915	5855	5261	6326	6990	50015	27649	6274	3268	2894
MEAN	108	128	191	189	181	204	233	1613	922	202	105	96.5
MAX	139	143	344	286	259	400	627	3450	1540	584	114	102
MIN	104	118	136	162	162	157	93	102	648	107	98	90
AC-FT	6620	7600	11730	11610	10440	12550	13860	99200	54840	12440	6480	5740

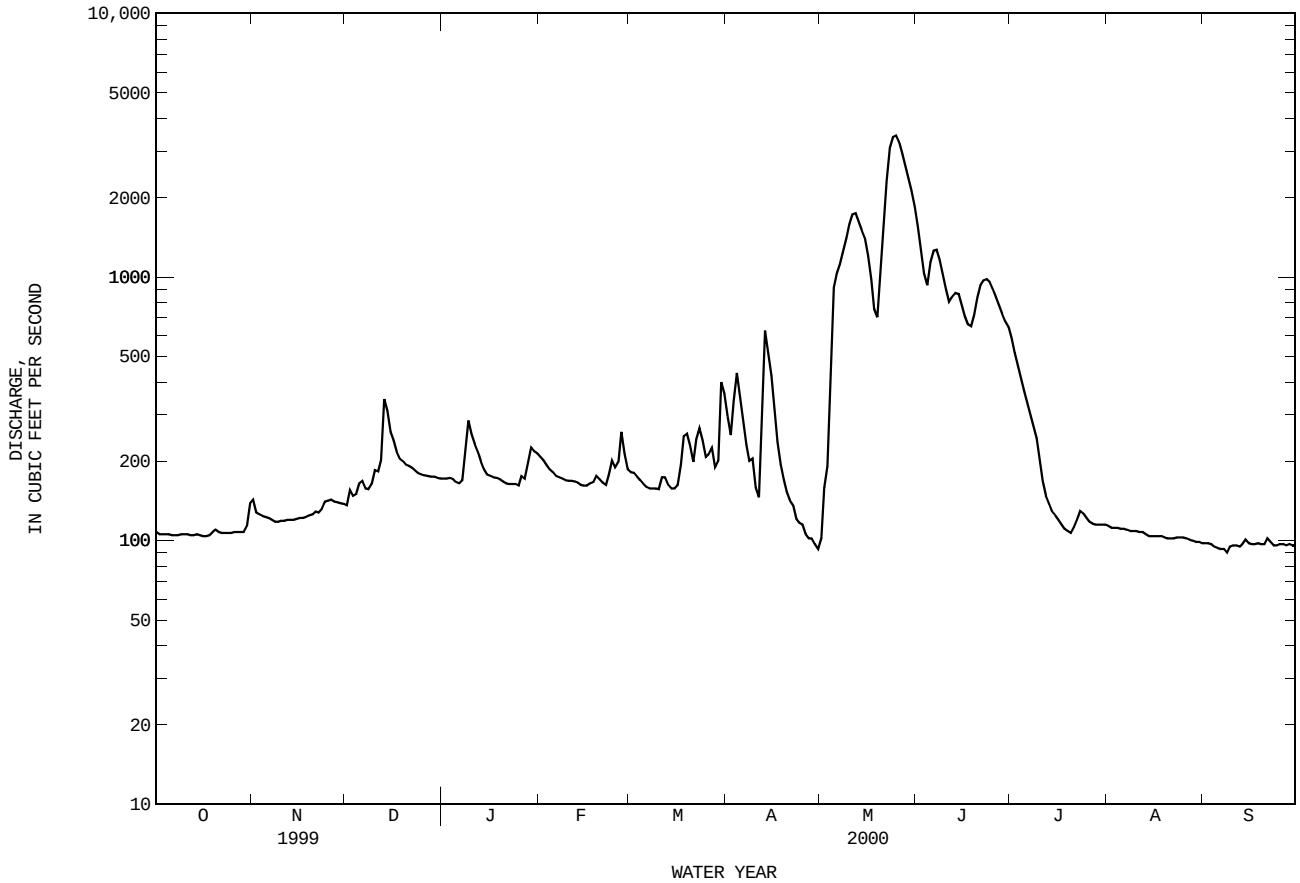
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000z, BY WATER YEAR (WY)

MEAN	220	420	771	894	1080	1233	1199	1261	776	220	119	192
MAX	2064	2559	3344	4389	3097	2879	4162	5289	4129	1076	617	1313
(WY)	1974	1975	1992	1998	1992	1987	1966	1968	1973	1976	1979	1973
MIN	12.8	16.0	82.1	102	180	92.0	60.1	43.3	23.7	12.5	9.70	8.37
(WY)	1964	1964	1990	1981	1981	1972	1972	1972	1971	1964	1964	1964

08032000 NECHES RIVER NEAR NECHES, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000z	
ANNUAL TOTAL	235671		127617			
ANNUAL MEAN	646		349		696	
HIGHEST ANNUAL MEAN					1358	1995
LOWEST ANNUAL MEAN					106	1972
HIGHEST DAILY MEAN	8560	Jan 30	3450	May 25	26200	May 13 1968
LOWEST DAILY MEAN	104	Sep 19	90	Sep 8	3.3	Nov 1 1963
ANNUAL SEVEN-DAY MINIMUM	105	Sep 18	94	Sep 4	3.4	Oct 29 1963
INSTANTANEOUS PEAK FLOW			3530	May 25	26900	May 13 1968
INSTANTANEOUS PEAK STAGE			14.84	May 25	19.46	May 13 1968
INSTANTANEOUS LOW FLOW			88	Sep 8		
ANNUAL RUNOFF (AC-FT)	467500		253100		504500	
10 PERCENT EXCEEDS	1250		930		1730	
50 PERCENT EXCEEDS	458		165		253	
90 PERCENT EXCEEDS	107		102		57	

z Period of regulated streamflow.



WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Dec 1969 to current year.
BIOCHEMICAL DATA: Oct 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Dec 1969 to Sep 1991.
WATER TEMPERATURE: Dec 1983 to Sep 1991.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE (1974-88): Maximum, 1,190 microsiemens, Aug 29, 1976; minimum 65 microsiemens, Jun 1, 1990.
WATER TEMPERATURE: Maximum, 36.0°C, Jul 16, 1985; minimum, 0.0°C, Dec 24, 25, 1989.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	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)
JAN										
19...	1425	172	190	6.8	15.0	7.0	70	42	16	10
MAR										
02...	1220	180	188	7.9	17.0	9.1	94	41	20	9.6
APR										
06...	1325	281	165	6.2	17.5	7.8	81	35	15	7.7
MAY										
10...	0808	1540	188	6.8	23.0	6.8	80	40	19	10
JUN										
22...	1113	971	179	6.6	29.0	7.7	100	42	20	11
AUG										
30...	0955	99	198	6.4	28.5	6.4	82	43	12	11

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
JAN										
19...	4.1	15	1	4.4	--	26	22	24	.12	18
MAR										
02...	4.0	15	1	4.4	--	21	21	23	<.10	15
APR										
06...	3.8	15	1	3.7	--	20	16	24	<.10	18
MAY										
10...	3.8	14	1	4.8	--	21	24	21	.10	11
JUN										
22...	3.8	15	1	4.4	22	--	21	20	.12	9.6
AUG										
30...	3.8	16	1	4.8	31	31	19	20	.17	12

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
JAN										
19...	114	--	<.010	.125	<.020	--	.29	<.050	<.010	--
MAR										
02...	106	--	<.010	.055	<.020	--	.31	<.050	<.010	--
APR										
06...	100	--	<.010	.093	.039	.42	.46	<.050	.012	.04
MAY										
10...	103	--	<.010	<.050	<.020	--	.47	<.050	<.010	--
JUN										
22...	98	--	<.010	.085	.038	.35	.39	<.050	<.010	--
AUG										
30...	106	.155	.010	.165	.030	.40	.43	<.050	<.010	--

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08032200 LAKE JACKSONVILLE NEAR JACKSONVILLE, TX

LOCATION.--Lat 31°54′30", long 95°18′30", Cherokee County, Hydrologic Unit 12020001, on concrete deck of City of Jacksonville pump platform, on Gum Creek, 2.0 mi upstream of Pine Grove, and 5.0 mi southwest of Jacksonville.

DRAINAGE AREA.--34 mi^2.

PERIOD OF RECORD.--May 1999 to current year.

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

REMARKS.--No estimated daily content. Records good. The lake is formed by a rolled earthfill dam 2,700 ft long, including a 350-ft uncontrolled spillway. Deliberate impoundment began in Jun 1957. The uncontrolled spillway is an excavated channel cut through natural ground and located at the right end of the dam. The low-flow outlet consists of an 18-inch concrete pressure pipe through the dam with valve on the upstream side. Water is used for municipal and recreational purposes in the Jacksonville area. There are no known diversions. Conservation pool storage is 30,500 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	438.0
Crest of uncontrolled spillway	431.0
Top of conservation pool	421.8
Lowest gated outlet (invert)	372.0

COOPERATION.--The capacity table was obtained from Texas Water Development Board Report 126, "Engineering Data on Dams and Reservoirs in Texas", Part I, Nov 1973.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 31,470 acre-ft, May 4, 2000, elevation, 422.48 ft; minimum contents, 26,610 acre-ft, Sep 30, 2000, elevation, 418.84 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 30,930 acre-ft, May 17, elevation, 422.09 ft; minimum contents, 28,420 acre-ft, Sep 28, elevation, 420.30 ft.

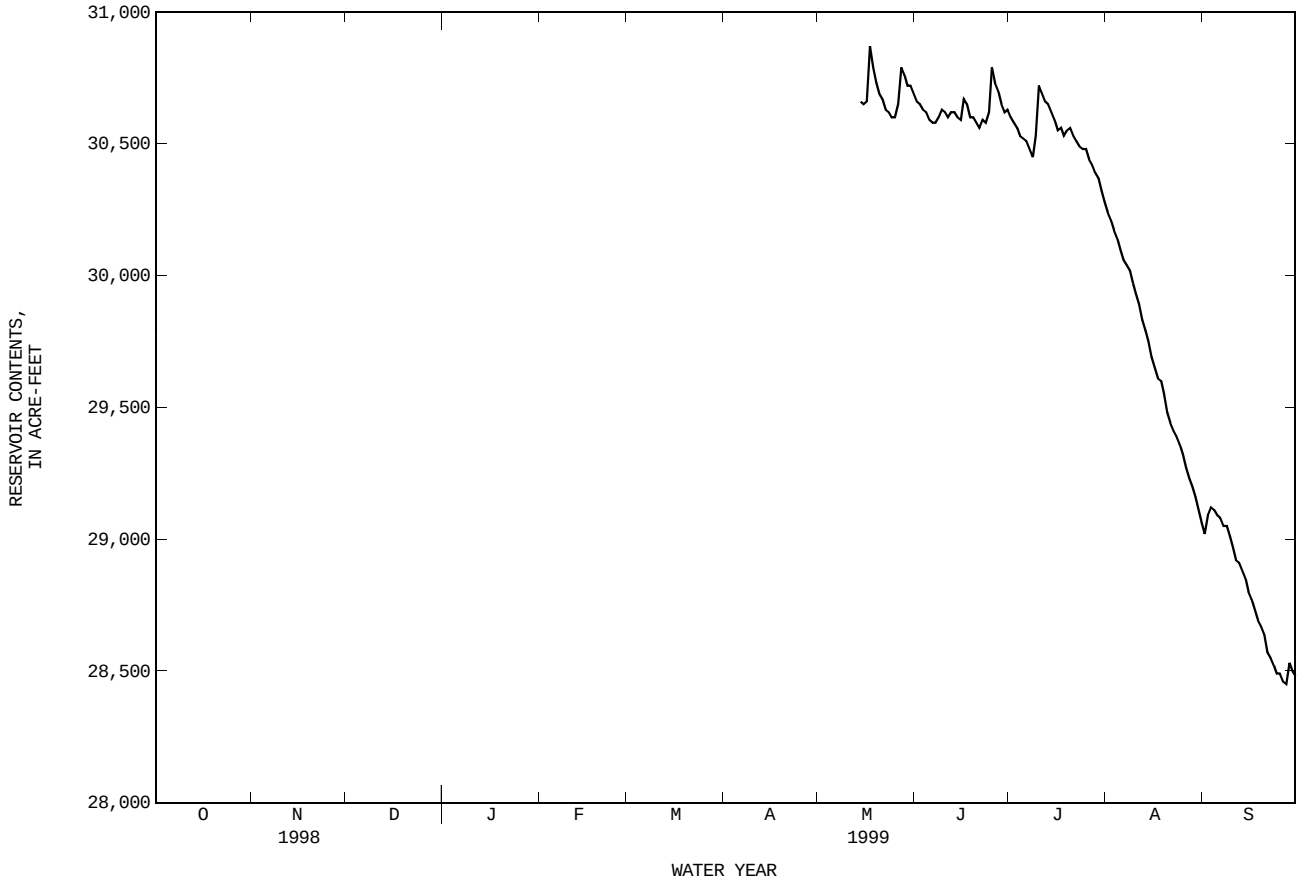
EXTREMES FOR CURRENT YEAR.--Maximum contents, 31,470 acre-ft, May 4, elevation, 422.48 ft; minimum contents, 26,610 acre-ft, Sep 30, elevation, 418.84 ft.

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	30660	30600	30240	29020
2	---	---	---	---	---	---	---	---	30650	30580	30210	29090
3	---	---	---	---	---	---	---	---	30630	30560	30170	29120
4	---	---	---	---	---	---	---	---	30620	30530	30140	29110
5	---	---	---	---	---	---	---	---	30590	30520	30100	29090
6	---	---	---	---	---	---	---	---	30580	30510	30060	29080
7	---	---	---	---	---	---	---	---	30580	30480	30040	29050
8	---	---	---	---	---	---	---	---	30600	30450	30020	29050
9	---	---	---	---	---	---	---	---	30630	30530	29970	29010
10	---	---	---	---	---	---	---	---	30620	30720	29930	28970
11	---	---	---	---	---	---	---	---	30600	30690	29890	28920
12	---	---	---	---	---	---	---	---	30620	30660	29830	28910
13	---	---	---	---	---	---	---	---	30620	30650	29790	28880
14	---	---	---	---	---	---	---	30660	30600	30620	29750	28850
15	---	---	---	---	---	---	---	30650	30590	30590	29690	28800
16	---	---	---	---	---	---	---	30660	30670	30550	29650	28770
17	---	---	---	---	---	---	---	30870	30650	30560	29610	28730
18	---	---	---	---	---	---	---	30790	30600	30530	29600	28690
19	---	---	---	---	---	---	---	30730	30600	30550	29550	28670
20	---	---	---	---	---	---	---	30690	30580	30560	29480	28640
21	---	---	---	---	---	---	---	30670	30560	30530	29440	28570
22	---	---	---	---	---	---	---	30630	30590	30510	29410	28550
23	---	---	---	---	---	---	---	30620	30580	30490	29390	28520
24	---	---	---	---	---	---	---	30600	30620	30480	29360	28490
25	---	---	---	---	---	---	---	30600	30790	30480	29320	28490
26	---	---	---	---	---	---	---	30650	30730	30440	29270	28460
27	---	---	---	---	---	---	---	30790	30700	30420	29230	28450
28	---	---	---	---	---	---	---	30760	30650	30390	29200	28530
29	---	---	---	---	---	---	---	30720	30620	30370	29160	28500
30	---	---	---	---	---	---	---	30720	30630	30320	29110	28480
31	---	---	---	---	---	---	---	30690	---	30280	29060	---
MAX	---	---	---	---	---	---	---	---	30790	30720	30240	29120
MIN	---	---	---	---	---	---	---	---	30560	30280	29060	28450
(+)								421.92	421.88	421.63	420.76	420.34
(@)									-60	-350	-1220	-580

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08032200 LAKE JACKSONVILLE NEAR JACKSONVILLE, TX--Continued



08032200 LAKE JACKSONVILLE NEAR JACKSONVILLE, TX--Continued

RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

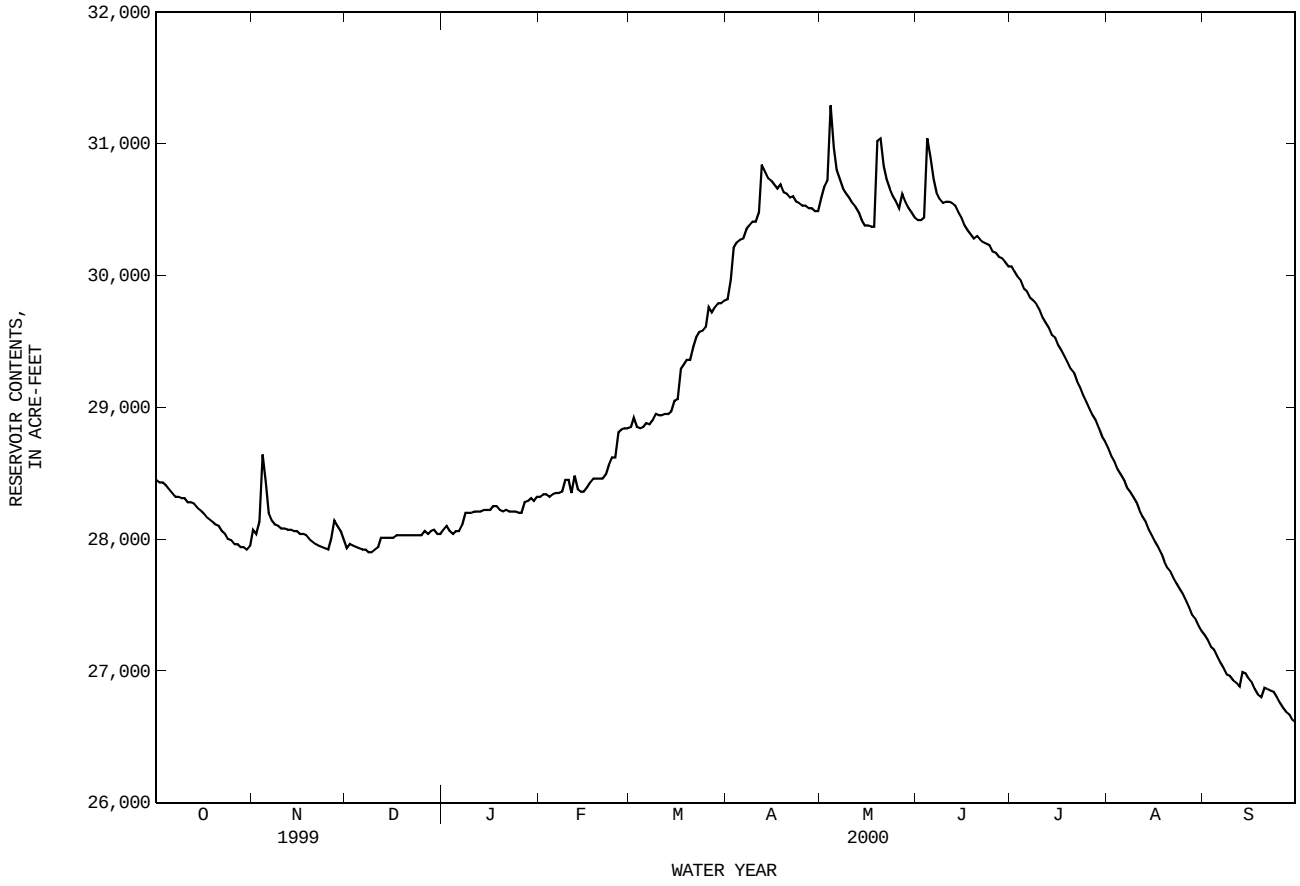
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28450	28070	e27930	28070	28320	28850	29820	30590	30420	30070	28690	27270
2	28430	28040	e27960	28100	28340	28920	29970	30670	30420	30030	28630	27230
3	28430	28130	e27950	28060	28340	28850	30210	30720	30440	29990	28590	27180
4	28410	28640	e27940	28040	28320	28840	30250	31290	31040	29960	28530	27160
5	28380	28430	e27930	28060	28340	28850	30270	30970	30900	29900	28490	27110
6	28350	28200	e27920	28060	28350	28880	30280	30800	30730	29880	28450	27060
7	28320	e28140	e27920	28110	28350	28870	30350	30730	30630	29830	28390	27020
8	28320	e28110	27900	28200	28360	28900	30380	30660	30580	29810	28360	26970
9	28310	e28100	27900	28200	28450	28950	30410	30620	30550	29780	28320	26960
10	28310	e28080	27920	28200	28450	28940	30410	30590	30560	29740	28280	26930
11	28280	e28080	27940	28210	28350	28940	30480	30550	30560	29680	28220	26910
12	28280	e28070	28010	28210	28480	28950	30840	30520	30550	29640	28170	26880
13	28270	e28070	28010	28210	28380	28950	30790	30480	30530	29600	28130	26990
14	28240	e28060	28010	28220	28360	28970	30740	30420	30480	29550	28070	26980
15	28220	e28060	28010	28220	28360	29050	30720	30380	30440	29530	28030	26940
16	28200	e28040	28010	28220	28390	29060	30690	30380	30380	29470	27980	26910
17	28170	e28040	28030	28250	28430	29290	30660	30370	30340	29430	27940	26860
18	28150	e28030	28030	28250	28460	29320	30690	30370	30310	29390	27890	26820
19	28130	e28000	28030	28220	28460	29360	30630	31020	30280	29340	27830	26800
20	28110	e27980	28030	28210	28460	29360	30620	31040	30300	29290	27780	26870
21	28100	e27960	28030	28220	28460	29460	30590	30830	30270	29260	27750	26860
22	28060	e27950	28030	28210	28490	29530	30600	30730	30250	29200	27700	26850
23	28040	e27940	28030	28210	28560	29570	30560	30660	30240	29150	27660	26840
24	28000	e27930	28030	28210	28620	29580	30550	30600	30230	29090	27620	26800
25	27990	e27920	28030	28200	28620	29610	30530	30560	30180	29040	27580	26760
26	27960	e28000	28060	28200	28810	29760	30530	30510	30170	28990	27530	26720
27	27960	e28140	28040	28280	28830	29720	30510	30620	30140	28940	27480	26690
28	27940	e28100	28060	28290	28840	29760	30510	30560	30130	28900	27420	26670
29	27940	e28060	28070	28310	28840	29790	30490	30510	30100	28840	27390	26630
30	27920	e28000	28040	28290	---	29790	30490	30480	30070	28780	27340	26610
31	27950	---	28040	28320	---	29810	---	30440	---	28740	27300	---
MAX	28450	28640	28070	28320	28840	29810	30840	31290	31040	30070	28690	27270
MIN	27920	27920	27900	28040	28320	28840	29820	30370	30070	28740	27300	26610
(+)	419.96	420.00	420.03	420.23	420.60	421.29	421.78	421.74	421.48	420.53	419.42	418.84
(@)	-530	+50	+40	+280	+560	+970	+680	-50	-370	-1330	-1440	-690

WTR YR 2000 MAX 31290 MIN 26610 (@) -1870

e Estimated

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08032200 LAKE JACKSONVILLE NEAR JACKSONVILLE, TX--Continued



08033000 NECHES RIVER NEAR DIBOLL, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°07′58", long 94°48′35", Angelina-Polk County line, Hydrologic Unit 12020002, near center of main span of downstream bridge on U.S. Highway 59, 700 ft downstream from Texas and New Orleans Railroad Co. bridge, 2.9 mi downstream from Alabama Creek, 3.8 mi south of Diboll and at mile 203.5.

DRAINAGE AREA.--2,724 mi^2.

PERIOD OF RECORD.--Oct 1923 to Sep 1925, Mar 1939 to Sep 1985. Monthly discharge only for some periods, published in WSP 1312. Oct 1985 to Sep 1989 (annual maximum), Oct 1989 to current year (peak discharges greater than base discharge).
Water-quality records.--Chemical data: Oct 1969 to Sep 1981. Biochemical data: Oct 1969 to Sep 1981. Specific conductance: Oct 1969 to Sep 1981. Water temperature: Oct 1969 to Sep 1981.

REVISED RECORDS.--WSP 1242: 1950. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 136.46 ft above sea level. Prior to Jul 10, 1925, nonrecording gage at site 630 ft upstream; Jul 10 to Aug 31, 1925, and Mar 30, 1939, to Sep 24, 1943, nonrecording gage at site 500 ft upstream; Sep 25, 1943, to Aug 16, 1973, nonrecording gage at site 70 ft upstream. Satellite telemeter at station.

REMARKS.--Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine (station 08031400, conservation pool storage 411,300 acre-ft) 140 mi upstream and by Lake Athens (station 08031290, conservation pool storage 29,440 acre-ft) 180 mi upstream.

AVERAGE DISCHARGE.--26 years (water years 1923-25, 1939-61) unregulated, 1,807 ft^3/s (1,309,000 acre-ft/yr); 24 years (water years 1962-85) regulated, 1,353 ft^3/s (980,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,900 ft^3/s, May 4, 1944, gage height, 18.70 ft; no flow Aug 15-22, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1874, 21 ft in May 1884 (discharge, about 110,000 ft^3/s) from rating curve extended above 40,000 ft^3/s; flood in 1900 reached a stage of 19.9 ft (discharge, about 80,000 ft^3/s), from information by local residents.

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

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

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08033500 NECHES RIVER NEAR ROCKLAND, TX
(Hydrologic index station)

LOCATION.--Lat 31°01'29", long 94°23'55", Tyler County, Hydrologic Unit 12020003, on downstream side of bridge at U.S. Highway 69, 2,200 ft upstream from abandoned ferry crossing, 0.8 mi upstream from Texas and New Orleans Railway Co. bridge, 1.2 mi north of Rockland, 3.2 mi downstream from Billiams Creek and 32.4 mi upstream from Angelina River.

DRAINAGE AREA.--3,636 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1903 to current year.

REVISED RECORDS.--WSP 878: 1926-27. WSP 1342: 1922(M), 1935. WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 88.41 ft above sea level. Prior to May 23, 1973, nonrecording gage located 2,200 ft downstream at datum 3.00 ft higher. May 23, 1973, to Sep 30, 1975, recording gage at present site at datum 3.00 ft higher. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1962, at least 10% of contributing drainage area has been regulated by Lake Palestine (station 08031400) and by Lake Athens (station 08031290), combined conservation pool storage 440,740 acre-feet. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--58 years (water years 1904-61), 2,362 ft^3/s (1,711,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1904-61).--Maximum discharge, 49,800 ft^3/s May 6, 1944 (gage height, 35.04 ft), present site; minimum observed during period of daily records, 1.6 ft^3/s Sep 28-30, and Oct 1, 2, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Historical flood information begins with flood in May 1884, which reached a stage of 38.0 ft, present site, from information by local resident (discharge, about 62,000 ft^3/s).

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	206	177	186	250	288	392	899	336	1880	1220	137	91
2	299	174	184	247	314	428	1550	708	1930	1170	134	91
3	274	160	208	243	341	472	3470	1970	2000	1110	132	91
4	259	158	249	235	350	466	3520	1800	2060	1030	139	91
5	253	152	361	235	350	443	2550	3360	2500	934	135	91
6	207	156	315	239	348	418	2060	3250	2920	863	128	88
7	173	170	258	233	351	379	1780	2830	2780	798	121	86
8	279	181	254	235	357	346	1500	2580	2810	728	116	86
9	519	182	290	240	341	322	1320	2570	2860	655	117	90
10	269	178	379	238	325	322	1270	3880	2730	587	114	97
11	224	171	400	242	311	537	1310	4520	2940	526	110	103
12	204	164	401	271	301	450	1320	3990	3300	479	112	104
13	188	158	474	349	297	515	1270	3920	3250	436	110	133
14	165	156	440	422	291	546	1250	3880	2960	399	104	137
15	149	158	432	449	287	520	1470	3480	2410	360	102	120
16	143	155	427	448	282	1250	1590	2860	2000	324	102	104
17	139	153	455	421	278	511	1620	2330	1790	287	101	94
18	131	155	500	382	277	426	1600	1960	1650	255	99	90
19	135	153	497	346	278	447	1560	1810	1580	227	98	91
20	141	150	471	315	275	522	1480	1910	1570	205	97	92
21	136	150	448	292	272	651	1360	2370	1490	188	97	93
22	134	152	417	278	275	754	1170	2720	1310	176	97	122
23	133	156	378	273	289	750	943	2630	1170	164	96	131
24	132	177	343	264	302	741	761	2460	1090	155	99	114
25	128	180	319	256	308	776	627	2330	1020	146	96	110
26	129	186	301	249	311	890	540	2170	974	139	95	121
27	133	177	290	252	323	1010	475	1990	960	132	95	119
28	133	190	283	297	330	1110	426	1870	979	123	93	119
29	132	202	276	295	355	1070	388	1820	1030	116	92	124
30	135	194	267	285	---	1050	359	1810	1140	132	91	120
31	158	---	257	278	---	989	---	1840	---	133	91	---
TOTAL	5840	5025	10760	9059	9007	19503	41438	77954	59083	14197	3350	3143
MEAN	188	168	347	292	311	629	1381	2515	1969	458	108	105
MAX	519	202	500	449	357	1250	3520	4520	3300	1220	139	137
MIN	128	150	184	233	272	322	359	336	960	116	91	86
AC-FT	11580	9970	21340	17970	17870	38680	82190	154600	117200	28160	6640	6230

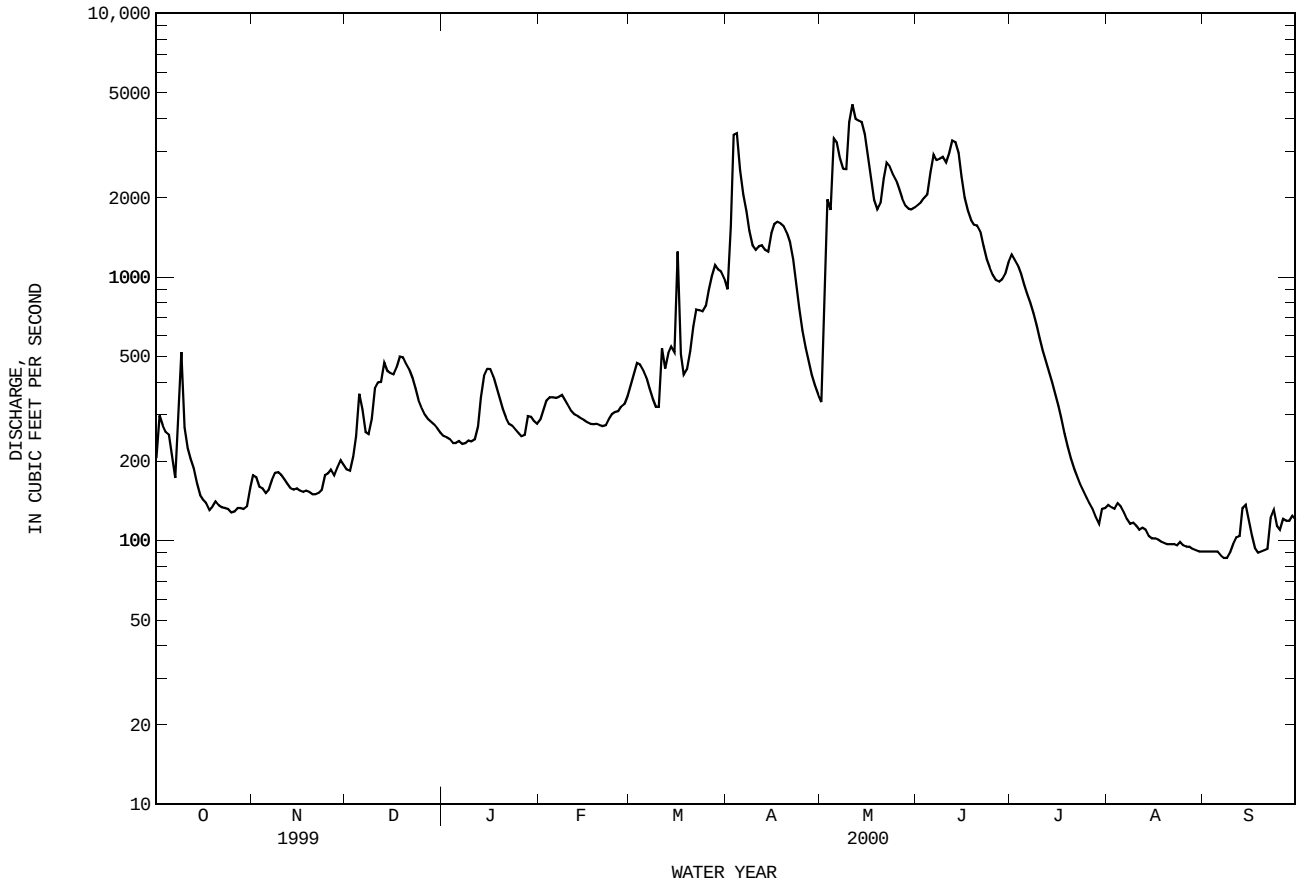
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1962 - 2000z, BY WATER YEAR (WY)

MEAN	805	1259	2494	3681	3967	4007	3659	3787	2585	1124	387	457
MAX	10620	7673	8982	13170	13930	13750	11990	12730	10360	11260	2673	3042
(WY)	1995	1999	1995	1998	1992	1992	1979	1969	1990	1989	1991	1979
MIN	36.6	65.8	213	263	311	395	282	307	102	42.9	34.2	43.1
(WY)	1964	1965	1981	1981	2000	1996	1971	1996	1971	1971	1964	1964

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1962 - 2000z	
ANNUAL TOTAL	907889		258359			
ANNUAL MEAN	2487		706		2343	
HIGHEST ANNUAL MEAN					5328	1995
LOWEST ANNUAL MEAN					352	1971
HIGHEST DAILY MEAN	25300	Feb 4	4520	May 11	41600	Jul 2 1989
LOWEST DAILY MEAN	89	Sep 26	86	Sep 7	18	Aug 30 1970
ANNUAL SEVEN-DAY MINIMUM	91	Sep 22	89	Sep 3	23	Jul 21 1971
INSTANTANEOUS PEAK FLOW			4680	May 11	42300	Oct 20 1994
INSTANTANEOUS PEAK STAGE			11.14	May 11	33.29	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	1801000		512500		1697000	
10 PERCENT EXCEEDS	5820		2000		6170	
50 PERCENT EXCEEDS	1370		300		900	
90 PERCENT EXCEEDS	127		108		110	

z Period of regulated streamflow.



08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Apr 1941 to Sep 1942, Sep 1945 to Sep 1947, Dec 1967 to current year.
BIOCHEMICAL DATA: Dec 1967 to current year.
SEDIMENT DATA: 1961 to 1963.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Apr 1941 to Sep 1942, Sep 1945 to Sep 1947.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	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)
JAN											
26...	1236	258	248	6.8	11.0	17	9.2	82	43	18	10
MAR											
02...	0930	424	268	7.8	18.5	--	8.8	94	38	2	9.1
APR											
06...	0945	2060	237	6.8	17.0	--	7.9	81	40	14	10
MAY											
10...	1408	4200	114	6.8	24.0	--	6.6	79	21	5	5.3
JUL											
03...	1000	1100	210	6.7	29.0	--	7.0	91	41	15	10
AUG											
03...	0950	124	265	6.8	29.0	--	6.2	80	54	11	13

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CAC03 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	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)
JAN											
26...	4.1	26	2	4.3	--	25	30	32	.13	17	154
MAR											
02...	3.6	34	2	4.6	--	36	30	31	.14	11	--
APR											
06...	3.5	27	2	4.5	--	26	36	25	.11	14	--
MAY											
10...	1.9	10	1	3.4	--	16	17	11	<.10	9.4	--
JUL											
03...	3.8	20	1	4.3	26	--	22	24	.16	12	--
AUG											
03...	5.0	28	2	4.6	43	--	23	34	.19	12	160

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	RESIDUE TOTAL AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS-PHORUS DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS ORTHO, DIS-SOLVED (MG/L AS P) (00671)
JAN										
26...	140	19	--	<.010	.222	<.020	--	.22	<.050	.018
MAR										
02...	146	--	--	<.010	.098	<.020	--	.33	E.042	.046
APR										
06...	137	--	.274	.012	.286	.045	.58	.63	.065	.043
MAY										
10...	68	--	--	<.010	.078	<.020	--	.48	<.050	.015
JUL										
03...	112	--	--	<.010	.085	<.020	--	.42	<.050	.024
AUG										
03...	146	--	--	<.010	<.050	<.020	--	.35	<.050	<.010

08033500 NECHES RIVER NEAR ROCKLAND, TX--Continued
(Hydrologic index station)

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

DATE	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ANTI-MONY, DIS-SOLVED (UG/L AS SB) (01095)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BERYL-LIUM, DIS-SOLVED (UG/L AS BE) (01010)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)
JAN										
26...	.06	8.0	<1.0	<2	50	<1.0	<1.0	<.80	<1.0	<1.0
MAR										
02...	.14	--	--	--	--	--	--	--	--	--
APR										
06...	.13	--	--	--	--	--	--	--	--	--
MAY										
10...	.05	--	--	--	--	--	--	--	--	--
JUL										
03...	.07	--	--	--	--	--	--	--	--	--
AUG										
03...	--	1.2	<1.0	E1	62	<1.0	<1.0	<.80	<1.0	2.3

DATE	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	NICKEL, DIS-SOLVED (UG/L AS NI) (01065)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)
JAN										
26...	49	<1.0	17	<.2	<1.0	1.8	<2	<1.0	3.6	<1.0
MAR										
02...	--	--	--	--	--	--	--	--	--	--
APR										
06...	--	--	--	--	--	--	--	--	--	--
MAY										
10...	--	--	--	--	--	--	--	--	--	--
JUL										
03...	--	--	--	--	--	--	--	--	--	--
AUG										
03...	<10	<1.0	25	<.2	<1.0	2.2	<2	<1.0	2.0	<1.0

08034000 LAKE TYLER NEAR WHITEHOUSE, TX

LOCATION.--Lat 32°14'30", long 95°10'33", Smith County, Hydrologic Unit 12020004, at city of Tyler pumphouse, 2.0 mi north of Whitehouse Dam on Prairie Creek, 3.0 mi northwest of Mud Creek, and 3.2 mi northeast of Whitehouse.

DRAINAGE AREA.--107 mi^2.

PERIOD OF RECORD.--Mar 1949 to Sep 1983, Apr 1999 to current year.
Water-quality records.--Chemical data: Oct 1969 to Sep 1984.

REVISED RECORDS.--WRD TX-68-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gages. Datum of gage is sea level. Prior to May 3, 1949, nonrecording gage at dam. May 3, 1949, to Jul 11, 1951, nonrecording gage at pumphouse. Jul 12, 1951, to Feb 1, 1968, water-stage recorder at intake tower in lake 660 ft south of pumphouse. All gages at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily contents. Records good. Originally Lake Tyler was formed by Whitehouse Dam. Deliberate impoundment began Jan 8, 1949, and the dam was completed May 13, 1949. The construction of Mud Creek Dam began Feb 11, 1966, and deliberate impoundment began Nov 22, 1966; final completion of dam was in Jan 1967. Whitehouse Dam is a rolled earthfill dam with an uncontrolled concrete spillway 200 ft wide near left end of dam. Mud Creek Dam is a rolled earthfill dam with an uncontrolled concrete spillway 300 ft wide near center of dam. On May 29, 1968, the lakes were joined through an interconnecting canal. An 18-inch conduit through the embankment of Mud Creek Dam serves as a low-flow outlet. Water is used for municipal supply for the cities of Tyler, Troop, and Whitehouse. The dam is owned and operated by the city of Tyler. Conservation pool storage is 73,260 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	390.0 to 391.5
Design flood	386.0
Crest of spillway	375.4
Bottom of interconnecting canal between lakes	355.0
Lowest gated outlet (invert at Mud Creek Dam)	350.0

COOPERATION.--Capacity table was furnished by the Texas Water Development Board.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 87,340 acre-ft, Feb 3, 1975, elevation, 376.71 ft; maximum elevation, 378.3 ft, Apr 24, 1966, prior to adjoining of lakes; minimum contents since joining of lakes, 55,400 acre-ft, Sep 30, 2000, elevation, 369.59 ft.

EXTREMES FOR WATER YEAR 1999.--Maximum contents, 81,300 acre-ft, Apr 7, elevation, 375.64 ft; minimum contents, 64,900 acre-ft, Sep 30, elevation, 372.38 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 71,100 acre-ft, Jun 20, elevation, 373.62 ft; minimum contents, 55,400 acre-ft, Sep 30, elevation, 369.59 ft.

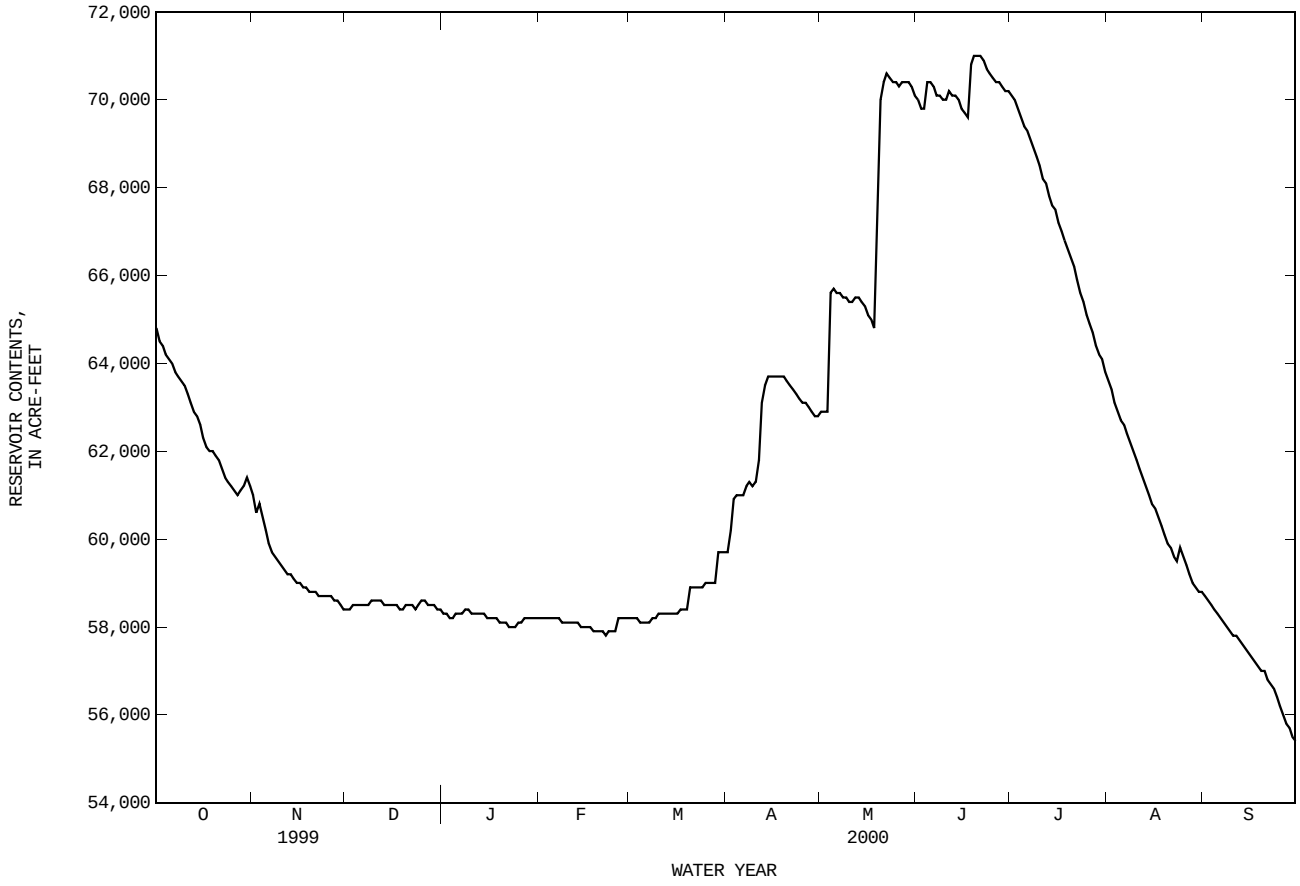
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	80700	80700	80500	76200	70100
2	---	---	---	---	---	---	---	80700	80600	80400	76700	70000
3	---	---	---	---	---	---	---	81000	80600	80400	77000	69800
4	---	---	---	---	---	---	---	81100	80500	80500	76600	69600
5	---	---	---	---	---	---	---	81000	80500	80500	76400	69500
6	---	---	---	---	---	---	---	80900	80500	80600	76100	69300
7	---	---	---	---	---	---	81300	80800	80400	80500	75800	69100
8	---	---	---	---	---	---	81100	80800	80400	80300	75500	69200
9	---	---	---	---	---	---	81000	80700	80400	80200	75200	69400
10	---	---	---	---	---	---	80900	80700	80500	80300	74800	68800
11	---	---	---	---	---	---	80800	80700	80500	80300	74500	68400
12	---	---	---	---	---	---	80800	80700	80600	80300	74200	68100
13	---	---	---	---	---	---	80800	80700	80600	80400	74000	67800
14	---	---	---	---	---	---	80900	80600	80500	80400	73700	67600
15	---	---	---	---	---	---	80900	80700	80500	80300	73500	67300
16	---	---	---	---	---	---	80800	80700	80500	80300	73300	67300
17	---	---	---	---	---	---	80700	80800	80500	80300	73100	67100
18	---	---	---	---	---	---	80600	80900	80400	80200	72800	67000
19	---	---	---	---	---	---	80600	80900	80400	80200	72600	66800
20	---	---	---	---	---	---	80600	80800	80300	80200	72300	66600
21	---	---	---	---	---	---	80600	80700	80200	80100	72000	66200
22	---	---	---	---	---	---	80600	80600	80300	80000	71900	65900
23	---	---	---	---	---	---	80600	80700	80300	79800	71700	65700
24	---	---	---	---	---	---	80600	80700	80600	79700	71500	65600
25	---	---	---	---	---	---	80600	80800	80800	79400	71300	65500
26	---	---	---	---	---	---	80700	80900	81000	79200	71000	65400
27	---	---	---	---	---	---	80800	81000	80900	79000	70900	65300
28	---	---	---	---	---	---	80800	80900	80700	78700	70700	65200
29	---	---	---	---	---	---	80600	80800	80600	78300	70500	65100
30	---	---	---	---	---	---	80600	80800	80500	78000	70400	64900
31	---	---	---	---	---	---	---	80700	---	77400	70300	---
MAX	---	---	---	---	---	---	---	81100	81000	80600	77000	70100
MIN	---	---	---	---	---	---	---	80600	80200	77400	70300	64900
(+)							375.30	375.37	375.27	374.63	373.45	372.38
(@)								+100	-200	-3100	-7100	-5400

WTR YR 1999 MAX 81300 MIN 64900

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08034000 LAKE TYLER NEAR WHITEHOUSE, TX--Continued



08034000 LAKE TYLER NEAR WHITEHOUSE, TX--Continued

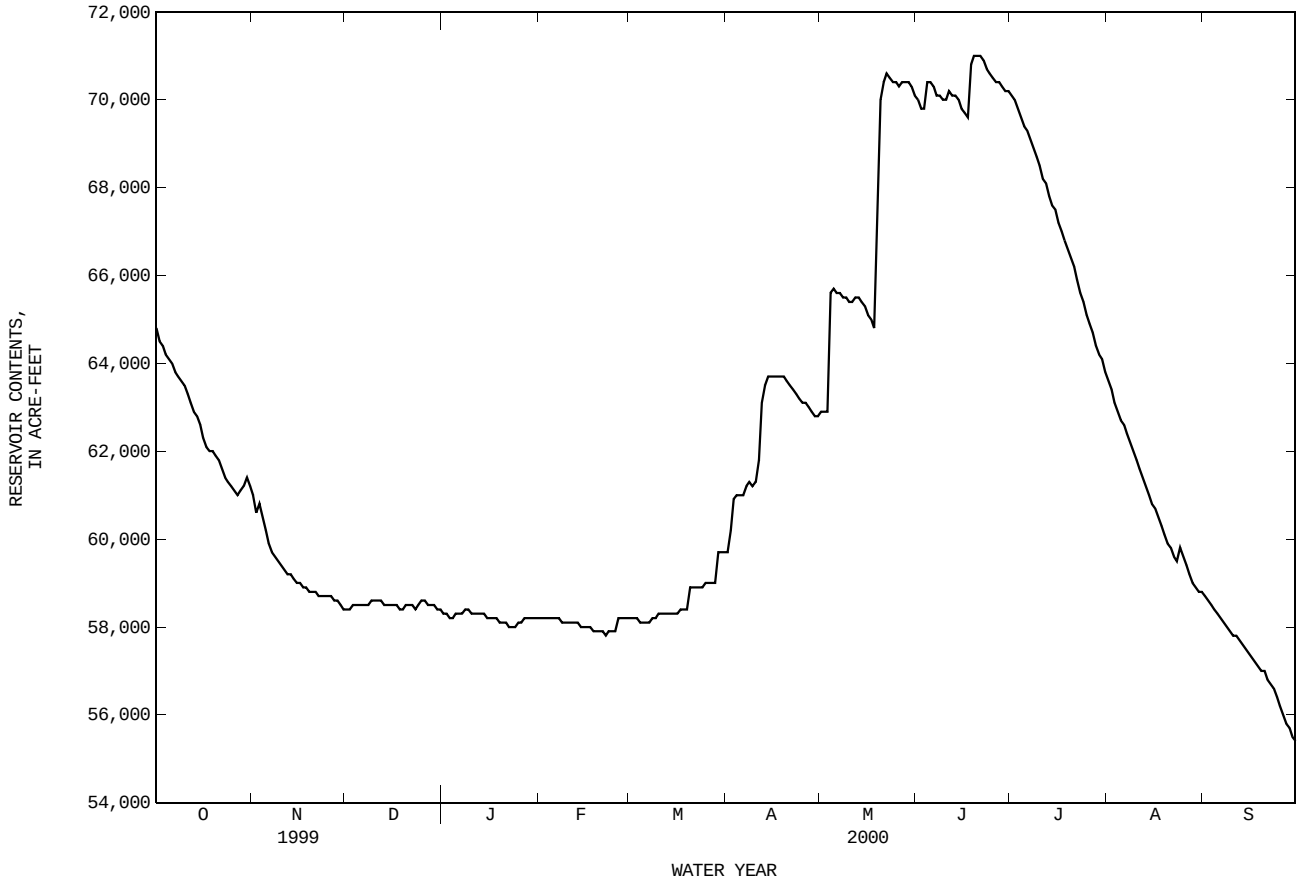
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	64800	61000	58400	58300	58200	58200	59700	62900	70000	70100	63600	58700
2	64500	60600	58400	58300	58200	58200	60200	62900	69800	70000	63400	58600
3	64400	60800	58500	58200	58200	58200	60900	62900	69800	69800	63100	58500
4	64200	60500	58500	58200	58200	58100	61000	65600	70400	69600	62900	58400
5	64100	60200	58500	58300	58200	58100	61000	65700	70400	69400	62700	58300
6	64000	59900	58500	58300	58200	58100	61000	65600	70300	69300	62600	58200
7	63800	59700	58500	58300	58200	58100	61200	65600	70100	69100	62400	58100
8	63700	59600	58500	58400	58100	58200	61300	65500	70100	68900	62200	58000
9	63600	59500	58600	58400	58100	58200	61200	65500	70000	68700	62000	57900
10	63500	59400	58600	58300	58100	58300	61300	65400	70000	68500	61800	57800
11	63300	59300	58600	58300	58100	58300	61800	65400	70200	68200	61600	57800
12	63100	59200	58600	58300	58100	58300	63100	65500	70100	68100	61400	57700
13	62900	59200	58500	58300	58100	58300	63500	65500	70100	67800	61200	57600
14	62800	59100	58500	58300	58000	58300	63700	65400	70000	67600	61000	57500
15	62600	59000	58500	58200	58000	58300	63700	65300	69800	67500	60800	57400
16	62300	59000	58500	58200	58000	58300	63700	65100	69700	67200	60700	57300
17	62100	58900	58500	58200	58000	58400	63700	65000	69600	67000	60500	57200
18	62000	58900	58400	58200	57900	58400	63700	64800	70800	66800	60300	57100
19	62000	58800	58400	58100	57900	58400	63700	67700	71000	66600	60100	57000
20	61900	58800	58500	58100	57900	58900	63600	70000	71000	66400	59900	57000
21	61800	58800	58500	58100	57900	58900	63500	70400	71000	66200	59800	56800
22	61600	58700	58500	58000	57800	58900	63400	70600	70900	65900	59600	56700
23	61400	58700	58400	58000	57900	58900	63300	70500	70700	65600	59500	56600
24	61300	58700	58500	58000	57900	58900	63200	70400	70600	65400	59800	56400
25	61200	58700	58600	58100	57900	59000	63100	70400	70500	65100	59600	56200
26	61100	58700	58600	58100	58200	59000	63100	70300	70400	64900	59400	56000
27	61000	58600	58500	58200	58200	59000	63000	70400	70400	64700	59200	55800
28	61100	58600	58500	58200	58200	59000	62900	70400	70300	64400	59000	55700
29	61200	58500	58500	58200	58200	59700	62800	70400	70200	64200	58900	55500
30	61400	58400	58400	58200	---	59700	62800	70300	70200	64100	58800	55400
31	61200	---	58400	58200	---	59700	---	70100	---	63800	58800	---
MAX	64800	61000	58600	58400	58200	59700	63700	70600	71000	70100	63600	58700
MIN	61000	58400	58400	58000	57800	58100	59700	62900	69600	63800	58800	55400
(+)	371.56	370.71	370.69	370.60	370.61	371.17	371.94	373.43	373.44	372.16	370.88	369.59
(@)	-3700	-2800	0	-200	0	+1500	+3100	+7300	+100	-6400	-5000	-3400

WTR YR 2000 MAX 71000 MIN 55400 (@) -9500

(+) Elevation, in feet, at end of month.
(@) Change in contents, in acre-feet.

08034000 LAKE TYLER NEAR WHITEHOUSE, TX--Continued



08036500 ANGELINA RIVER NEAR ALTO, TX

LOCATION.--Lat 31°40'10", long 94°57'24", Nacogdoches-Cherokee County line, Hydrologic Unit 12020004, near center of rectified channel on downstream side of bridge on State Highway 21, 0.4 mi upstream from Allen Creek, 1.5 mi upstream from Bingham Creek, 7.5 mi east of Alto, and 149.3 mi upstream from mouth.

DRAINAGE AREA.--1,276 mi^2.

PERIOD OF RECORD.--May to Aug 1940 (discharge measurements only), Sep 1940 to Mar 1949 (fragmentary for 1941-42, 1944-49), Feb 1959 to current year.
Water-quality records.--Chemical data: Nov 1961 to Sep 1963.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 204.30 ft above sea level. May 9, 1940, to Mar 31, 1949, nonrecording gage on bridge at natural channel 1,400 ft to right at same datum. Feb 18 to Sep 15, 1959, nonrecording gage at present site and datum. Satellite telemeter at station.

REMARKS.--Records good except those for estimated daily discharges, which are fair. Since installation of gage in water year 1959, at least 10% of contributing drainage area has been regulated by Striker Creek Reservoir (conservation pool storage 26,960 acre-feet). No known diversions. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1905, that of Mar 31, 1989. A flood in May 1908 reached a stage of about 22 ft, from information by local residents. Flood in 1932 reached a stage of 21.5 ft, from floodmarks and from information by local residents.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	61	54	90	134	398	483	798	248	504	234	33	14
2	81	60	87	134	405	463	931	305	417	283	33	13
3	89	87	89	136	400	469	1050	441	384	266	31	12
4	77	99	97	135	368	464	1070	1270	351	260	29	10
5	63	92	150	131	277	404	1000	1580	1300	231	29	8.8
6	52	85	206	142	220	267	987	1550	1200	211	30	7.6
7	46	77	278	230	195	201	1020	2030	1190	179	31	6.8
8	47	70	320	253	182	180	1100	2950	1250	151	30	6.1
9	57	66	259	259	176	171	995	3650	1190	133	27	5.7
10	62	62	200	374	168	169	877	3920	983	120	26	5.3
11	74	59	173	489	163	169	752	3650	803	109	25	e5.0
12	95	59	182	518	160	170	1100	3110	865	100	24	e4.9
13	85	59	233	411	158	202	1290	2550	947	92	23	e4.9
14	68	58	273	304	155	266	1460	1880	899	85	20	e5.0
15	57	59	379	254	152	276	1950	1240	703	80	e18	6.0
16	51	58	409	213	151	371	2580	859	520	75	e16	7.3
17	46	57	328	185	149	435	2870	746	445	73	e14	9.3
18	41	57	271	171	146	485	2770	689	459	70	13	16
19	40	57	245	166	155	568	2430	649	430	67	13	18
20	40	56	214	160	246	632	1980	765	487	64	12	17
21	41	58	186	168	303	633	1510	1000	492	60	11	16
22	46	62	181	246	310	617	1070	1290	422	56	10	15
23	50	65	175	289	239	545	674	1670	389	53	11	16
24	50	66	168	235	182	509	442	2200	390	50	11	20
25	50	70	161	166	177	492	351	2850	390	47	11	37
26	50	77	152	146	200	465	321	3150	344	44	11	35
27	46	87	145	142	279	568	301	3050	265	42	9.9	33
28	42	91	140	155	386	628	284	2700	216	39	13	41
29	41	96	136	196	481	697	264	2110	190	36	13	45
30	42	95	135	304	---	702	246	1420	184	34	12	39
31	48	---	135	376	---	679	---	845	---	33	14	---
TOTAL	1738	2098	6197	7222	6981	13380	34473	56367	18609	3377	603.9	479.7
MEAN	56.1	69.9	200	233	241	432	1149	1818	620	109	19.5	16.0
MAX	95	99	409	518	481	702	2870	3920	1300	283	33	45
MIN	40	54	87	131	146	169	246	248	184	33	9.9	4.9
AC-FT	3450	4160	12290	14320	13850	26540	68380	111800	36910	6700	1200	951

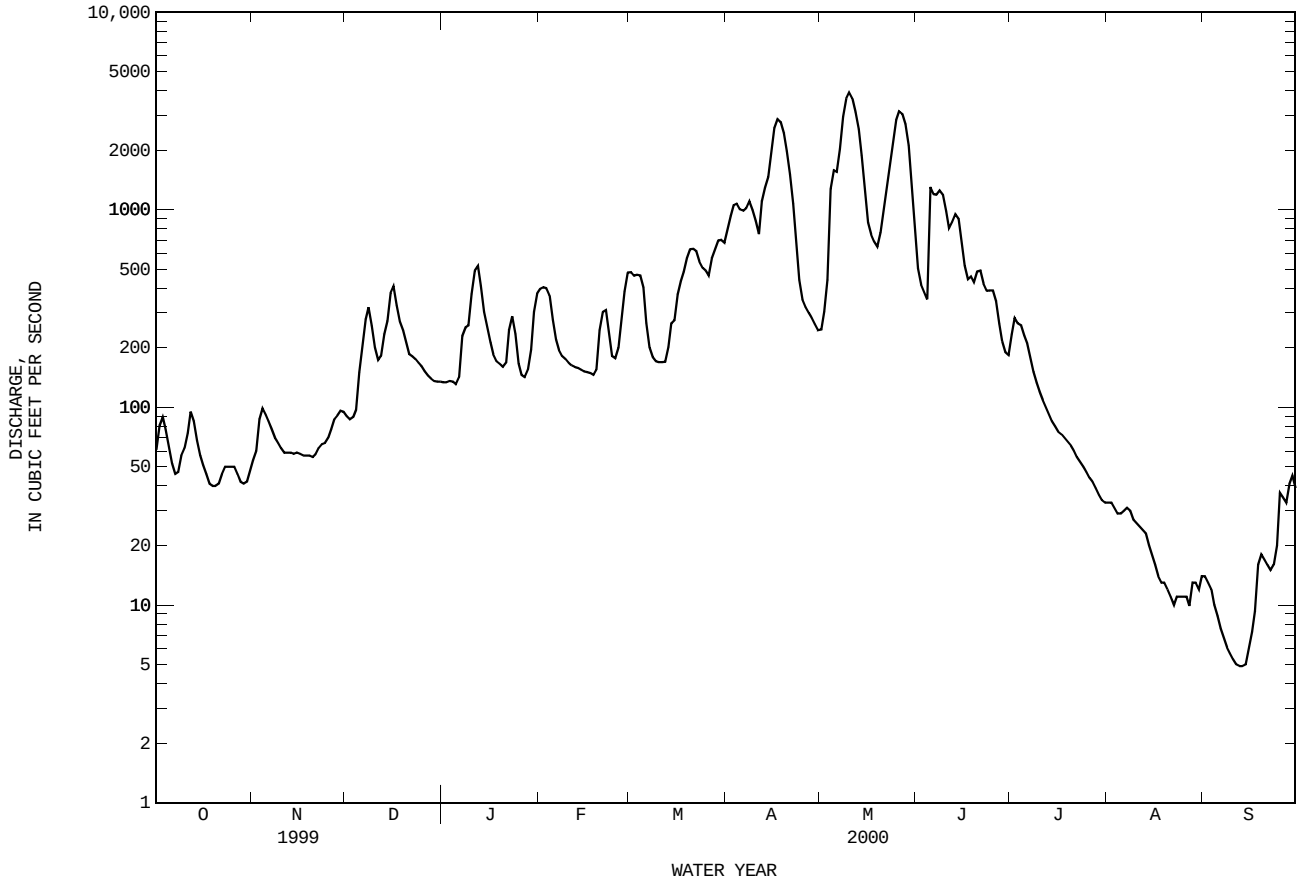
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1959 - 2000, BY WATER YEAR (WY)

MEAN	292	517	1186	1427	1650	1616	1481	1356	809	276	152	185
MAX	2350	2081	4836	4874	4642	4622	4301	4484	4316	1718	1129	950
(WY)	1974	1986	1961	1991	1983	1969	1969	1966	1993	1976	1997	1973
MIN	5.56	18.0	67.8	150	158	183	172	119	34.2	7.91	19.5	16.0
(WY)	1968	1968	1965	1981	1967	1967	1972	1972	1971	1998	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1959 - 2000	
ANNUAL TOTAL	416447		151525.6			
ANNUAL MEAN	1141		414		906	
HIGHEST ANNUAL MEAN					1917	1991
LOWEST ANNUAL MEAN					154	1964
HIGHEST DAILY MEAN	23700	Feb 1	3920	May 10	41600	Mar 31 1989
LOWEST DAILY MEAN	35	Sep 24	4.9	Sep 12	.00	Jul 30 1998
ANNUAL SEVEN-DAY MINIMUM	37	Sep 21	5.3	Sep 9	.15	Jul 28 1998
INSTANTANEOUS PEAK FLOW			3950	May 10	42500	Mar 31 1989
INSTANTANEOUS PEAK STAGE			16.71	May 10	23.20	Mar 31 1989
ANNUAL RUNOFF (AC-FT)	826000		300600		656200	
10 PERCENT EXCEEDS	2570		1100		2320	
50 PERCENT EXCEEDS	482		169		338	
90 PERCENT EXCEEDS	48		16		49	

e Estimated

08036500 ANGELINA RIVER NEAR ALTO, TX--Continued



08036700 LAKE NACOGDOCHES NEAR NACOGDOCHES, TX

LOCATION.--Lat 31°35′19", long 94°49′31", Nacogdoches County, Hydrologic Unit 12020004, at upstream side of dam on Bayou Loco near service outlet tower and 10 mi west of Nacogdoches.

DRAINAGE AREA.--87.9 mi^2.

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

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

REMARKS.--No estimated daily contents. Records good. The lake is formed by a rolled earthfill dam. Deliberate impoundment began Jul 14, 1976. Water is used for industrial and municipal supply by the city of Nacogdoches. The spillway is an uncontrolled 500-foot-wide cut through natural ground located near the right end of dam. There is an uncontrolled drop inlet with a 20.5-foot-diameter top opening that is connected to an 8 by 7-foot conduit that extends through the dam. A separate multi-gated inlet tower is connected to a valve by a 30-inch conduit through the dam. The valve box directs water to a purification plant. Conservation pool storage is 39,523 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	303.0
Top of design flood	298.5
Crest of spillway	286.0
Crest of drop inlet (top of conservation pool)	279.0
Lowest gated outlet (invert of 30 in. conduit)	238.25

COOPERATION.--The capacity table, dated Mar 1994, was furnished by the Texas Water Development Board, and put into effect Jun 16, 1994.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 58,730 acre-ft, Jan 30, 1999, elevation, 286.67 ft; minimum contents after initial filling, 20,540 acre-ft, Nov 26, 1977, elevation, 266.62 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 40,090 acre-ft, Jun 6, elevation, 279.26 ft; minimum contents, 32,730 acre-ft, Sep 30, elevation, 275.66 ft.

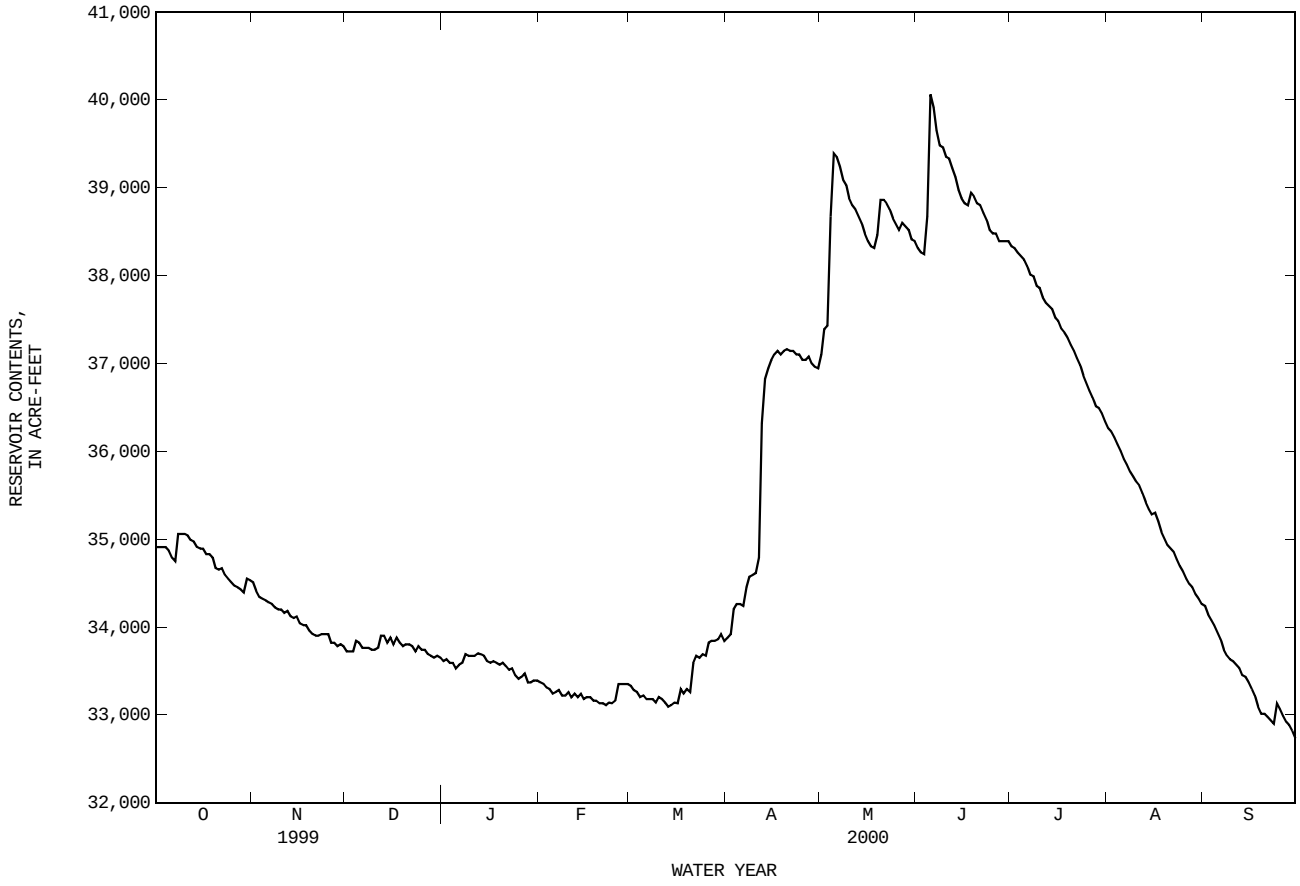
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	34910	34510	33720	33610	33370	33330	33880	37100	38310	38330	36260	34240
2	34910	34410	33720	33630	33350	33280	33920	37390	38260	38310	36220	34140
3	34910	34340	33720	33590	33310	33260	34200	37430	38240	38260	36160	34080
4	34910	34320	33840	33590	33290	33200	34260	38670	38670	38220	36080	34020
5	34870	34300	33820	33530	33240	33220	34260	39390	40060	38180	36000	33940
6	34790	34280	33760	33570	33260	33180	34240	39350	39910	38110	35910	33860
7	34750	34260	33760	33590	33280	33180	34450	39240	39650	38010	35850	33740
8	35060	34220	33760	33690	33220	33180	34570	39090	39480	37990	35770	33670
9	35060	34200	33740	33670	33220	33140	34590	39030	39460	37880	35710	33630
10	35060	34200	33740	33670	33260	33200	34610	38880	39350	37860	35650	33610
11	35040	34160	33760	33670	33200	33180	34790	38800	39330	37750	35610	33570
12	34990	34180	33900	33700	33240	33140	36320	38750	39220	37690	35520	33530
13	34970	34120	33900	33690	33200	33090	36820	38670	39120	37650	35420	33450
14	34910	34100	33820	33670	33240	33110	36940	38600	38970	37620	35340	33430
15	34890	34120	33880	33610	33180	33140	37040	38480	38880	37520	35280	33370
16	34890	34040	33800	33590	33200	33130	37100	38390	38820	37480	35300	33290
17	34830	34020	33880	33610	33200	33290	37140	38330	38800	37390	35200	33220
18	34830	34020	33820	33590	33160	33240	37100	38310	38940	37350	35080	33090
19	34790	33960	33780	33570	33160	33290	37140	38460	38900	37290	35010	33010
20	34670	33920	33800	33590	33130	33260	37160	38860	38820	37210	34930	33010
21	34650	33900	33800	33550	33130	33590	37140	38860	38800	37140	34890	32980
22	34670	33900	33780	33510	33110	33670	37140	38820	38710	37060	34850	32940
23	34590	33920	33720	33530	33140	33650	37100	38750	38630	36980	34770	32900
24	34550	33920	33780	33450	33130	33690	37100	38650	38520	36860	34690	33130
25	34510	33920	33740	33410	33160	33670	37040	38580	38480	36770	34630	33070
26	34470	33820	33740	33430	33350	33820	37040	38520	38480	36690	34550	32990
27	34450	33820	33690	33470	33350	33840	37080	38600	38390	36610	34490	32920
28	34430	33780	33670	33370	33350	33840	37000	38560	38390	36510	34450	32880
29	34390	33800	33650	33370	33350	33860	36960	38520	38390	36490	34370	32820
30	34550	33780	33670	33390	---	33920	36940	38410	38390	36430	34320	32730
31	34530	---	33650	33390	---	33840	---	38390	---	36340	34260	---
MAX	35060	34510	33900	33700	33370	33920	37160	39390	40060	38330	36260	34240
MIN	34390	33780	33650	33370	33110	33090	33880	37100	38240	36340	34260	32730
(+)	276.59	276.21	276.14	276.01	275.99	276.24	277.78	278.47	278.47	277.49	276.45	275.66
(@)	-400	-750	-130	-260	-40	490	3100	1450	0	-2050	-2080	-1530

CAL YR 1999 MAX 58670 MIN 33650 (@) -5550
WTR YR 2000 MAX 40060 MIN 32730 (@) -2200

(+) Elevation in feet, at end of month.
(@) Change in contents, in acre-feet.

08036700 LAKE NACOGDOCHES NEAR NACOGDOCHES, TX--Continued



08038000 ATTOYAC BAYOU NEAR CHIRENO, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°30′15", long 94°18′15", Nacogdoches-San Augustine County Line, Hydrologic Unit 12020005, near right bank on downstream side of bridge on State Highway 21, 2.2 mi upstream from Amaladeros Creek, 2.8 mi east of Chireno, 5.4 mi downstream from Arenoso Creek and 41 mi upstream from mouth.

DRAINAGE AREA.--503 mi^2.

PERIOD OF RECORD.--Jan 1924 to Sep 1925, Jul 1939 to Nov 1954, and Oct 1955 to Sep 30, 1985. Monthly discharge only for some periods, published in WSP 1312 and 1732. Oct 1985 to Sep 1989 (annual maximum). Oct 1989 to current year (peak discharges greater than base discharge).

Water-quality records.--Chemical data: Oct 1962 to Mar 1963, Jan 1994 to Aug 1999. Biochemical data: Jan 1994 to Aug 1999.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 169.58 ft above sea level. Jan 24, 1924, to Aug 29, 1925, and Sep 6, 1957, to Oct 27, 1958, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. Flow is affected at times by discharge from the flood-detention pools of twelve floodwater-retarding structures with a combined detention capacity of 15,870 acre-ft. These structures control runoff from 46.7 mi^2 above this station.

AVERAGE DISCHARGE.--45 years (water years 1940-54, 1956-1985), 479 ft^3/s (12.93 in/yr), 347,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,900 ft^3/s Nov 24, 1940 (gage height, 25.97 ft), maximum gage height, 26.01 ft on Jan 30, 1999 (discharge, 31,700 ft^3/s); minimum, 0.8 ft^3/s Aug 26-27, 1956.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1865, 29.9 ft Jun 29, 1902, from information by local residents. Flood in Jul 1933 reached a stage of 25.2 ft from information by local residents.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,500 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 14	1800	3,270	17.14	No other peak greater than base discharge.			

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08039100 AYISH BAYOU NEAR SAN AUGUSTINE, TX
(Flood-hydrograph partial-record station)

LOCATION.--Lat 31°23′46", Long 94°09′03", San Augustine County, Hydrologic Unit 12020005, near center of span on downstream side of bridge on State Highway 103, 3.0 mi upstream from Turkey Creek and 9.5 mi south of San Augustine.

DRAINAGE AREA.--89.0 mi^2.

PERIOD OF RECORD.--Feb 1959 to Sep 1985 (daily mean discharge), Oct 1985 to Sep 1989 (annual maximum), Oct 1989 to current year (peak discharges greater than base discharge).

REVISED RECORDS.--WSP 1922: 1959(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 190.22 ft above sea level. Prior to Jun 2, 1959, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation or diversions. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE.--26 years (water years 1960-85), 83.7 ft^3s, 12.77 in/yr, 60,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,200 ft^3s, Sep 14, 1978, gage height, 18.02 ft; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge since Oct 1957, 15,900 ft^3s, on Sep 21 or 22, 1958, gage height, 17.5 ft, from floodmarks.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,600 ft^3/s:

Date	Time	Discharge (ft^3/s)	Gage height (ft)	Date	Time	Discharge (ft^3/s)	Gage height (ft)
Apr 4	0300	1,820	12.16	May 10	1500	2,170	12.44
May 5	1100	1,850	12.18	May 21	0700	1,660	12.01

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08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX

LOCATION.--Lat 31°03'38", long 94°06'21", Jasper County, Hydrologic Unit 12020005, in the powerhouse-intake structure of Sam Rayburn Dam on the Angelina River, 10 mi northwest of Jasper and 25.2 mi upstream from mouth.

DRAINAGE AREA.--3,449 mi^2.

PERIOD OF RECORD.--Jan 1965 to current year.
Water-quality records.--Chemical data: Oct 1964 to Sep 1984, Sep 1993 to Sep 1999. Biochemical data: Nov 1967 to Sep 1984, Sep 1993 to Sep 1999.

GAGE.--Water-stage recorder. Datum of gage is sea level (levels by U.S. Army Corps of Engineers). Prior to Apr 20, 1965, nonrecording gage at same site and datum. Satellite telemeter at station.

REMARKS.--The reservoir is formed by a rolled earthfill dam 19,430 ft long, including spillway and dikes. The dam was completed and deliberate impoundment began Mar 29, 1965. The spillway is an uncontrolled broad-crested weir 2,200 ft wide, on right bank 7,000 ft to right of outlet works and is designed to discharge 125,300 ft^3/s at maximum flood design. The flood-control outlet works consists of two 10.0 by 20.0-foot rectangular concrete-lined conduits controlled by two 10.0 by 20.0-foot tractor-type service gates and one 10.0 by 20.0-foot tractor-type emergency gate. Water for turbines is admitted through four 18.0 by 26.0-foot penstocks and controlled by two wheeled-leaf-type headgates. The reservoir is operated for flood control and power generation. The area-capacity tables are based on topographic maps prepared by the U.S. Army Corps of Engineers and detailed sedimentation ranges established in 1961 and dated Feb 1965. For statement regarding regulation by Natural Resource Conservation Service flood-water-retarding structures, see station 08038000. Conservation pool storage is 2,876,300 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam	190.0
Design flood	183.0
Crest of spillway	176.0
Top of flood-control pool	173.0
Top of conservation pool (power pool)	l64.2
Top of power head and sediment pool	149.0
Lowest gated outlet (invert)	105.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 4,283,000 acre-ft, Mar 9, 1992, elevation, 174.95 ft; minimum since conservation storage was reached in 1968, 1,585,000 acre-ft, Aug 10, 1996, elevation, 150.74 ft.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 2,982,000 acre-ft, Apr 3, elevation, 165.12 ft; minimum contents, 1,803,000 acre-ft, Feb 23, elevation, 153.41 ft.

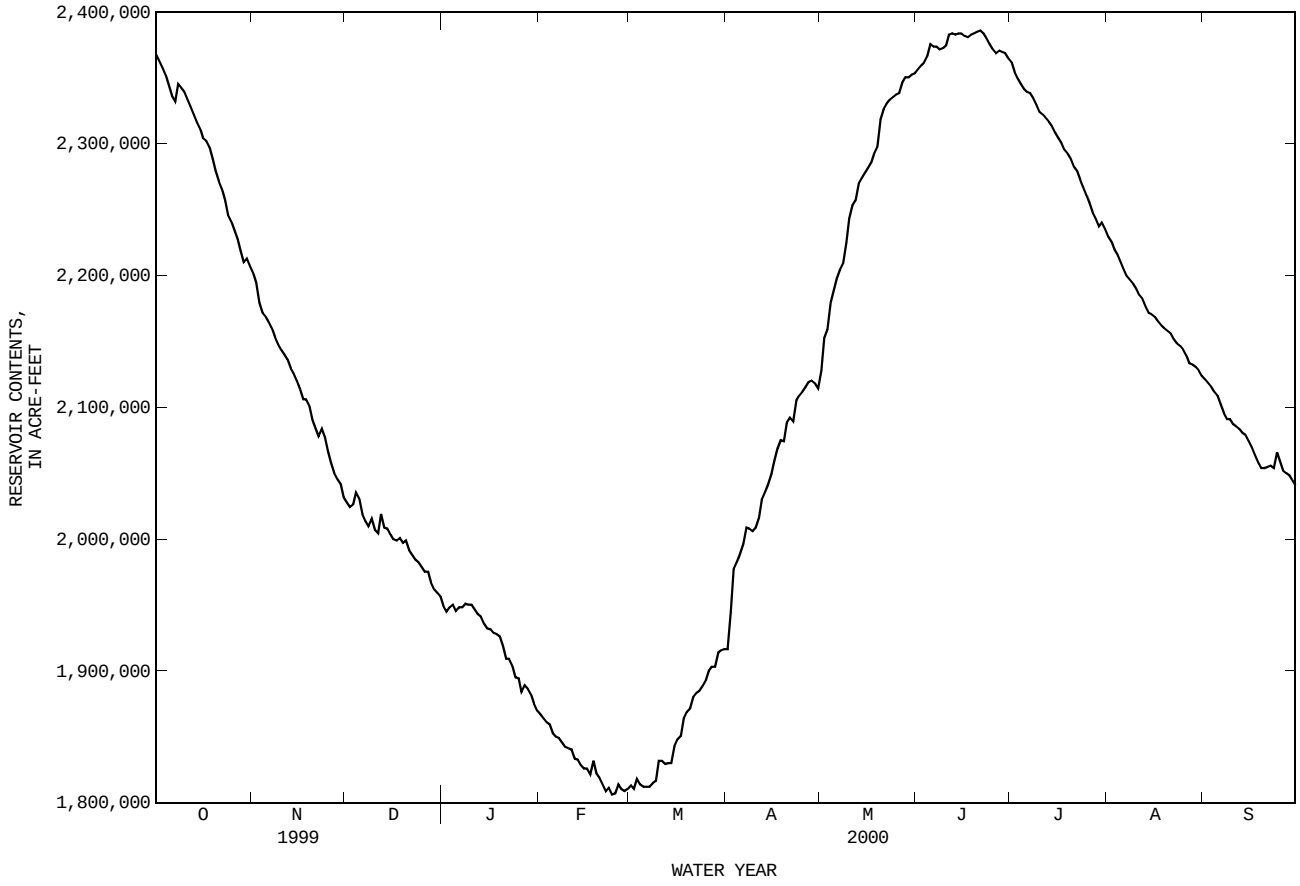
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2368000	2202000	2028000	1949000	1867000	1813000	1916000	2128000	2356000	2361000	2229000	2121000
2	2362000	2195000	2024000	1945000	1864000	1810000	1945000	2152000	2359000	2354000	2226000	2118000
3	2357000	2179000	2026000	1948000	1861000	1818000	1977000	2159000	2361000	2349000	2220000	2115000
4	2352000	2171000	2035000	1950000	1859000	1814000	1983000	2179000	2367000	2345000	2216000	2112000
5	2344000	2169000	2031000	1946000	1852000	1812000	1989000	2189000	2376000	2341000	2210000	2109000
6	2336000	2165000	2019000	1948000	1850000	1812000	1996000	2197000	2374000	2339000	2204000	2102000
7	2332000	2160000	2013000	1948000	1849000	1812000	2009000	2204000	2374000	2338000	2199000	2096000
8	2345000	2153000	2010000	1951000	1846000	1815000	2008000	2209000	2372000	2334000	2197000	2091000
9	2342000	2148000	2015000	1950000	1842000	1816000	2006000	2225000	2373000	2329000	2194000	2091000
10	2339000	2144000	2007000	1950000	1841000	1832000	2009000	2243000	2375000	2324000	2190000	2087000
11	2333000	2140000	2004000	1947000	1840000	1832000	2016000	2253000	2383000	2322000	2185000	2085000
12	2328000	2136000	2019000	1943000	1834000	1829000	2030000	2257000	2384000	2319000	2182000	2084000
13	2322000	2130000	2009000	1941000	1833000	1830000	2035000	2270000	2383000	2316000	2176000	2081000
14	2316000	2126000	2008000	1936000	1828000	1830000	2042000	2274000	2384000	2313000	2171000	2079000
15	2311000	2120000	2003000	1932000	1826000	1843000	2049000	2278000	2384000	2308000	2171000	2074000
16	2304000	2114000	2000000	1931000	1826000	1848000	2059000	2282000	2382000	2304000	2169000	2070000
17	2302000	2106000	1999000	1929000	1822000	1851000	2069000	2285000	2381000	2300000	2165000	2064000
18	2297000	2106000	2001000	1928000	1832000	1864000	2075000	2292000	2383000	2295000	2162000	2058000
19	2288000	2101000	1997000	1926000	1822000	1869000	2074000	2297000	2384000	2292000	2160000	2054000
20	2280000	2090000	1999000	1919000	1819000	1872000	2088000	2318000	2385000	2288000	2158000	2054000
21	2272000	2084000	1992000	1909000	1814000	1880000	2092000	2326000	2386000	2283000	2156000	2055000
22	2266000	2078000	1988000	1909000	1809000	1883000	2089000	2330000	2384000	2280000	2151000	2056000
23	2257000	2084000	1984000	1904000	1811000	1885000	2105000	2333000	2380000	2273000	2149000	2054000
24	2246000	2077000	1983000	1895000	1806000	1888000	2109000	2335000	2376000	2267000	2147000	2066000
25	2241000	2066000	1979000	1894000	1807000	1893000	2112000	2337000	2372000	2261000	2144000	2059000
26	2234000	2058000	1975000	1884000	1814000	1900000	2115000	2338000	2369000	2255000	2139000	2052000
27	2228000	2050000	1975000	1889000	1810000	1903000	2119000	2346000	2371000	2248000	2133000	2050000
28	2219000	2046000	1967000	1886000	1809000	1903000	2120000	2350000	2370000	2243000	2132000	2048000
29	2210000	2042000	1962000	1882000	1810000	1914000	2118000	2350000	2369000	2237000	2131000	2045000
30	2213000	2032000	1959000	1875000	---	1915000	2114000	2352000	2365000	2240000	2128000	2041000
31	2207000	---	1956000	1870000	---	1916000	---	2353000	---	2235000	2124000	---
MEAN	2295000	2116000	1999000	1923000	1831000	1855000	2049000	2272000	2375000	2300000	2172000	2076000
MAX	2368000	2202000	2035000	1951000	1867000	1916000	2120000	2353000	2386000	2361000	2229000	2121000
MIN	2207000	2032000	1956000	1870000	1806000	1810000	1916000	2128000	2356000	2235000	2124000	2041000
(+)	157.86	156.00	155.16	154.19	153.50	154.71	156.88	159.33	159.45	158.15	156.99	156.10
(@)	-170000	-175000	-76000	-86000	-60000	+106000	+198000	+239000	+12000	-130000	-111000	-83000

CAL YR 1999 MAX 3837000 MIN 1956000 (@) -956000
WTR YR 2000 MAX 2386000 MIN 1806000 (@) -336000

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

08039300 SAM RAYBURN RESERVOIR NEAR JASPER, TX--Continued



08040000 B.A. STEINHAGEN LAKE AT TOWN BLUFF, TX

LOCATION.--Lat 30°47′43", long 94°10′48", Tyler County, Hydrologic Unit 12020003, near right bank 70 ft upstream from outlet structure of Town Bluff Dam on Neches River, 0.4 mi north of Town Bluff and at mile 113.7.

DRAINAGE AREA.--7,573 mi^2.

PERIOD OF RECORD.--Apr 1951 to current year. Prior to Oct 1967, published as "Dam B Reservoir at Town Bluff".

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Prior to Oct 25, 1954, at site 490 ft upstream at same datum. Satellite telemeter at station.

REMARKS.--The lake is formed by a rolled earthfill dam with concrete spillway sections. The total length of dam is 6,698 ft, including a concrete spillway and non-overflow section. Deliberate impoundment of water began Apr 16, 1951, and the dam was completed in Jun 1951. The uncontrolled spillway is 6,100 ft long. A 326-foot-long gated service spillway with six 40.0- by 35.0-foot tainter gates is located near right end of dam. The capacity of the spillways at maximum flood design is 218,300 ft^3/s. The capacity table is based on a survey made in 1945. Water is used for industrial, municipal and irrigation supplies. Conservation pool storage is 94,200 acre-ft. Data regarding the dam are given in the following table:

	Elevation (feet)
Top of dam (nonoverflow)	95.0
Design flood	93.0
Crest of uncontrolled spillway (top of tainter gates)	85.0
Top of conservation pool	83.0
Bottom of tainter gates (sill)	50.0

COOPERATION.--Record of contents furnished by the U.S. Army Corps of Engineers and reviewed by the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 128,400 acre-ft, May 22, 1953 elevation, 85.21 ft; no storage Sep 18 to Oct 13, 1954.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 96,600 acre-ft, Aug 14, elevation, 83.36 ft; minimum contents, 27,000 acre-ft, Jan 26, elevation, 75.83 ft.

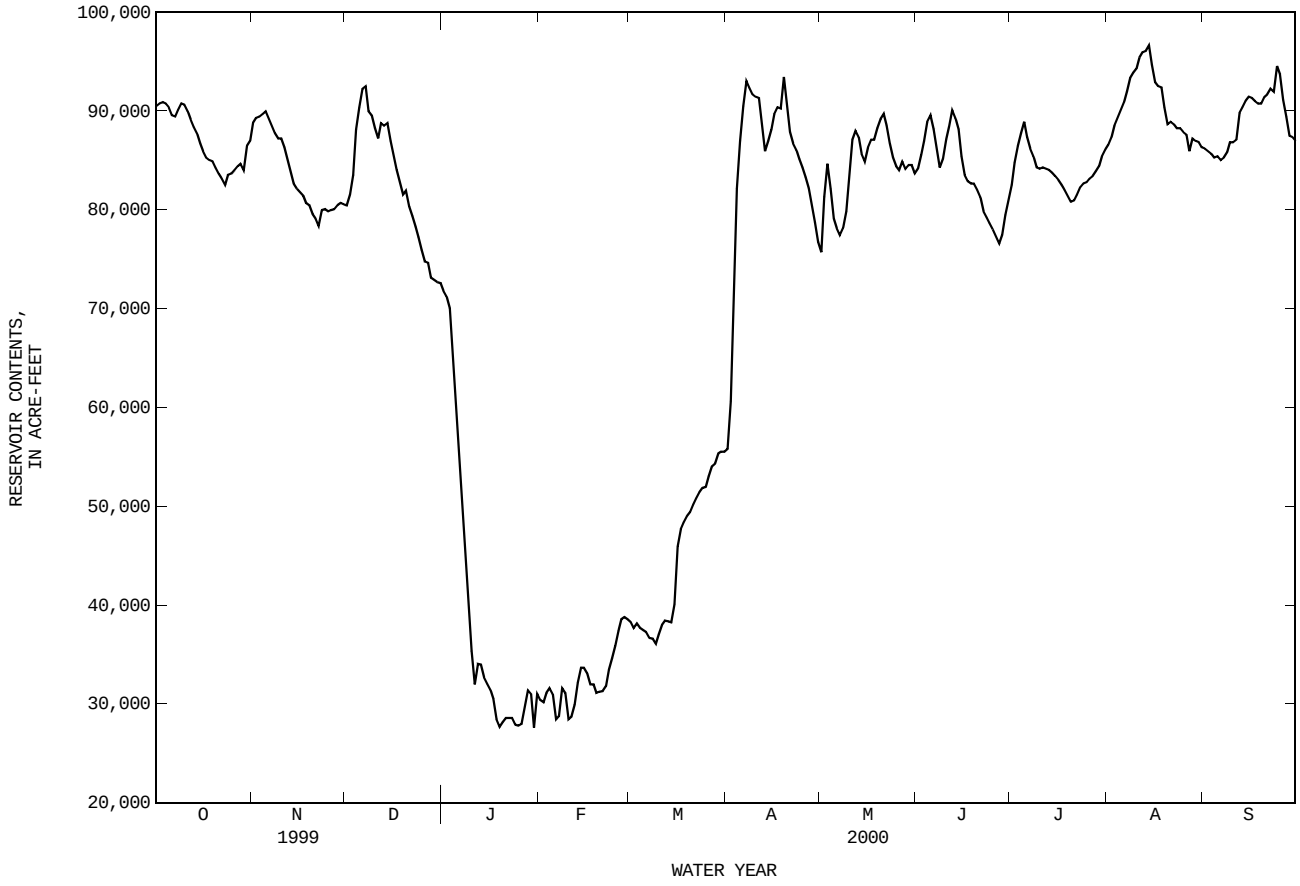
RESERVOIR STORAGE (ACRE-FEET), WATER YEAR OCTOBER 1999 TO SEPTEMBER 2000
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90470	88760	80420	71780	30400	38260	55790	75660	84130	82510	86550	86160
2	90740	89280	81520	71220	30140	37670	60600	81280	85520	84760	87320	85910
3	90870	89410	83500	70000	31110	38110	73820	84640	86930	86420	88490	85650
4	90740	89680	88100	64560	31560	37670	82140	82140	88890	87710	89280	85270
5	90340	89940	90340	59720	30980	37450	86930	79090	89540	88890	90070	85400
6	89540	89280	92210	55040	28450	37230	90470	78130	88100	87320	90870	85020
7	89410	88490	92480	50180	28760	36660	93020	77420	86290	86160	91940	85270
8	90070	87710	89940	45600	31560	36580	92350	78130	84260	85400	93300	85780
9	90740	87190	89540	40590	31110	36080	91670	79810	85140	84260	93840	86800
10	90600	87190	88230	35370	28450	37020	91400	83000	87060	84130	94250	86800
11	89940	86290	87190	31960	28700	37960	91270	87060	88360	84260	95350	87060
12	89150	85020	88760	34050	29890	38410	88760	87970	90070	84130	95900	89810
13	88360	83750	88490	33980	32160	38330	85910	87320	89280	84000	96040	90340
14	87710	82630	88760	32690	33640	38260	86930	85650	88100	83750	96600	91000
15	86680	82140	86930	32030	33640	40060	88100	84890	85400	83380	94660	91400
16	85910	81770	85520	31430	33100	45930	89680	86290	83500	83000	92890	91270
17	85270	81400	84000	30530	31960	47680	90340	87060	82880	82510	92480	91000
18	85020	80660	82760	28450	31960	48360	90200	87060	82630	82010	92350	90740
19	84890	80420	81520	27660	31110	48960	93430	88230	82630	81400	90340	90740
20	84260	79570	81890	28150	31240	49400	90600	89150	82010	80790	88620	91400
21	83630	79090	80300	28580	31300	50180	87840	89680	81280	80910	88890	91670
22	83130	78370	79330	28580	31760	50790	86680	88490	79810	81520	88620	92210
23	82510	79940	78250	28580	33440	51410	86040	86680	79210	82260	88230	91940
24	83500	80060	77180	27900	34600	51860	85140	85270	78610	82630	88230	94520
25	83630	79810	75890	27780	35870	51940	84260	84380	78020	82760	87840	93700
26	84000	79940	74730	27960	37380	53020	83250	84000	77300	83130	87580	91140
27	84380	80060	74620	29700	38560	54030	82140	84890	76600	83380	85910	89410
28	84640	80420	73130	31370	38780	54300	80420	84130	77420	83880	87190	87450
29	84000	80660	72900	30980	38560	55320	78730	84510	79450	84380	86930	87320
30	86420	80540	72680	27600	---	55510	76710	84510	81030	85400	86800	86930
31	86930	---	72570	31040	---	55510	---	83630	---	86040	86290	---
MEAN	87020	83650	82700	38550	32420	44840	84820	84200	83650	83970	90440	88970
MAX	90870	89940	92480	71780	38780	55510	93430	89680	90070	88890	96600	94520
MIN	82510	78370	72570	27600	28450	36080	55790	75660	76600	80790	85910	85020
(+)	82.44	81.94	81.25	76.47	77.56	79.59	81.61	82.18	81.98	82.37	82.39	82.44
(@)	-2880	-6390	-7970	-41530	+7520	+16950	+21200	+6920	-2600	+5010	+250	+640

CAL YR 1999 MAX 95770 MIN 26710 (@) -10190
WTR YR 2000 MAX 96600 MIN 27600 (@) -2880

(+) Elevation, in feet, at end of month.
(@) Change in Contents, in acre-feet.

08040000 B.A. STEINHAGEN LAKE AT TOWN BLUFF, TX--Continued



08040600 NECHES RIVER NEAR TOWN BLUFF, TX

LOCATION.--Lat 30°47'27", long 94°09'03", Jasper-Tyler County line, Hydrologic Unit 12020003, on left bank 1.8 mi downstream from Town Bluff Dam, 2.0 mi northeast of Town Bluff, 1.0 mi upstream from Walnut Run, 6.5 mi downstream from Wolf Creek and at mile 114.9.

DRAINAGE AREA.--7,574 mi^2.

PERIOD OF RECORD.--Mar 1951 to current year. Prior to Oct 27, 1989, published as "Neches River at Town Bluff".

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is sea level. Dec 4, 1954 to Oct 27, 1989, water-stage recorder at site 1.5 mi upstream at same datum. Prior to May 21, 1953, water-stage recorder, and May 21, 1953, to Dec 3, 1954, nonrecording gage at former site at same datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since installation of gage in water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake (station 08040000, conservation pool storage 94,200 acre-ft) 1.8 mi upstream and by Sam Rayburn Reservoir (station 08039300, conservation pool storage 2,876,300 acre-ft) 37.9 mi upstream. There are some diversions upstream from station. (Prior to Oct 1989, published as "Neches River at Town Bluff" (station 08040500). No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1884 reached a stage about 86.8 ft (discharge, about 120,000 ft^3/s) and is the highest since that date, from information by the U.S. Army Corps of Engineers.

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

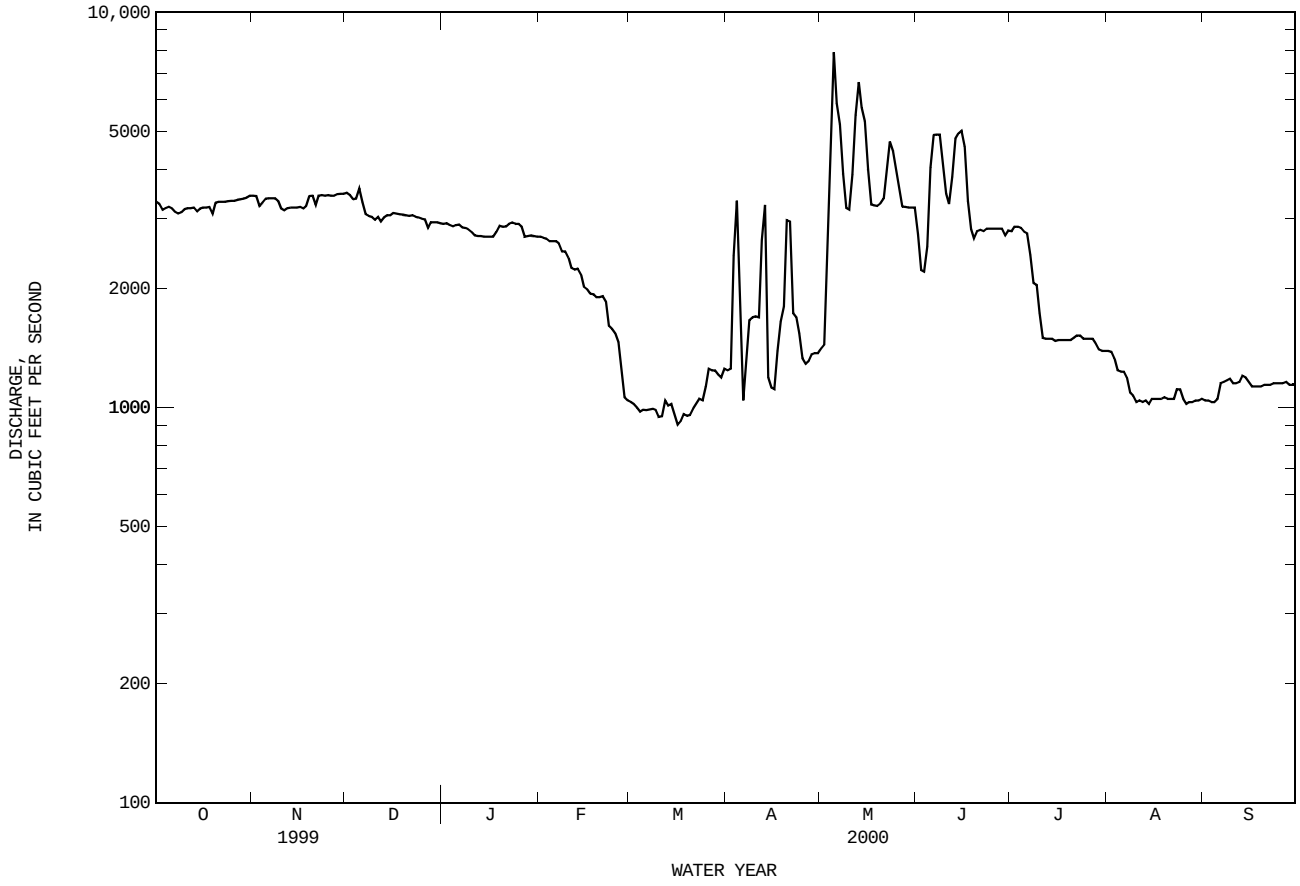
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3310	3430	3490	2910	2700	1030	1240	1410	2740	2790	1390	1040
2	3270	3420	3440	2920	2680	1020	1250	1440	2220	2860	1380	1040
3	3160	3230	3360	2890	2670	999	2420	2320	2200	2860	1330	1030
4	3190	3300	3370	2870	2630	975	3330	4700	2550	2840	1240	1030
5	3210	3370	3570	2890	2630	986	1700	7910	4040	2780	1230	1050
6	3180	3380	3300	2900	2630	984	1040	5880	4890	2750	1230	1150
7	3120	3380	3080	2850	2600	987	1350	5200	4900	2430	1190	1160
8	3090	3380	3050	2840	2480	991	1660	3900	4900	2060	1090	1170
9	3110	3320	3030	2820	2480	983	1690	3190	4170	2040	1070	1180
10	3170	3180	2980	2780	2390	946	1700	3160	3470	1730	1030	1150
11	3190	3150	3030	2720	2250	950	1690	3880	3270	1500	1040	1150
12	3190	3190	2950	2710	2230	1040	2650	5490	3830	1490	1030	1160
13	3200	3200	3020	2710	2240	1010	3250	6650	4780	1490	1040	1200
14	3130	3200	3060	2700	2170	1020	1190	5720	4930	1490	1020	1190
15	3180	3200	3060	2700	2020	958	1120	5280	5010	1470	1050	1160
16	3200	3210	3100	2700	1990	903	1110	4000	4560	1480	1050	1130
17	3200	3180	3090	2700	1940	924	1390	3260	3330	1480	1050	1130
18	3210	3230	3080	2780	1930	961	1650	3240	2820	1480	1050	1130
19	3090	3420	3070	2880	1900	952	1800	3230	2670	1480	1060	1130
20	3290	3430	3060	2860	1900	957	2970	3280	2790	1480	1050	1140
21	3310	3250	3050	2870	1910	993	2950	3370	2810	1500	1050	1140
22	3310	3430	3060	2910	1850	1020	1730	3990	2790	1520	1050	1140
23	3310	3440	3030	2930	1610	1050	1690	4700	2830	1520	1110	1150
24	3320	3430	3020	2910	1580	1040	1540	4440	2830	1490	1110	1150
25	3330	3440	3000	2910	1540	1130	1330	3990	2830	1490	1050	1150
26	3330	3430	2990	2870	1460	1250	1290	3610	2830	1490	1020	1150
27	3350	3430	2840	2700	1250	1240	1310	3220	2830	1490	1030	1160
28	3360	3460	2940	2710	1060	1240	1360	3210	2830	1450	1030	1140
29	3370	3470	2940	2720	1040	1210	1370	3200	2720	1400	1040	1140
30	3390	3470	2940	2710	---	1190	1370	3200	2800	1390	1040	1140
31	3430	---	2920	2700	---	1250	---	3200	---	1390	1050	---
TOTAL	100500	100050	95920	87070	59760	32189	52140	123270	102170	56110	34200	33980
MEAN	3242	3335	3094	2809	2061	1038	1738	3976	3406	1810	1103	1133
MAX	3430	3470	3570	2930	2700	1250	3330	7910	5010	2860	1390	1200
MIN	3090	3150	2840	2700	1040	903	1040	1410	2200	1390	1020	1030
AC-FT	199300	198400	190300	172700	118500	63850	103400	244500	202700	111300	67840	67400

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2000, BY WATER YEAR (WY)

MEAN	2304	2801	4427	6373	7593	8512	7864	8936	5747	3776	2480	2229
MAX	13040	18490	18170	25690	20800	26430	20220	48140	17000	22870	8252	6652
(WY)	1995	1958	1961	1961	1974	1992	1969	1953	1979	1989	1979	1973
MIN	88.1	32.0	18.6	120	252	1038	1231	1003	856	756	288	124
(WY)	1955	1957	1957	1957	1981	2000	1981	1971	1956	1964	1951	1956

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1951 - 2000	
ANNUAL TOTAL	2828600		877359			
ANNUAL MEAN	7750		2397		5279	
HIGHEST ANNUAL MEAN					12010	1995
LOWEST ANNUAL MEAN					961	1971
HIGHEST DAILY MEAN	27600	Mar 14	7910	May 5	90100	May 21 1953
LOWEST DAILY MEAN	2840	Dec 27	903	Mar 16	.00	Oct 6 1956
ANNUAL SEVEN-DAY MINIMUM	2940	Dec 25	950	Mar 15	.00	Nov 17 1956
INSTANTANEOUS PEAK FLOW			9460	May 5	90900	May 21 1953
INSTANTANEOUS PEAK STAGE			58.99	May 5	82.85	May 21 1953
ANNUAL RUNOFF (AC-FT)	5611000		1740000		3824000	
10 PERCENT EXCEEDS	18000		3430		14900	
50 PERCENT EXCEEDS	4080		2700		2970	
90 PERCENT EXCEEDS	3180		1040		524	

08040600 NECHES RIVER NEAR TOWN BLUFF, TX--Continued



08041000 NECHES RIVER AT EVADALE, TX

LOCATION.--Lat 30°21′20", long 94°05′35", Jasper-Hardin County line, Hydrologic Unit 12020003, near right bank on downstream side of bridge on U.S. Highway 96 at Evadale, 0.8 mi upstream from Mill Creek, 16 mi upstream from Village Creek, and at mile 55.6.

DRAINAGE AREA.--7,951 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Jul 1904 to Dec 1906, Apr 1921 to current year. Monthly discharge only for some periods, published in WSP 1312.

REVISED RECORDS.--WSP 718: 1929. WSP 1342: 1905-07, 1924. WSP 1732: Drainage area at former site.

GAGE.--Water-stage recorder. Datum of gage is 8.25 ft above sea level. Jul 1, 1904, to Dec 31, 1906, nonrecording gage on Gulf, Colorado, and Santa Fe Railway Co. bridge at site 1.2 mi downstream at datum 5.50 ft lower; Apr 1, 1921, to Dec 7, 1948, nonrecording gages at site 1.2 mi downstream at present datum; Dec 8, 1948, to Nov 8, 1963, water-stage recorder at site 1.2 mi downstream at present datum. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since water year 1951, at least 10% of contributing drainage area has been regulated by B. A. Steinhagen Lake (station 08040000, conservation pool storage 94,200 acre-ft) 58.1 mi upstream. Additional regulation by Sam Rayburn Reservoir (station 08039300, conservation pool storage 2,876,300 acre-ft), 95.7 mi upstream. There are some diversions upstream for municipal use. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--31 years (water years 1905-06, 1922-50) 7,089 ft^3/s (5,136,000 acre-ft/yr).

EXTREMES FOR PERIOD PRIOR TO REGULATION (WATER YEARS, 1905-06, 1922-50).--Maximum discharge, 92,100 ft^3/s May 11, 1944 (gage height, 23.58 ft, from floodmark), at site then in use; minimum daily, 148 ft^3/s Sep 10, 1925.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in May 1884 reached a stage of 26.2 ft, at former site (discharge, about 125,000 ft^3/s), and flood in Aug 1915 reached a stage of 24.5 ft, at former site (discharge, about 102,000 ft^3/s). These are the highest floods since at least 1884. Stages furnished by Gulf, Colorado, and Santa Fe Railway Co.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3550	3480	3320	2850	2640	1040	1130	1240	3010	2800	1350	959
2	3360	3480	3330	2850	2640	1010	1170	1380	2800	2820	1330	961
3	3280	3460	3390	2860	2640	995	1560	1510	2280	2860	1320	958
4	3210	3310	3350	2860	2640	980	2820	2040	2100	2890	1300	963
5	3230	3280	3410	2830	2600	936	4090	4250	2230	2810	1230	959
6	3270	3340	3530	2830	2580	928	2870	6690	3160	2790	1190	954
7	3270	3360	3430	2850	2590	946	1660	6930	4070	2770	1180	1010
8	3430	3370	3120	2850	2600	918	1310	5980	4350	2620	1170	1060
9	3430	3360	2990	2850	2510	912	1560	4710	4440	2240	1080	1080
10	3350	3320	2960	2840	2460	917	1600	3540	4210	2080	1030	1110
11	3370	3200	2920	2800	2400	921	1580	3130	3530	1910	1000	1100
12	3390	3150	2950	2760	2260	873	1610	3330	3190	1600	994	1090
13	3390	3140	2970	2730	2210	928	2090	4350	3290	1510	984	1120
14	3380	3160	2980	2730	2190	950	3200	5610	4000	1490	978	1120
15	3360	3150	2970	2710	2150	966	1790	5700	4330	1490	968	1140
16	3330	3150	2930	2720	2010	948	1180	5340	4480	1480	979	1100
17	3350	3150	2960	2720	1950	883	1070	4440	4400	1470	990	1070
18	3360	3140	3030	2710	1930	827	1120	3420	3690	1460	983	1060
19	3370	3170	3020	2760	1940	857	1420	3100	3060	1460	976	1060
20	3290	3310	3020	2890	1910	862	1550	3320	2850	1450	978	1070
21	3340	3370	3050	2890	1900	838	2350	3390	2810	1440	978	1080
22	3400	3270	3020	2890	1900	858	3010	3340	2830	1440	978	1090
23	3410	3360	3010	2900	1880	899	2060	3560	2810	1450	979	1090
24	3410	3390	2980	2900	1690	911	1630	4140	2840	1450	1000	1080
25	3400	3370	2950	2890	1590	946	1510	4240	2830	1450	1050	1060
26	3400	3360	2920	2880	1570	972	1320	3930	2830	1440	1020	1050
27	3410	3320	2910	2860	1470	1130	1200	3620	2840	1440	976	1040
28	3420	3300	2820	2740	1390	1200	1190	3220	2840	1440	964	1040
29	3420	3310	2840	2680	1130	1180	1220	3080	2820	1420	961	1040
30	3430	3330	2860	2680	---	1170	1230	3040	2780	1350	961	1040
31	3470	---	2850	2660	---	1150	---	3020	---	1340	958	---
TOTAL	104480	98860	94790	86970	61370	29851	53100	118590	97700	57660	32835	31554
MEAN	3370	3295	3058	2805	2116	963	1770	3825	3257	1860	1059	1052
MAX	3550	3480	3530	2900	2640	1200	4090	6930	4480	2890	1350	1140
MIN	3210	3140	2820	2660	1130	827	1070	1240	2100	1340	958	954
AC-FT	207200	196100	188000	172500	121700	59210	105300	235200	193800	114400	65130	62590

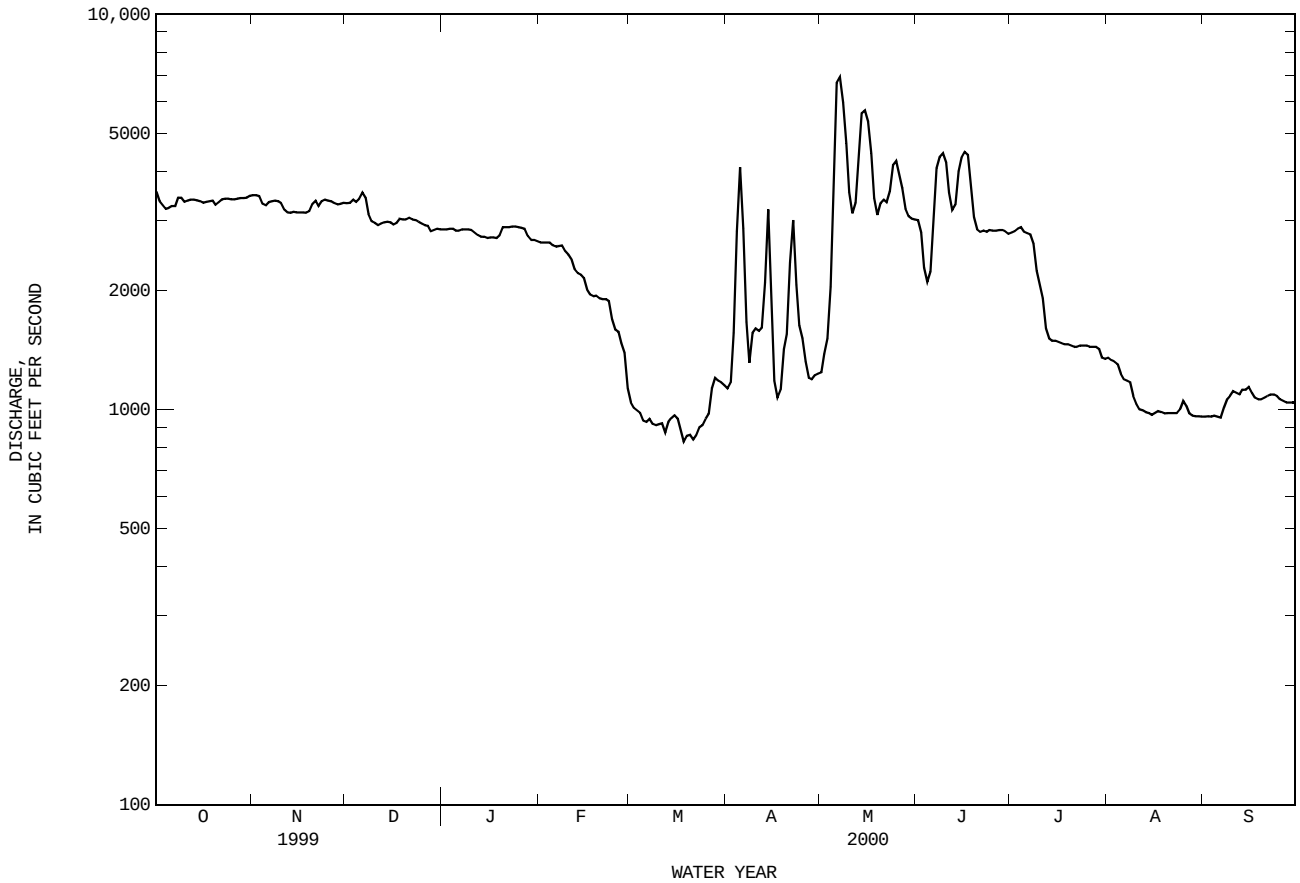
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1951 - 2000z, BY WATER YEAR (WY)

MEAN	2508	2972	4855	7102	8316	9305	8738	9511	6459	4321	2722	2389
MAX	15780	16580	18680	31060	22720	28790	21440	46790	19920	25680	9644	7090
(WY)	1995	1958	1961	1961	1995	1992	1995	1953	1991	1989	1979	1979
MIN	169	110	143	159	394	963	1432	1220	1112	863	358	194
(WY)	1955	1957	1957	1957	1957	2000	1981	1981	1963	1955	1951	1956

08041000 NECHES RIVER AT EVADALE, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1951 - 2000z	
ANNUAL TOTAL	3094590		867760			
ANNUAL MEAN	8478		2371		5754	
HIGHEST ANNUAL MEAN					13480	1995
LOWEST ANNUAL MEAN					1128	1971
HIGHEST DAILY MEAN	26000	Mar 17	6930	May 7	80000	May 24 1953
LOWEST DAILY MEAN	2820	Dec 28	827	Mar 18	63	Nov 26 1956
ANNUAL SEVEN-DAY MINIMUM	2880	Dec 25	861	Mar 17	66	Nov 23 1956
INSTANTANEOUS PEAK FLOW			7180	May 6	47900	Jul 6 1989
INSTANTANEOUS PEAK STAGE			12.02	May 6	20.79	Jul 6 1989
ANNUAL RUNOFF (AC-FT)	6138000		1721000		4169000	
10 PERCENT EXCEEDS	19700		3430		16200	
50 PERCENT EXCEEDS	4600		2720		3170	
90 PERCENT EXCEEDS	3200		978		688	

z Period of regulated streamflow.



08041000 NECHES RIVER AT EVADALE, TX--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
CHEMICAL DATA: Sep 1939 to current year.
BIOCHEMICAL DATA: Sep 1939 to Aug 1994
PESTICIDE DATA: Feb 1968 to Jul 1981.
SEDIMENT DATA: Oct 1960 to Aug 1994.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Oct 1947 to Sep 1997.
WATER TEMPERATURE: Oct 1947 to Sep 1997.

INSTRUMENTATION.--Graphic recorder with thermograph Oct 1954 to Sep 1963.

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

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 670 microsiemens, Mar 21, 25, 31, 1994; minimum daily, 23 microsiemens, Sep 19, 1963.
WATER TEMPERATURE (1947-85, 1987 to current year): Maximum daily, 36.0°C, many days in Aug 1997; minimum daily, 3.0°C, Jan 30, 31, 1948, Jan 31, 1949, and Jan 24, 1963.

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

DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND-ARD UNITS) (00400)	TEMPER-ATURE WATER (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION) (00301)	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)
JAN											
26...	1005	2800	143	6.8	13.0	9.0	84	29	6	6.9	2.9
MAY											
11...	0803	3060	118	6.9	26.5	7.5	93	27	11	7.0	2.3
AUG											
01...	1415	1320	168	6.8	30.0	7.5	99	33	4	8.3	3.1

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	ALKA-LINITY WAT DIS FIX END FIELD CACO3 (MG/L) (39036)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)
JAN										
26...	14	1	2.7	--	23	16	15	<.10	11	82
MAY										
11...	11	.9	2.8	--	16	15	15	<.10	12	75
AUG										
01...	17	1	3.0	29	--	18	17	<.10	11	96

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08041500 VILLAGE CREEK NEAR KOUNTZE, TX

LOCATION.--Lat 30°23′52", long 94°15′48", Hardin County, Hydrologic Unit 12020006, on downstream side of bridge on Farm Road 418, 1.6 mi upstream from Gulf, Colorado, and Santa Fe Railway Co. bridge, 3.1 mi upstream from Cypress Creek, 3.4 mi northeast of Kountze and 4.3 mi downstream from Beech Creek.

DRAINAGE AREA.--860 mi^2.

PERIOD OF RECORD.--Jun 1924 to Oct 1929 (discharge measurements only), Apr 1939 to current year.
Water-quality records.--Chemical data: Nov 1967 to Sep 1985. Water temperature: Nov 1967 to Sep 1970.

REVISED RECORDS.--WSP 1732: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 25.12 ft above sea level. Prior to Apr 30, 1939, nonrecording gage at site 1.6 mi downstream at different datum. Apr 30, 1939, to Sep 30, 1966, water-stage recorder at site 2,000 ft downstream at present datum. Satellite telemeter at station.

REMARKS.--Records good. No known regulation. There are small diversions above station. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1884, about 34 ft in Aug 1915 at site 2,000 ft downstream at present datum; stage was determined on basis of information by engineers of Gulf, Colorado, and Santa Fe Railway Co. for site 1.6 mi downstream.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,000 ft^3/s:

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

No peak greater than base discharge.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	123	143	149	196	270	208	216	132	126	114	34	34
2	178	200	144	192	227	190	201	230	117	111	35	32
3	205	216	150	192	204	175	507	692	109	115	37	31
4	163	194	177	189	190	164	e1300	948	101	110	38	29
5	133	164	292	186	180	157	e1600	1630	96	99	47	28
6	118	145	565	185	172	150	e1800	2140	95	88	49	27
7	112	135	693	181	168	144	2100	2240	101	84	46	27
8	e116	131	613	176	169	140	1350	1990	232	78	42	27
9	e116	128	446	174	177	138	609	1220	257	73	39	29
10	e208	125	339	176	218	137	415	592	179	70	36	30
11	e325	123	280	180	246	137	340	441	146	66	36	31
12	e320	120	255	183	230	137	303	389	141	62	38	30
13	e236	119	253	184	205	152	305	320	182	64	38	35
14	e190	119	274	180	192	197	322	276	315	60	40	39
15	e162	119	370	175	184	192	397	243	362	56	40	41
16	e144	119	389	172	178	174	397	211	281	53	38	40
17	e134	118	322	168	176	220	339	187	199	50	34	50
18	128	117	292	164	170	e420	290	168	179	46	33	54
19	126	116	282	162	165	e580	256	150	174	e42	33	49
20	125	115	268	159	160	e420	230	424	169	e41	32	43
21	122	114	281	157	156	317	209	957	159	e40	30	43
22	124	114	286	156	150	283	190	934	155	e39	31	46
23	126	121	259	153	149	260	174	644	150	e38	32	50
24	124	126	239	150	150	267	167	414	134	e37	40	48
25	121	139	223	148	157	250	160	297	119	e36	49	51
26	116	154	209	149	180	228	158	228	107	35	39	55
27	113	188	207	149	199	218	162	185	98	36	36	58
28	110	193	210	153	201	262	e157	160	91	36	37	55
29	109	173	202	169	208	369	e150	149	86	35	38	63
30	111	159	204	253	---	336	e141	143	102	34	37	71
31	117	---	201	312	---	263	---	135	---	34	35	---
TOTAL	4655	4247	9074	5523	5431	7285	14945	18869	4762	1882	1169	1246
MEAN	150	142	293	178	187	235	498	609	159	60.7	37.7	41.5
MAX	325	216	693	312	270	580	2100	2240	362	115	49	71
MIN	109	114	144	148	149	137	141	132	86	34	30	27
AC-FT	9230	8420	18000	10950	10770	14450	29640	37430	9450	3730	2320	2470
CFSM	.17	.16	.34	.21	.22	.27	.58	.71	.18	.07	.04	.05
IN.	.20	.18	.39	.24	.23	.32	.65	.82	.21	.08	.05	.05

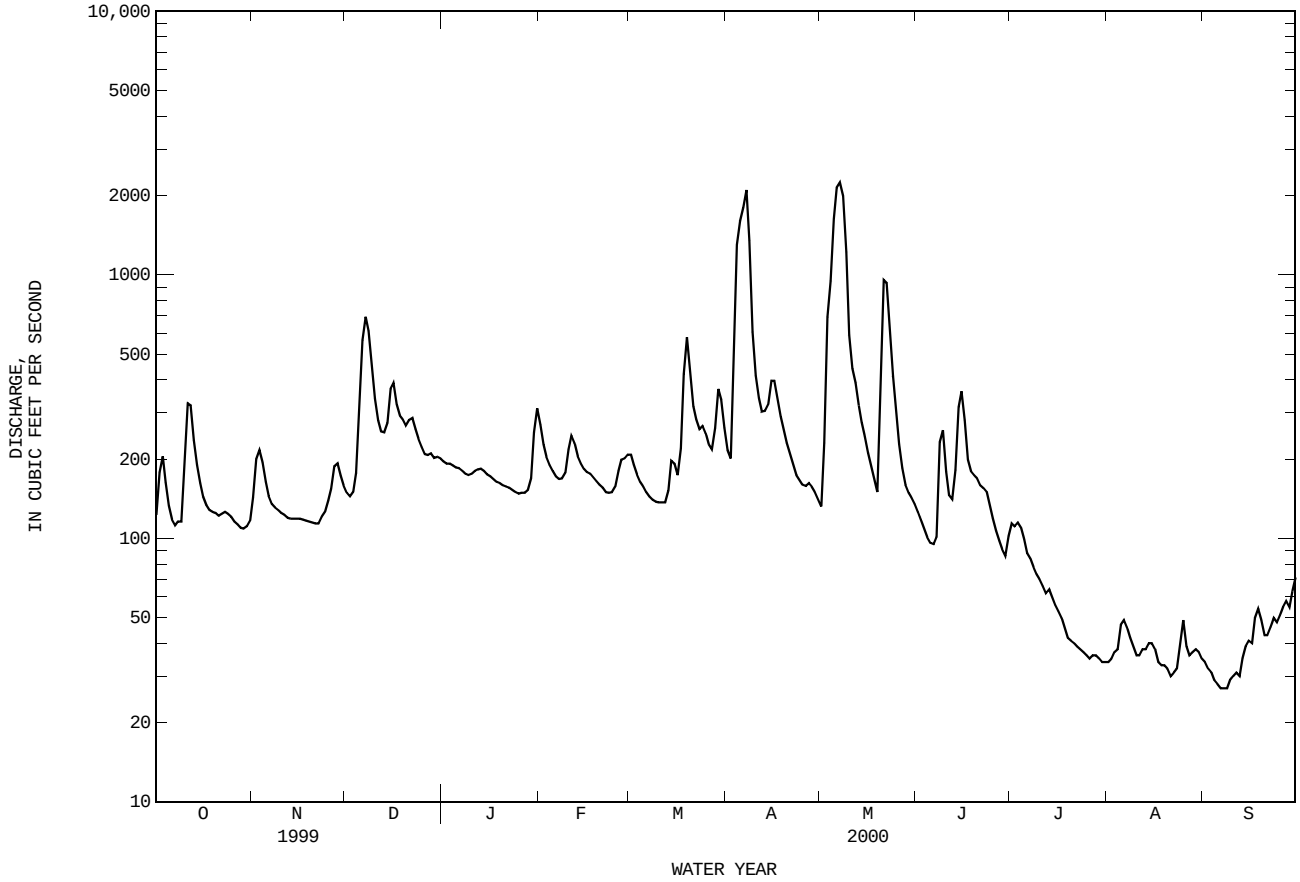
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2000, BY WATER YEAR (WY)

MEAN	399	706	1100	1486	1461	1210	1158	1171	856	491	257	326
MAX	4743	6430	5835	5693	4420	3311	6733	6932	6668	4963	1580	2111
(WY)	1995	1941	1941	1974	1966	1992	1979	1953	1950	1989	1975	1961
MIN	22.8	34.9	115	113	169	206	104	89.5	69.5	31.1	28.8	26.5
(WY)	1968	1968	1955	1957	1968	1940	1971	1963	1956	1971	1956	1956

08041500 VILLAGE CREEK NEAR KOUNTZE, TX--Continued

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1939 - 2000	
ANNUAL TOTAL	337772		79088			
ANNUAL MEAN	925		216		886	
HIGHEST ANNUAL MEAN					2248	1950
LOWEST ANNUAL MEAN					190	1971
HIGHEST DAILY MEAN	26000	Apr 6	2240	May 7	62200	Nov 26 1940
LOWEST DAILY MEAN	75	Sep 24	27	Sep 6	16	Oct 1 1956
ANNUAL SEVEN-DAY MINIMUM	77	Sep 21	28	Sep 4	18	Sep 28 1956
INSTANTANEOUS PEAK FLOW			2260	May 7	67200	Nov 26 1940
INSTANTANEOUS PEAK STAGE			12.40	May 7	27.60	Nov 26 1940
ANNUAL RUNOFF (AC-FT)	670000		156900		641600	
ANNUAL RUNOFF (CFSM)	1.08		.25		1.03	
ANNUAL RUNOFF (INCHES)	14.61		3.42		13.99	
10 PERCENT EXCEEDS	2100		347		2140	
50 PERCENT EXCEEDS	446		156		332	
90 PERCENT EXCEEDS	117		37		80	

e Estimated



08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX

LOCATION.--Lat 30°06′21", long 94°20′04", Jefferson-Hardin County line, Hydrologic Unit 12020007, on right bank on downstream side of bridge on county road and 5.1 mi southeast of Sour Lake.

DRAINAGE AREA.--336 mi^2.

PERIOD OF RECORD.--Oct 1967 to current year.
Water-quality records.--Chemical data: Feb 1968 to Jun 1989. Specific conductance: Feb 1968 to Sep 1989. Water temperature: Feb 1968 to Sep 1989.

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

REMARKS.--No estimated daily discharges. Records good. No known regulation. Low flow for period Mar through Sep is affected by small diversions and return flow from irrigated fields. No flow at times. Periodic observations of water temperature and specific conductance are published in this report as miscellaneous water-quality data.

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)

No peak greater than base discharge.

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

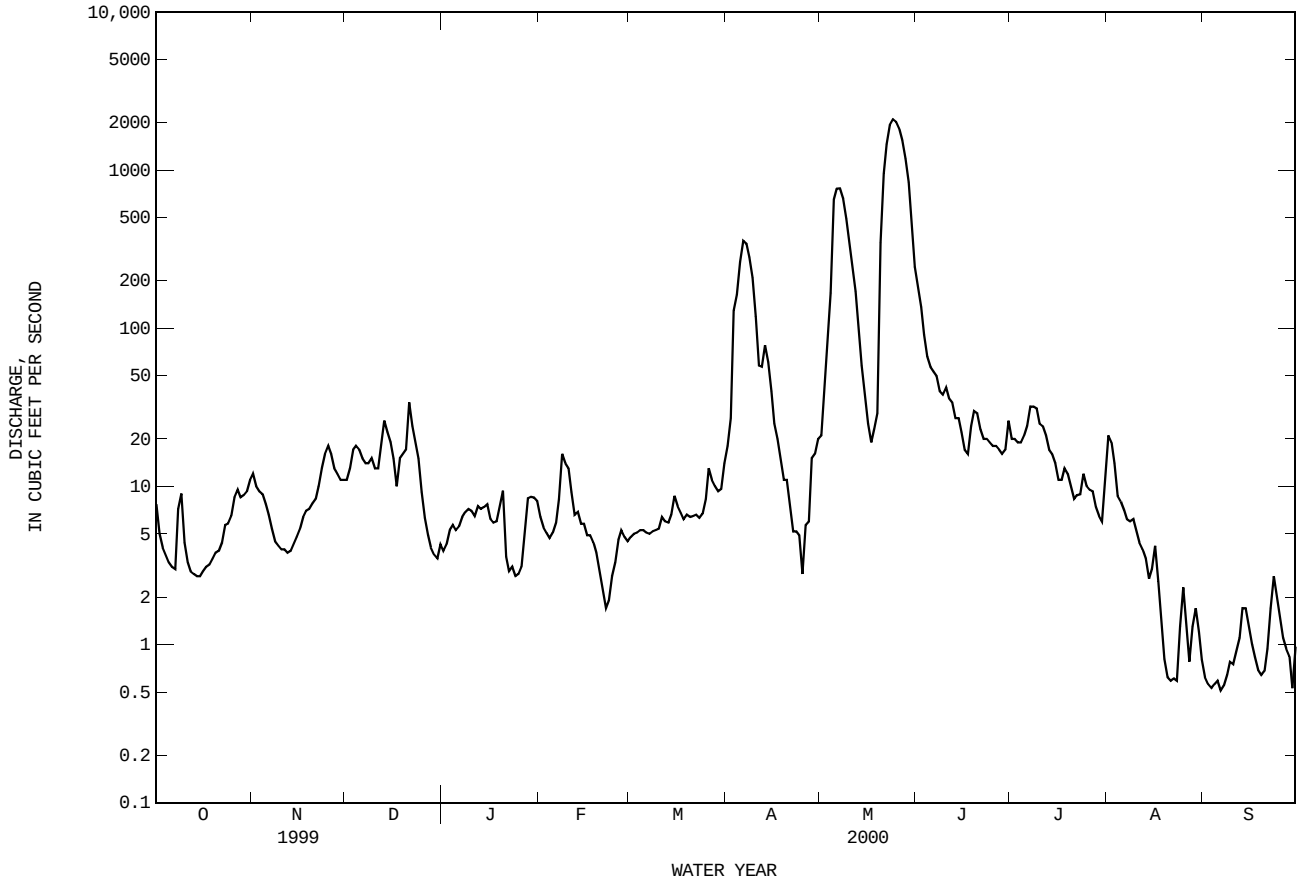
DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.7	12	11	3.9	6.4	4.8	18	21	185	20	21	.62
2	5.0	10	13	4.3	5.5	5.0	27	47	136	20	19	.56
3	4.1	9.3	17	5.3	5.1	5.1	129	92	91	19	14	.53
4	3.7	8.9	18	5.7	4.7	5.3	163	167	66	19	8.7	.56
5	3.3	7.7	17	5.3	5.1	5.3	262	652	57	21	8.0	.59
6	3.1	6.6	15	5.6	5.9	5.1	357	763	53	24	7.1	.51
7	3.0	5.4	14	6.4	8.3	5.0	343	768	50	32	6.2	.55
8	7.2	4.5	14	6.9	16	5.2	282	661	40	32	6.0	.64
9	9.0	4.2	15	7.2	14	5.3	209	493	38	31	6.2	.78
10	4.4	4.0	13	7.0	13	5.4	119	350	42	25	5.2	.75
11	3.3	4.0	13	6.5	9.2	6.4	58	247	36	24	4.4	.91
12	2.9	3.8	18	7.5	6.6	6.0	57	171	34	21	4.0	1.1
13	2.8	3.9	26	7.2	6.9	5.9	78	101	27	17	3.5	1.7
14	2.7	4.3	22	7.4	5.8	6.6	61	58	27	16	2.6	1.7
15	2.7	4.8	19	7.7	5.8	8.7	40	38	22	14	3.0	1.3
16	2.9	5.4	15	6.2	4.9	7.5	25	25	17	11	4.2	1.0
17	3.1	6.4	10	5.9	4.9	6.8	20	19	16	11	2.5	.83
18	3.2	7.0	15	6.0	4.4	6.2	15	23	24	13	1.3	.69
19	3.5	7.2	16	7.5	3.8	6.6	11	29	30	12	.81	.64
20	3.8	7.8	17	9.4	2.9	6.4	11	347	29	10	.62	.68
21	3.9	8.3	34	3.6	2.2	6.5	7.6	948	23	8.3	.59	.94
22	4.4	10	24	2.9	1.7	6.6	5.2	1460	20	8.8	.61	1.7
23	5.7	13	19	3.1	1.9	6.3	5.2	1930	20	8.9	.59	2.7
24	5.8	16	15	2.7	2.7	6.7	4.9	2100	19	12	1.3	2.0
25	6.5	18	9.2	2.8	3.3	8.3	2.8	2020	18	10	2.3	1.5
26	8.5	16	6.3	3.1	4.6	13	5.7	1840	18	9.5	1.3	1.1
27	9.5	13	4.9	5.2	5.3	11	6.0	1540	17	9.3	.78	.94
28	8.5	12	4.1	8.4	4.8	10	15	1180	16	7.4	1.3	.84
29	8.8	11	3.7	8.6	4.5	9.3	16	838	17	6.5	1.7	.53
30	9.3	11	3.5	8.5	---	9.6	20	476	26	6.0	1.2	.97
31	11	---	4.3	8.1	---	14	---	245	---	11	.80	---
TOTAL	163.3	255.5	446.0	185.9	170.2	219.9	2373.4	19649	1214	489.7	140.80	29.86
MEAN	5.27	8.52	14.4	6.00	5.87	7.09	79.1	634	40.5	15.8	4.54	1.00
MAX	11	18	34	9.4	16	14	357	2100	185	32	21	2.7
MIN	2.7	3.8	3.5	2.7	1.7	4.8	2.8	19	16	6.0	.59	.51
AC-FT	324	507	885	369	338	436	4710	38970	2410	971	279	59

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2000, BY WATER YEAR (WY)

MEAN	470	372	562	713	602	567	566	509	596	366	169	239
MAX	8080	2095	2159	2245	1850	1838	4972	3589	2795	3291	1660	1715
(WY)	1995	1987	1987	1998	1992	1993	1979	1989	1981	1989	1983	1998
MIN	2.90	2.48	12.4	4.75	5.87	7.09	21.4	22.8	25.1	15.8	4.54	1.00
(WY)	1970	1989	1990	1971	2000	2000	1987	1998	1998	2000	2000	2000

SUMMARY STATISTICS	FOR 1999 CALENDAR YEAR		FOR 2000 WATER YEAR		WATER YEARS 1968 - 2000	
ANNUAL TOTAL	43509.2		25337.56			
ANNUAL MEAN	119		69.2		477	
HIGHEST ANNUAL MEAN					1167	1979
LOWEST ANNUAL MEAN					69.2	2000
HIGHEST DAILY MEAN	1900	Jun 28	2100	May 24	47400	Oct 20 1994
LOWEST DAILY MEAN	2.7	Oct 14	.51	Sep 6	.00	Oct 21 1979
ANNUAL SEVEN-DAY MINIMUM	2.9	Oct 12	.56	Sep 1	.56	Sep 1 2000
INSTANTANEOUS PEAK FLOW			2120	May 24	48800	Oct 20 1994
INSTANTANEOUS PEAK STAGE			25.51	May 24	37.50	Oct 20 1994
ANNUAL RUNOFF (AC-FT)	86300		50260		345600	
10 PERCENT EXCEEDS	385		62		1330	
50 PERCENT EXCEEDS	28		7.7		78	
90 PERCENT EXCEEDS	4.5		1.4		8.4	

08041700 PINE ISLAND BAYOU NEAR SOUR LAKE, TX--Continued



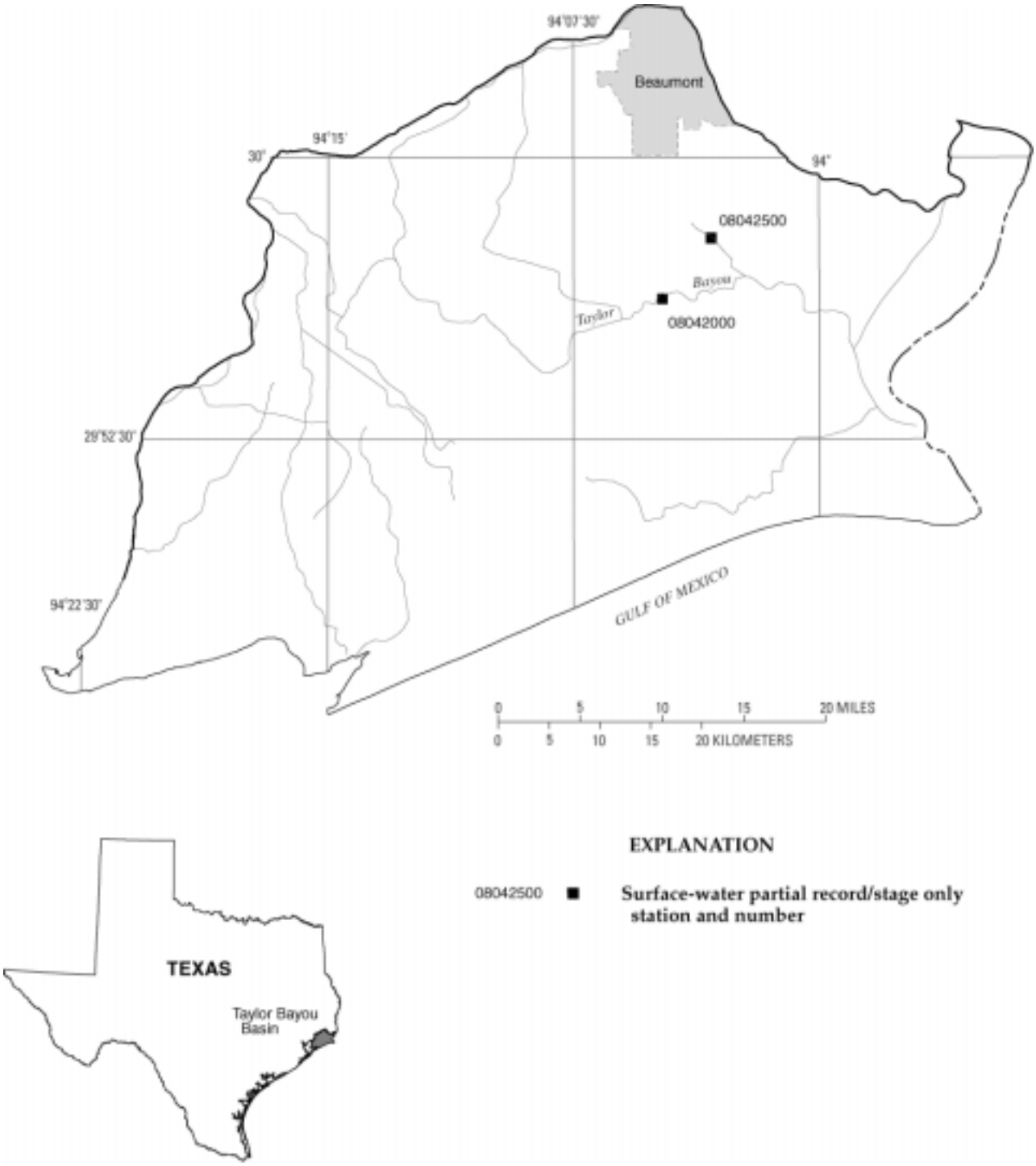


Figure 11.--Map showing location of gaging stations in the Taylor Bayou Basin

08042000 Taylor Bayou near LaBelle, TX 434
08042500 Hillebrandt Bayou near Lovell Lake, TX 436

08042000 TAYLOR BAYOU NEAR LABELLE, TX

LOCATION.--Lat 29°52′30", long 94°09′34", Jefferson County, Hydrologic Unit 12040201, near center of stream on downstream side of bridge on county road, 0.7 mi south of LaBelle, 6.0 mi upstream from Hillebrandt Bayou, 7.2 mi upstream from State Highway 73 and 11.2 mi upstream from saltwater gates and barge locks. Distances are measured along rectified channel.

DRAINAGE AREA.--262 mi^2.

PERIOD OF RECORD.--Apr 1954 to Sep 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for period Sep 10-22, 1961). Oct 1984 to current year (gage heights only).

REVISED RECORDS.--WSP 1922: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by several comparisons of water surface with auxiliary water-stage recorder 7.2 mi downstream during times of no flow and ideal weather conditions. Prior to Oct 1984, auxiliary water-stage recorder 7.2 mi downstream.

REMARKS.--Records good. Prior to Oct 1984, records were computed using fall as a factor. Low flow is regulated by drainage from rice fields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for irrigation of rice fields.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,590 ft^3/s Sep 22, 1963, and Apr 23, 1979; maximum gage height, 11.78 ft Sep 20, 1963 (backwater from Hillebrandt Bayou); minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.31 ft Jul 17, 1954. Maximum stage since at least 1941, that of Sep 20, 1963, and Apr 23, 1979. Flood of Sep 13, 1961 (Hurricane Carla), reached a stage of 11.51 ft.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1941 reached a stage of 11.3 ft, from information by U.S. Army Corps of Engineers.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 7.53 ft, May 3; minimum gage height, 4.47 ft, Jan 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.00	5.84	5.66	5.13	5.91	6.15	6.23	6.30	6.35	6.35	6.05	5.85
2	6.05	5.79	5.81	5.25	5.91	6.15	6.61	6.72	6.32	6.35	6.00	5.88
3	6.11	5.66	6.00	5.39	5.91	6.14	6.86	7.53	6.32	6.35	6.06	5.85
4	6.11	5.69	6.17	5.37	5.96	6.11	6.86	7.32	6.32	6.37	6.09	5.85
5	6.08	5.69	6.18	4.76	5.94	6.12	6.44	7.13	6.37	6.38	6.11	5.84
6	6.05	5.69	6.05	4.77	5.96	6.12	6.39	6.94	6.40	6.37	6.12	5.82
7	6.09	5.69	5.90	4.92	6.05	6.15	6.41	6.83	6.17	6.21	6.12	5.82
8	6.41	5.69	5.93	5.09	6.08	6.14	6.44	6.63	6.24	6.09	6.14	5.84
9	6.57	5.67	5.94	5.19	6.11	6.12	5.99	6.44	6.21	6.06	6.12	5.90
10	6.54	5.69	5.93	5.27	6.14	6.14	6.06	6.32	6.32	6.12	6.11	5.96
11	6.30	5.69	5.90	5.33	6.14	6.20	6.09	6.32	6.35	6.15	6.09	6.06
12	6.14	5.72	6.02	5.39	6.14	6.17	7.04	6.32	6.35	6.17	6.08	6.12
13	6.09	5.72	6.00	5.48	6.15	6.17	7.04	6.32	6.17	6.17	6.08	6.12
14	5.99	5.72	5.93	5.42	6.15	6.32	6.78	6.24	6.21	6.17	6.05	6.11
15	5.82	5.70	5.91	5.42	6.15	6.35	6.53	6.29	6.23	6.17	6.03	6.12
16	5.90	5.67	5.75	5.48	6.15	6.35	6.41	6.30	6.27	6.18	6.00	6.12
17	5.93	5.72	5.77	5.48	6.17	6.21	6.42	6.33	6.41	6.18	5.96	6.11
18	5.87	5.76	6.06	5.46	6.18	6.20	6.26	6.35	6.52	6.18	5.93	6.09
19	5.84	5.79	6.08	5.40	6.18	6.17	6.29	6.36	6.55	---	5.90	6.08
20	5.66	5.79	6.35	5.40	6.17	6.20	6.29	6.83	6.46	---	5.87	6.08
21	5.58	5.79	6.42	5.33	6.15	6.24	6.27	7.06	6.34	---	5.85	6.27
22	5.63	5.85	6.42	5.27	6.17	6.24	6.27	6.78	6.34	---	5.82	6.33
23	5.64	5.99	6.27	5.37	6.17	6.23	6.29	6.20	6.20	---	5.84	6.23
24	5.61	6.00	6.09	5.37	6.17	6.23	6.32	6.30	6.21	---	5.91	6.24
25	5.66	6.02	5.85	5.22	6.17	6.21	6.32	6.32	6.21	---	5.96	6.05
26	5.67	5.94	5.58	5.28	6.18	6.27	6.29	6.32	6.23	---	5.97	6.08
27	5.70	5.93	5.37	5.54	6.17	6.30	6.29	6.35	6.12	---	5.97	6.09
28	5.72	5.90	5.10	5.70	6.18	6.24	6.29	6.36	6.17	6.18	5.96	6.11
29	5.76	5.79	4.91	5.77	6.15	6.24	6.27	6.38	6.20	6.18	5.94	6.11
30	5.88	5.64	4.98	5.82	---	6.24	6.29	6.38	6.17	6.18	5.91	6.12
31	5.87	---	5.06	5.88	---	6.24	---	6.32	---	6.48	5.87	---
MAX	6.57	6.02	6.42	5.88	6.18	6.35	7.04	7.53	6.55	---	6.14	6.33

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08042500 HILLEBRANDT BAYOU NEAR LOVELL LAKE, TX

LOCATION.--Lat 29°55′44", long 94°06′35", Jefferson County, Hydrologic Unit 12040201, near center of stream on downstream side of bridge on county road, 1.3 mi southeast of Lovell Lake and 4.4 mi upstream (along rectified channel) from Taylor Bayou.

DRAINAGE AREA.--128 mi^2.

PERIOD OF RECORD.--Apr 1954 to Sep 1984 (daily mean and peak discharge for storms of 1.0 inch or more runoff, except for the period Sep 11-18, 1961). Oct 1984 to current year (gage heights only).

GAGE.--Water-stage recorder. Datum of gage is 4.63 ft below sea level, originally determined by comparisons of water surface with Taylor Bayou near LaBelle (station 08042000), an auxiliary gage 5.6 mi downstream, during times of no flow and calm wind conditions. Prior to Aug 28, 1963, auxiliary water-stage recorder on Taylor Bayou, 1.2 mi downstream from Hillebrandt Bayou, nonrecording gages on Taylor Bayou 2.3 and 5.2 mi downstream from Hillebrandt Bayou; Aug 28, 1963, to Sep 30, 1984, auxiliary water-stage recorder 3.0 mi downstream. Gage was destroyed on Aug 24, 1991 and re-installed on Mar 4, 1992.

REMARKS.--Records fair. Prior to Oct 1984, records were computed using fall as a factor. Low flow regulated by drainage from rice fields and operation of saltwater gates and barge locks. An unknown amount of water is diverted above and below gage for rice irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft^3/s Sep 18, 1963; maximum gage height, 12.34 ft Sep 19, 1963; minimum discharge not determined (affected by tides and pumping); minimum gage height, 2.33 ft Jul 17, 1954. Maximum stage since at least 1941, 12.34 ft Sep 19, 1963.

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 7.62 ft, May 3; minimum gage height, 4.64 ft, Jan 5.

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

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.13	5.97	5.79	5.27	5.99	6.31	6.39	6.42	6.46	6.47	6.18	5.97
2	6.19	5.93	5.94	5.38	6.01	6.31	6.74	6.84	6.46	6.47	6.12	5.96
3	6.22	5.79	6.18	5.49	6.05	6.30	6.88	7.62	6.46	6.48	6.20	5.96
4	6.23	5.81	6.31	5.53	6.05	6.25	6.69	7.09	6.46	6.52	6.27	5.96
5	6.23	5.81	6.31	4.93	6.06	6.27	6.49	7.08	6.48	6.53	6.27	5.95
6	6.20	5.81	6.21	4.88	6.08	6.30	6.48	6.92	6.48	6.51	6.28	5.94
7	6.23	5.81	6.01	5.05	6.19	6.30	6.55	6.83	6.31	6.39	6.28	5.90
8	6.49	5.81	6.06	5.22	6.22	6.30	6.55	6.75	6.37	6.26	6.28	5.94
9	6.72	5.80	6.12	5.33	6.26	6.30	6.13	6.54	6.34	6.24	6.28	6.04
10	6.70	5.81	6.08	5.40	6.30	6.31	6.24	6.43	6.45	6.32	6.27	6.10
11	6.43	5.81	6.02	5.45	6.30	6.31	6.24	6.45	6.48	6.33	6.27	6.20
12	6.27	5.82	6.14	5.53	6.30	6.31	7.25	6.44	6.48	6.35	6.23	6.23
13	6.23	5.83	6.14	5.58	6.31	6.31	6.95	6.43	6.32	6.35	6.23	6.24
14	6.13	5.83	6.10	5.52	6.30	6.42	6.50	6.39	6.40	6.36	6.20	6.25
15	5.93	5.81	6.03	5.56	6.31	6.47	6.65	6.43	6.41	6.36	6.19	6.26
16	6.00	5.80	5.92	5.61	6.30	6.46	6.51	6.43	6.44	6.36	6.17	6.25
17	6.03	5.83	5.91	5.62	6.31	6.32	6.53	6.45	6.54	6.37	6.16	6.24
18	5.98	5.87	6.20	5.60	6.32	6.32	6.41	6.48	6.65	6.37	6.09	6.24
19	5.92	5.93	6.22	5.55	6.31	6.31	6.43	6.48	6.71	---	6.08	6.24
20	5.79	5.92	6.42	5.53	6.30	6.36	6.43	6.83	6.52	---	6.07	6.25
21	5.70	5.93	6.49	5.44	6.31	6.37	6.42	7.04	6.47	---	5.98	6.37
22	5.75	5.98	6.50	5.41	6.31	6.38	6.42	6.63	6.47	---	5.96	6.46
23	5.75	6.14	6.44	5.45	6.32	6.39	6.45	6.31	6.33	---	5.96	6.37
24	5.73	6.13	6.30	5.43	6.31	6.39	6.45	6.43	6.39	---	6.03	6.37
25	5.77	6.13	6.06	5.36	6.32	6.37	6.43	6.43	6.40	---	6.09	6.15
26	5.79	6.08	5.76	5.38	6.31	6.41	6.43	6.45	6.39	---	6.10	6.20
27	5.81	6.07	5.57	5.62	6.31	6.40	6.43	6.47	6.28	---	6.11	6.22
28	5.82	6.02	5.30	5.80	6.31	6.41	6.43	6.47	6.32	---	6.11	6.23
29	5.87	5.93	5.03	5.87	6.31	6.40	6.42	6.48	6.34	6.30	6.10	6.25
30	5.98	5.76	5.13	5.92	---	6.39	6.43	6.48	6.31	6.31	6.08	6.27
31	5.98	---	5.17	5.98	---	6.34	---	6.45	---	6.64	6.01	---
MAX	6.72	6.14	6.50	5.98	6.32	6.47	7.25	7.62	6.71	---	6.28	6.46

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STATION NUMBER	STATION NAME	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)
07228000	Canadian Rv nr Canadian, TX	10-05-99	1015	18	25300	12.5
	Canadian Rv nr Canadian, TX	02-17-00	1215	62	2770	9.0
	Canadian Rv nr Canadian, TX	06-28-00	1353	416	1400	3.8
	Canadian Rv nr Canadian, TX	08-24-00	1507	2.8	2050	35.0
07235000	Wolf Ck at Lipscomb, TX	10-06-99	1146	1.5	1090	19.5
	Wolf Ck at Lipscomb, TX	02-17-00	1010	4.0	1700	9.0
	Wolf Ck at Lipscomb, TX	03-21-00	1200	4.7	1790	11.5
	Wolf Ck at Lipscomb, TX	06-27-00	1755	8.9	1910	22.0
	Wolf Ck at Lipscomb, TX	08-24-00	1327	.94	857	29.5
07297910	Pr Dog Twn Fk Red Rv nr Wayside, TX	10-07-99	1645	7.0	6000	23.5
	Pr Dog Twn Fk Red Rv nr Wayside, TX	11-17-99	1655	4.5	7380	17.0
	Pr Dog Twn Fk Red Rv nr Wayside, TX	01-25-00	1635	12	4470	8.5
	Pr Dog Twn Fk Red Rv nr Wayside, TX	03-29-00	1035	19	3230	12.0
	Pr Dog Twn Fk Red Rv nr Wayside, TX	06-20-00	1140	7.8	6230	28.0
	Pr Dog Twn Fk Red Rv nr Wayside, TX	08-18-00	0905	.10	30600	21.5
07299540	Pr Dog Twn Fk Red Rv nr Childress, TX	10-04-99	1540	5.7	76400	23.0
	Pr Dog Twn Fk Red Rv nr Childress, TX	11-18-99	1005	7.1	53900	13.5
	Pr Dog Twn Fk Red Rv nr Childress, TX	02-15-00	1600	14	49900	14.0
	Pr Dog Twn Fk Red Rv nr Childress, TX	03-20-00	1505	7.4	49400	21.5
	Pr Dog Twn Fk Red Rv nr Childress, TX	03-24-00	1030	2260	12000	13.5
	Pr Dog Twn Fk Red Rv nr Childress, TX	08-18-00	1350	5.8	79000	35.0
07299670	Groesbeck Ck at SH 6 nr Quanah, TX	10-04-99	1227	16	5460	17.0
	Groesbeck Ck at SH 6 nr Quanah, TX	03-20-00	1125	18	5270	12.0
	Groesbeck Ck at SH 6 nr Quanah, TX	05-02-00	1159	72	1140	16.5
	Groesbeck Ck at SH 6 nr Quanah, TX	06-19-00	1259	32	3110	21.0
	Groesbeck Ck at SH 6 nr Quanah, TX	08-22-00	1058	17	5230	27.0
07301410	Sweetwater Ck nr Kelton, TX	09-12-00	1454	.33	1340	29.0
07307800	Pease Rv nr Childress, TX	10-04-99	1250	4.3	24800	15.0
	Pease Rv nr Childress, TX	11-18-99	1050	5.7	32300	18.6
	Pease Rv nr Childress, TX	01-12-00	1300	6.8	33600	13.0
	Pease Rv nr Childress, TX	03-20-00	1445	5.8	34000	23.5
	Pease Rv nr Childress, TX	05-24-00	1410	3.4	29400	35.0
	Pease Rv nr Childress, TX	07-21-00	1645	5.0	26500	36.7
07308200	Pease Rv nr Vernon, TX	10-07-99	1004	.55	5800	17.8
	Pease Rv nr Vernon, TX	11-18-99	1610	.86	6310	19.9
	Pease Rv nr Vernon, TX	01-12-00	1435	7.5	14600	15.4
	Pease Rv nr Vernon, TX	03-20-00	1050	9.9	15500	13.3
	Pease Rv nr Vernon, TX	07-19-00	1440	27	10300	35.6
07312110	S Side Canal nr Dundee, TX	04-05-00	1505	3.4	5570	17.0
07314500	Little Wichita Rv nr Archer City, TX	03-08-00	1020	.95	380	14.6
	Little Wichita Rv nr Archer City, TX	03-27-00	0940	3.1	384	18.2
	Little Wichita Rv nr Archer City, TX	05-01-00	1850	300	272	20.5
	Little Wichita Rv nr Archer City, TX	05-02-00	1820	504	1820	18.6
07314900	Little Wichita Rv abv Henrietta, TX	11-05-99	1600	.02	701	13.6
	Little Wichita Rv abv Henrietta, TX	07-07-00	1330	11	801	31.0
07315200	E Fk Little Wichita Rv nr Henrietta, TX	05-02-00	1535	96	410	19.4
	E Fk Little Wichita Rv nr Henrietta, TX	05-31-00	1200	.91	218	27.3

MULTIPLE STATION ANALYSES

STATION NUMBER	STATION NAME	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)
07315500	Red Rv nr Terral, OK	02-04-00	1140	266	6260	8.2
	Red Rv nr Terral, OK	04-27-00	1500	549	--	22.6
	Red Rv nr Terral, OK	06-15-00	1100	1580	8900	23.1
	Red Rv nr Terral, OK	08-10-00	0925	226	6000	26.4
07342465	S Sulphur at Commerce, TX	03-07-00	1110	20	271	17.5
07342500	S Sulphur Rv nr Cooper, TX	11-16-99	1115	2.7	254	15.0
	S Sulphur Rv nr Cooper, TX	12-30-99	0908	5.5	257	9.5
	S Sulphur Rv nr Cooper, TX	05-31-00	0805	6.7	333	27.0
	S Sulphur Rv nr Cooper, TX	08-15-00	1405	48	233	31.0
07343000	N Sulphur Rv nr Cooper, TX	11-16-99	1145	.14	2050	19.1
	N Sulphur Rv nr Cooper, TX	03-08-00	1045	32	585	19.8
07343210	Sulphur Rv bl Talco, TX	01-04-00	1133	11	454	9.4
	Sulphur Rv bl Talco, TX	03-15-00	1240	217	266	13.7
	Sulphur Rv bl Talco, TX	05-17-00	1115	152	263	23.5
	Sulphur Rv bl Talco, TX	07-13-00	1500	127	268	27.0
	Sulphur Rv bl Talco, TX	08-16-00	1345	35	378	27.0
	Sulphur Rv bl Talco, TX	09-19-00	1115	12	365	23.0
07343500	White Oak Ck nr Talco, TX	11-17-99	1007	1.6	633	13.8
	White Oak Ck nr Talco, TX	01-04-00	0858	3.1	325	8.9
	White Oak Ck nr Talco, TX	05-05-00	1200	1500	290	15.5
	White Oak Ck nr Talco, TX	05-22-00	1730	1780	234	23.5
	White Oak Ck nr Talco, TX	06-19-00	1630	3370	250	25.0
	White Oak Ck nr Talco, TX	08-17-00	1000	.06	946	30.0
07344486	Brushy Ck at Scroggins, TX	11-17-99	1349	3.6	183	13.8
	Brushy Ck at Scroggins, TX	01-03-00	1500	4.5	193	13.7
	Brushy Ck at Scroggins, TX	03-09-00	0910	6.8	181	16.3
	Brushy Ck at Scroggins, TX	05-03-00	1000	7.6	--	18.0
	Brushy Ck at Scroggins, TX	08-17-00	1223	.56	394	30.5
07344500	Big Cypress Ck nr Pittsburg, TX	03-14-00	1128	46	488	15.8
	Big Cypress Ck nr Pittsburg, TX	07-14-00	1015	22	219	29.0
07346045	Black Cypress Bayou at Jefferson, TX	11-16-99	0930	27	209	14.0
	Black Cypress Bayou at Jefferson, TX	11-16-99	1040	27	94	14.0
	Black Cypress Bayou at Jefferson, TX	11-16-99	1051	27	57	14.0
	Black Cypress Bayou at Jefferson, TX	12-08-99	1410	62	80	10.2
	Black Cypress Bayou at Jefferson, TX	12-08-99	1529	62	80	10.2
	Black Cypress Bayou at Jefferson, TX	03-09-00	1051	196	206	19.0
	Black Cypress Bayou at Jefferson, TX	03-09-00	1212	196	290	16.0
	Black Cypress Bayou at Jefferson, TX	05-18-00	1407	186	310	20.1
	Black Cypress Bayou at Jefferson, TX	05-23-00	1501	4210	230	22.0
07346050	Little Cypress Ck nr Ore City, TX	02-16-00	1220	27	155	16.0
	Little Cypress Ck nr Ore City, TX	03-10-00	0721	63	259	20.0
	Little Cypress Ck nr Ore City, TX	05-05-00	0852	164	259	19.3
	Little Cypress Ck nr Ore City, TX	05-05-00	1217	1800	259	19.2
08017200	Cowleech Fk Sabine Rv at Greenville, TX	03-07-00	0822	3.1	375	16.3
	Cowleech Fk Sabine Rv at Greenville, TX	03-07-00	0858	3.1	375	16.3
	Cowleech Fk Sabine Rv at Greenville, TX	08-14-00	1322	.20	382	29.5
08017300	S Fk Sabine Rv nr Quinlan, TX	01-31-00	1435	3.8	473	3.9

STATION NUMBER	STATION NAME	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)
08018500	Sabine Rv nr Mineola, TX	12-16-99	1530	48	--	13.7
	Sabine Rv nr Mineola, TX	03-15-00	1145	109	--	15.5
	Sabine Rv nr Mineola, TX	05-05-00	1015	486	--	19.0
	Sabine Rv nr Mineola, TX	08-29-00	1449	1.5	--	29.0
08019000	Lk Fk Ck nr Quitman, TX	06-16-00	1200	17800	--	24.5
08019200	Sabine Rv nr Hawkins, TX	03-10-00	1136	201	308	18.6
	Sabine Rv nr Hawkins, TX	03-31-00	1515	245	203	16.5
	Sabine Rv nr Hawkins, TX	05-24-00	0750	1100	227	23.5
	Sabine Rv nr Hawkins, TX	09-07-00	1320	98	194	28.4
08019500	Big Sandy Ck nr Big Sandy, TX	03-31-00	1140	134	203	18.5
08020000	Sabine Rv nr Gladewater, TX	12-10-99	1001	250	--	11.3
	Sabine Rv nr Gladewater, TX	05-22-00	1510	2970	201	23.0
	Sabine Rv nr Gladewater, TX	09-07-00	1220	69	201	29.7
08020450	Sabine Rv abv Longview, TX	08-16-00	1101	82	254	30.1
08020900	Sabine Rv bl Longview, TX	10-22-99	1232	123	369	14.1
	Sabine Rv bl Longview, TX	12-09-99	1502	320	367	13.7
	Sabine Rv bl Longview, TX	03-01-00	1421	1040	232	17.1
	Sabine Rv bl Longview, TX	08-16-00	0920	120	315	29.3
08022040	Sabine Rv nr Beckville, TX	12-09-99	1018	340	370	13.5
	Sabine Rv nr Beckville, TX	12-09-99	1112	340	370	13.5
	Sabine Rv nr Beckville, TX	03-02-00	1038	1200	292	17.5
	Sabine Rv nr Beckville, TX	03-02-00	1320	1200	292	17.5
	Sabine Rv nr Beckville, TX	05-03-00	1436	824	270	17.5
	Sabine Rv nr Beckville, TX	05-23-00	0740	5650	209	23.0
	Sabine Rv nr Beckville, TX	05-23-00	0835	5650	209	23.0
	Sabine Rv nr Beckville, TX	08-17-00	0712	137	354	30.3
	Sabine Rv nr Beckville, TX	08-17-00	0915	130	354	30.5
08026000	Sabine Rv nr Burkeville, TX	01-10-00	1215	354	124	19.9
	Sabine Rv nr Burkeville, TX	02-28-00	1500	346	92	16.2
	Sabine Rv nr Burkeville, TX	04-26-00	1010	422	125	21.8
08028500	Sabine Rv nr Bon Wier, TX	11-07-99	1330	1120	143	19.0
	Sabine Rv nr Bon Wier, TX	11-10-99	1530	956	148	18.0
	Sabine Rv nr Bon Wier, TX	11-17-99	1025	1120	148	17.0
	Sabine Rv nr Bon Wier, TX	11-24-99	1635	955	149	17.5
	Sabine Rv nr Bon Wier, TX	12-05-99	1630	1380	162	18.0
	Sabine Rv nr Bon Wier, TX	12-08-99	1645	1090	196	16.0
	Sabine Rv nr Bon Wier, TX	12-14-99	1445	925	206	16.0
	Sabine Rv nr Bon Wier, TX	12-26-99	1230	1330	152	12.0
	Sabine Rv nr Bon Wier, TX	12-31-99	1055	1120	172	12.0
	Sabine Rv nr Bon Wier, TX	01-03-00	1715	645	173	12.0
	Sabine Rv nr Bon Wier, TX	01-09-00	1615	1060	149	16.0
	Sabine Rv nr Bon Wier, TX	01-11-00	1125	618	191	17.5
	Sabine Rv nr Bon Wier, TX	01-20-00	1455	675	181	18.0
	Sabine Rv nr Bon Wier, TX	04-06-00	1230	5100	130	19.0
	Sabine Rv nr Bon Wier, TX	04-11-00	1845	1800	214	21.0
	Sabine Rv nr Bon Wier, TX	04-19-00	1825	1190	174	24.0
	Sabine Rv nr Bon Wier, TX	04-25-00	1320	985	193	25.0
	Sabine Rv nr Bon Wier, TX	04-26-00	1945	1130	180	24.0
	Sabine Rv nr Bon Wier, TX	05-06-00	1505	12300	79	23.0
	Sabine Rv nr Bon Wier, TX	05-12-00	1100	6600	134	25.0

MULTIPLE STATION ANALYSES

STATION NUMBER	STATION NAME	DATE	TIME	DIS-CHARGE, INST. CUBIC FEET PER SECOND (00061)	SPE-CIFIC CON-DUCT-ANCE (US/CM) (00095)	TEMPER-ATURE WATER (DEG C) (00010)
08028500	Sabine Rv nr Bon Wier, TX	05-19-00	1255	6560	134	25.0
	Sabine Rv nr Bon Wier, TX	05-25-00	1245	4750	147	28.0
	Sabine Rv nr Bon Wier, TX	06-20-00	1400	2470	188	30.0
	Sabine Rv nr Bon Wier, TX	07-08-00	1610	6990	147	31.0
	Sabine Rv nr Bon Wier, TX	07-14-00	1225	14100	158	32.0
	Sabine Rv nr Bon Wier, TX	07-17-00	1950	907	158	33.0
	Sabine Rv nr Bon Wier, TX	07-28-00	1015	6380	142	30.0
	Sabine Rv nr Bon Wier, TX	08-02-00	1040	6650	140	29.0
	Sabine Rv nr Bon Wier, TX	09-03-00	1230	2320	148	30.0
	Sabine Rv nr Bon Wier, TX	09-09-00	1405	5190	151	29.5
08029500	Big Cow Ck nr Newton, TX	01-11-00	1450	63	32	14.0
	Big Cow Ck nr Newton, TX	02-29-00	1440	63	34	16.3
	Big Cow Ck nr Newton, TX	04-25-00	1615	91	31	20.1
	Big Cow Ck nr Newton, TX	06-20-00	1610	45	35	26.5
08030500	Sabine Rv nr Ruliff, TX	01-14-00	0820	1280	137	16.7
	Sabine Rv nr Ruliff, TX	03-03-00	0800	1430	202	19.0
	Sabine Rv nr Ruliff, TX	04-28-00	0910	1580	179	24.3
	Sabine Rv nr Ruliff, TX	06-14-00	1400	1130	130	30.5
	Sabine Rv nr Ruliff, TX	08-01-00	1120	3140	146	28.4
08032000	Neches Rv nr Neches, TX	03-08-00	0930	156	178	19.3
	Neches Rv nr Neches, TX	04-20-00	1030	154	178	23.0
	Neches Rv nr Neches, TX	08-16-00	1515	108	200	30.1
08033500	Neches Rv nr Rockland, TX	01-12-00	0850	274	212	13.5
	Neches Rv nr Rockland, TX	03-01-00	0845	380	260	17.0
	Neches Rv nr Rockland, TX	04-19-00	1130	1570	179	22.5
	Neches Rv nr Rockland, TX	06-15-00	1500	2370	165	29.2
08036500	Angelina Rv nr Alto, TX	04-20-00	1602	2020	165	22.7
	Angelina Rv nr Alto, TX	08-18-00	1115	14	375	30.2
08039100	Ayish Bayou nr San Augustine, TX	08-02-00	1400	1.7	176	25.5
08040600	Neches Rv nr Twn Bluff, TX	01-12-00	1540	2730	162	16.0
	Neches Rv nr Twn Bluff, TX	04-18-00	1625	1710	171	21.5
	Neches Rv nr Twn Bluff, TX	04-26-00	1620	1280	166	29.2
	Neches Rv nr Twn Bluff, TX	06-16-00	1045	5180	146	28.5
	Neches Rv nr Twn Bluff, TX	08-03-00	1615	1260	158	31.0
	Neches Rv nr Twn Bluff, TX	08-09-00	1200	1080	165	30.0
08041000	Neches Rv at Evadale, TX	01-13-00	1325	2710	142	17.1
	Neches Rv at Evadale, TX	01-26-00	1005	2800	143	13.0
	Neches Rv at Evadale, TX	03-02-00	0835	941	152	19.0
	Neches Rv at Evadale, TX	04-27-00	1100	1250	176	25.5
	Neches Rv at Evadale, TX	05-11-00	0803	3060	118	26.5
	Neches Rv at Evadale, TX	07-17-00	1122	1480	165	33.2
	Neches Rv at Evadale, TX	08-01-00	1415	1320	168	30.0
08041500	Village Ck nr Kountze, TX	01-13-00	1035	177	73	16.5
	Village Ck nr Kountze, TX	03-02-00	1115	200	70	19.0
	Village Ck nr Kountze, TX	04-27-00	1428	170	92	23.5
	Village Ck nr Kountze, TX	05-30-00	1235	144	90	30.1
	Village Ck nr Kountze, TX	07-18-00	1154	47	97	32.4
	Village Ck nr Kountze, TX	09-06-00	0949	27	113	28.3
08041550	Village Ck at SH 327 nr Silsbee, TX	03-02-00	1425	211	74	21.2
	Village Ck at SH 327 nr Silsbee, TX	07-17-00	1500	55	95	33.4
08041700	Pine Island Bayou nr Sour Lk, TX	02-02-00	1335	5.5	228	12.1
	Pine Island Bayou nr Sour Lk, TX	04-04-00	1500	151	224	19.0
	Pine Island Bayou nr Sour Lk, TX	05-03-00	1250	84	219	20.1
	Pine Island Bayou nr Sour Lk, TX	05-05-00	0934	700	115	21.7
	Pine Island Bayou nr Sour Lk, TX	09-06-00	1251	.50	241	29.1
08041720	Pine Island Bayou at SH 105 nr Sour Lk, TX	03-09-00	1330	1.1	415	26.0
	Pine Island Bayou at SH 105 nr Sour Lk, TX	07-18-00	0915	21	209	30.3

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The U.S. Geological Survey collects limited streamflow data at sites other than continuous stream-gaging stations because 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. 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. 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 of those events. The data collected for special reasons are called measurements at miscellaneous sites.

Streamflow data collected at partial-record stations where water-quality data other than observations of water temperature are not obtained are presented in two tables. The first is a table of discharge measurements at low-flow partial-record stations; the second is a table of annual maximum stage and (or) discharge at crest-stage stations. Discharge measurements made at miscellaneous sites for both low and high flows are given in a third table. Discharge measurements and water-quality data collected at partial-record stations are presented in downstream order in the section of this report entitled “Gaging-station records.”

Low-flow partial-record stations

Measurements of streamflow at low-flow partial-record stations that are not published in the gaging-station section are given in the following table. Most of the measurements of low flow were made during periods when streamflow was sustained primarily by ground-water discharge. These measurements, when correlated with the simultaneous discharge of a nearby stream where continuous records are available, will indicate the low-flow potential of the stream. The years listed in the column headed “Period of record” identifies the water years in which measurements were made at the same or at practically the same site.

Discharge measurements made at low-flow partial-record station during water year 1999

Station number	Station name	Location	Drainage area (mi^2)	Period of record	Measurements	
					Date	Discharge (ft^3/s)
		Neches River Basin				
08041550	Village Creek at State Highway. 327 near Silsbee, TX	Lat 30º20’48”, long 94º16’44”, Hardin County, at bridge on State Highway 327, about 1.6 mi upstream from Mill Creek, and 2.7 mi west of Silsbee.	1,043	1979-2000	11-22-99 03-02-00 07-17-00	112 211 55.3
08041720	Pine Island Bayou at State Highway 105 near Sour Lake, TX	Lat 30º08’08”, long 94º16’44”, Hardin-Jefferson County line, at bridge on State Highway 105, about 2.0 mi upstream from mouth of Little Pine Island Bayou, and 7.90 mi east of Sour Lake.	338	1979-2000	03-18-00 07-18-00	1.07 20.7

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